



# WOLFGANG INTERNATIONAL

*Manufacturers of custom & reproduction VW products*  
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**Hello,**

**Thank you for taking the time to read this catalog. This catalog contains parts and items pertaining to a bus or type 2 vehicle. Customers who are interested in other types of vehicles such as Bugs or Off-Road cars don't always feel like sifting through all the extra information relating to other vehicles. If you have interest in parts for other types of VW's, give us a call and just ask us for that particular catalog.**

**Wolfgang has been in business since 1994, but the staff and employees here have been in this line of work for a lot longer. If you have a question about a product, chances are we have tested it on our own cars. We will give you our opinion of the product's performance, whether it is good or if it is bad. If for some reason you don't see what you are looking for in this catalog, please call; we probably have it, but if we don't, we will tell you where to try and find it.**

**Steve Phillips  
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for monthly specials and the most  
up-to-date listings of available parts!***

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## STOCK REPLACEMENT PARTS

### NEW CRANKCASE



We only carry new dual relief cases. These cases are far superior to the old single relief cases. The oil galleys of the dual relief case is twice as big in diameter and there's more webbing in the case.

043 101 025	1600	
113 198 033	Hardware kit for new case	1600

### MAIN BEARING DOWEL PIN



These pins position the main bearings in the case halves so you can line up the oil galley holes with the main bearings. On the case half with the six main studs you should have four pins. On the other case half, you will have just one pin in the center main.

111 101 123	Pin	All
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### CASE HALF WASHERS AND NUTS



These nuts and washers are used on the 1500-1600cc cases. They go around the six main case studs in the middle.

043 101 129	Washer	
N111351	12mm nut	

### CASE HALF SEALING NUTS



These nuts are used on cases without o-rings, usually 36hp and early 40hp. They go around the six main case studs in the middle. The nuts should be replaced anytime the case halves are split.

Note: Do not use a washer under the nuts. The red side of the nut goes towards the case. 1500 and 1600 motors do not use these.

113 101 131A	Sealing Nut	40 hp
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### CAM PLUG



This plug goes in the back of the case (flywheel side). We usually seal this plug into the case with 3M glue. If you have a manual transmission put the open side of the plug in towards the cam. If you have an automatic transmission the open side goes towards the flywheel. Note: Don't get carried away with sealer as it may fill the cam bearing on the end of the shaft.

113 101 157C	Ridged style	1500-1600
040 101 157	Smooth rubber style	New case 1600

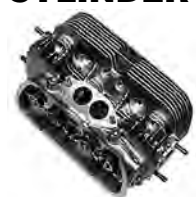
### ALTERNATOR-GENERATOR STAND



This stand holds the generator or alternator in place. It's possible to put a generator on an alternator stand but not the other way around. Note: If you are buying this to change from 6v to 12v don't forget that you will also need to change the strap, pulley and rear generator tin.

113 101 211G	Alt-gen. stand 12v	40 hp-1600
113 101 219	Gasket	40 hp-1600
113 101 221B	Deflector	1500-1600
113 115 475	Filler gasket	40 hp-1600

### CYLINDER HEADS



All of our rebuilt cylinder heads are built from non-cracked or non-welded head cores (rebuilt welded heads will usually crack again next to the weld). Bad guides are replaced and new exhaust valves are installed along with a three angle valve job. All heads are bead blasted and measured for cc volume. Flycutting is done if needed. Note: It is better to buy these in pairs so we can match up a pair by cc's. The

amount of cc's greatly affects the compression ratio. We do not believe in head shims, but recommend barrel shims to lower the compression ratio. CORES FOR REBUILT HEADS MUST NOT HAVE CRACKS OR WELDS

113 101 353ERB	Rebuilt head	40 hp
113 101 353ECO	Core	40 hp
113 101 353BRB	Rebuilt head	1300
113 101 353BCO	Core	1300
311 101 353ARB	Rebuilt single port head	1500-1600
311 101 353ACO	Core, single port	1500-1600
113 101 355ARB	Rebuilt dual port head	1600
113 101 355ACO	Core, Dual port	1600
New heads are just that; new. No core required.		
311 101 353A	New single port head bare	1500-1600
113 101 355A	New dual port head	1600
021 101 361K	1700cc	72-73
022 101 361C	1800cc	74-75
039 101 061D	2.0 Round Port	76-78
071 101 061D	2.0 Square Port	79-83
025 101 065C	1.9 and 2.1	83-92

### VALVE GUIDES



If you're rebuilding your own heads you will probably need guides. Oversize guides refer to the outer diameter. Note: When installing, heat the head and freeze the guide so they will go in easier. We advise you not to try this yourself

unless you have experience in replacing guides.

111 101 401B	Standard	36hp
111 101 401B02	.002 oversize	36hp
113 101 401	Standard	40 hp-1600
113 101 40102	.002 oversize	40 hp-1600
113 101 40105	.005 oversize	40 hp-1600
113 101 40108	.008 oversize	40 hp-1600

### CYLINDER HEAD WASHERS AND NUTS



These nuts and washers hold the heads on. The washers are thick so they won't deform under heat and torque. The torque on the 10mm nuts are 28 ft. lbs. and the 8mm nuts are 18 ft. lbs. One trick is to use 3M glue on the bottom of the washers in the rocker area to prevent leaking through the head.

021 101 457	10mm nut	36 hp-2000
111 101 461	10mm washer	36 hp-2000
043 101 457	8mm nut	1600
N154011	8mm washer	1600

### VALVE COVER GASKET



This gasket goes between the valve cover and the head. We usually put them on dry. If they leak; we use a sealer called Gasgacinch on the valve cover side of the gasket only and just under the bottom of the head side. If they still leak, replace the valve cover bail and maybe even the cover itself. Never use 3M glue on these unless you never, ever plan to get them back off again.

111 101 481	Gasket	36hp
113 101 481F	Gasket	40 hp-1600
021 101 481	Gasket	1700-2000

## REGROUND CRANKSHAFT



These are used cranks with reground rod and main journals. Each crank is checked for cracks and wallowed out dowel pin holes. We only grind to 10 under, 20 under and 30 under; any further and the bearings are getting too thick. We also grind on the high side of the scale to insure maximum life out of the crank. A 10 under crank will read 2.155; a 20/ 2.145, and a 30/2.135. If you mic a used crank and the last number is below a 4 then you shouldn't run it. Example: The reading you get is 2.15382. This is a worn out 10 under crank and should be turned in for a 20 under. All cranks are sold on an exchange bases, cores must be usable.

111 105 10110	.010 under	36hp
111 105 10120	.020 under	36hp
111 105 10130	.030 under	36hp
111 105 101C0	Core	36hp
113 105 101A10	.010 under	40hp
113 105 101A20	.020 under	40hp
113 105 101A30	.030 under	40hp
113 105 101AC0	Core	40hp
311 105 101B10	.010 under	1500
311 105 101B20	.020 under	1500
311 105 101B30	.030 under	1500
311 105 101BC0	Core	1500
311 105 101F10	.010 under	1600
311 105 101F20	.020 under	1600
311 105 101F30	.030 under	1600
311 105 101FC0	Core	1600

## CRANKSHAFT TIMING GEAR



This is a steel gear that goes on the crank to turn the cam. To get the gear off the crank, use a puller that is designed specifically for this purpose. Never use a hammer and a punch. When people take the gear off with a punch, it distorts the tooth that they are hitting which causes it to bind the cam gear. If you have the gear off the crank, look for punch marks on the beveled side before you put it back on. Note: Putting the gear on is done with heat. We use a propane torch to heat the gear but not enough to turn it blue. With a big pair of channel locks pick it up and install. If you do it right, it should slide right on. If it only goes half way pull it back off with the correct puller and try again. The bevel side always goes toward the rods. One last note: Do not forget the main bearing behind the gear.

113 105 209	Timing Gear	40 hp-1600
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## TIMING GEAR WOODRUFF KEY



This key goes into the crank to align the steel crankshaft timing gear with the brass distributor drive gear. Note: Install it with a brass drift and make sure it lays flat to make it easier to install the gears.

111 105 213	Woodruff Key	All
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## DISTRIBUTOR DRIVE GEAR



This brass gear goes on the crank to turn the distributor drive shaft. If you're putting on a used gear, make sure that it's not all chewed up. Note: When putting the gear on we use a propane torch like we did on the crankshaft timing gear. Both gears should be put on at the same time. Don't get it too hot or the I.D. may distort.

111 105 223	Drive Gear	All
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## DISTRIBUTOR DRIVE



This gear matches up with the brass gear that is on the crank. Please read CRANK DISTRIBUTOR DRIVE GEAR for more info. We put this gear in before we put the case halves together. To do this, install the gear into the case with the two shims. Then install the distributor and bolt it down. Press up on the distributor drive gear and measure the endplay. You should have around .010" of play. If you have a lot more than that, add some shims until you get close. Once you've done that, align the clips of the distributor parallel to the cylinder and tighten your pinch clamp so the body of the distributor doesn't move. Now point the rotor of the distributor to the hash mark on the distributor body where the #1 cylinder would fire. Don't move anything from this point. Grab your crank by the #1 rod and set it down in the case and you will be in time.

113 105 231B	Distributor drive	40hp-1600
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## DISTRIBUTOR DRIVE SHIMS



These are the shims that set the endplay of the distributor drive gear. You must have no less than two shims. Read DISTRIBUTOR DRIVE for more info.

111 105 235A	Shims	All
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## OIL DEFLECTOR



This is a big concave washer that goes on the crank after you have the nose bearing on. It keeps the oil spray, that comes out of the nose bearing, from shooting out of the pulley end of the case. Note: It is installed with convex toward the rods and the concave toward the pulley. It can be installed backwards, and if it is, it will dig into the case, filling it with shavings and causing a major blow up.

113 105 241A	Oil Deflector	40 hp-1600
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## FLYWHEEL SEAL



This seal goes behind the flywheel. It should be replaced every time the flywheel is taken off. If your seal is leaking now, take the flywheel off and pry the seal out. Now remove the shims and call a friend. Have your friend push and then pull the front pulley while you look at the rear main bearing. If the bearing is moving, a new seal will not solve your problem. The engine will have to be taken apart and the case will need to be machined. If it is not moving, then you will want to check your end play before installing the new seal. See CRANKSHAFT END PLAY SHIMS for instruction on how to do this. Install the seal and make sure it's all the way in (about 1/16" past flush). If you do not have a flywheel seal installer, turn your old seal upside down and use it to drive the new one in using a hammer. Note: The end play (amount the crank is allowed to move back and forth) is .003" to .005". This measurement is very important if you want the engine to last.

111 105 245	Seal	36 hp
113 105 245FS	Silicone Seal	40 hp-1600
029 105 245B	Seal	1700-2000
311 105 295A	Flywheel O-ring	1500-1600

## FRONT CRANKSHAFT SEAL



This seal goes behind the fan on late model buses. It should be replaced if you are splitting the case halves.

021 105 247A		1700-2000
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## PULLEY WOODRUFF KEY



This key holds the oil deflector in place, as well as, aligns the front pulley. Note: Put the key in before you install the crank in the case, use a brass drift and make sure it lays flat.

113 105 249	Woodruff Key	40 hp-1600
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## CRANKSHAFT PULLEY



This pulley on the end of the crank turns the fan belt. It's also used for timing and adjusting your valves. We highly suggest you use a stock size pulley, as a smaller pulley turns the fan slower. The main reason for replacing the pulley is that the old one got bent. Note: Put a little white grease on the inside of where it slides on the crank to make it slide on easier.

113 105 251G Pulley 1500-1600

## CRANKSHAFT PULLEY BOLT & WASHER



This is a special spring washer used behind the crankshaft pulley bolt. The concave goes out towards the bolt.

111 105 259 Washer 40 hp-1600  
111 105 263A Bolt 40 hp-1600

## FLYWHEEL



These flywheels have been reconditioned and are sold on an exchange basis. If your flywheel has a groove where the clutch rides, then it's probably a good idea to replace it. Read CRANKSHAFT ENDPLAY SHIMS for important instructions on flywheel installation.

111 105 271RC	180mm w/o o-ring 6v	36 hp
111 105 271CO	Core	36 hp
113 105 271BRC	180mm w/o o-ring 6v	40 hp
113 105 271BCO	Core	40 hp
113 105 271CRC	180mm w/o-ring	40hp-1300
113 105 271CCO	Core required upfront	40hp-1300
211 105 271RC	200mm w/o o-ring 6v	1500-1600
211 105 271CO	Core required upfront	1500-1600
211 105 271CRC	200mm w/o-ring 6v	1500-1600
211 105 271CCO	Core required upfront	1500-1600
311 105 273ARC	200mm w/o-ring 12v	1600
311 105 273ACO	Core	1600
311 105 273AN	200mm w/o-ring 12v	1600 new

## FLYWHEEL DOWEL PIN



These pins hold the flywheel in place on the crankshaft. Should the hole that these go into become oveled throw away the crank or flywheel, whichever one is oveled. Attempts to fix them are risky, since it is difficult and expensive to make the surfaces flat and true.

113 105 277 Dowel Pin 40 hp-1600

## FLYWHEEL GLAND NUT



It's really a bolt, but that's what everybody calls it. This bolt holds the flywheel on. If you are using an old one make sure the needle bearings are still in the end and that it's not rusted. Note: This bolt should be put on with a torque wrench and not a breaker

bar with someone jumping off the roof. Impact guns are out too! Torque the bolt to 250 foot pounds, anything less and it will come loose. Anything more and you run the risk of cracking the bolt and having the flywheel fall off.

111 105 305E	Gland nut	36 hp-1600
111 105 297	Flywheel lock washer	36 hp-1600
111 105 313A	Gland nut bearing only	All

## CRANKSHAFT END PLAY SHIMS



These shims set the end play of the crankshaft. It is very important that you get this right. The end play should be between .003" to .005". Too loose and you will beat out the rear main bearing, too tight and the flywheel will try to grab the rear main bearing and spin it. If you are going to use old shims, make sure they are not cupped. Flex them

one by one to see if they pop; if they do, they're cupped. Note: The way to set the end play is to leave out the flywheel seals and find three .010" shims; install the three shims and bolt on the flywheel. Torque the flywheel to 250ft. lbs. Using a dial indicator mounted on the flywheel with the needle against the case, push the flywheel back and forth to get a reading. If you have too little or too much then take the flywheel off and figure out what you need to add or subtract to come up with the correct end play. You may need to take out a shim(s) and add a thicker one(s). You must have a total of three shims; no more no less. After you get the correct thickness, install the seal.

113 105 281A	O-ring .24mm (.010)	1500-1600
113 105 283A	O-ring .30mm (.012)	1500-1600
113 105 285A	O-ring .32mm (.013)	1500-1600
113 105 287A	O-ring .34mm (.0135)	1500-1600
113 105 289A	O-ring .36mm (.014)	1500-1600
021 105 281	.30mm (.012)	1700-2000
021 105 283	.32mm (.013)	1700-2000
021 105 285	.34mm (.0135)	1700-2000
021 105 287	.36mm (.014)	1700-2000
021 105 291	.24mm (.010)	1700-2000

## RECONDITIONED RODS



Most people don't realize the importance of rods. They are one of the most significant parts in the motor. When a rod is reconditioned, the cap is separated, the bolts taken out and the cap's mating surfaces ground. The rod is then put back together, now having an oval hole. This hole is then machined round again. We've seen many problems when it's not bored correctly. If the bushings are bored crooked, it throws the rod side ways when the cylinder fires. Another problem is when one rod has been reconditioned once and another several times. One rod may be longer than the others and this will affect the compression ratio. You might have a compression ratio of 9.1 in one cylinder and 7.7 in the other three. The result is an unbalanced engine causing major detonation in one cylinder. The rods we carry are checked for straightness, and weighed to within 10 grams and matched for length to .005. All rods are sold in sets on an exchange basis.

111 105 401RC		36hp
111 105 401CO	Core	36hp
113 105 401ARC		40 hp
113 105 401ACO	Core	40 hp
311 105 401BRC		1500-1600
311 105 401BCO	Core	1500-1600

## ROD BEARINGS



These are the shells that go in the rods and ride on the crank. To determine the size you need, mic the crank on the rod journal; 2.165 to 2.164 is standard. 2.155 to 2.154 is .010 over. 2.145 to 2.144 is .020 over. 2.135 to 2.134 is .030 over. We don't like to run a crank over .030 undersize as the bearings are too thick. Note: When installing the bearings, try not to touch the surface the crank rides on with your fingers until you're spreading oil on it. Grab it by the edges and push it into place. Never oil the surface that sits in the rod, oil goes on the crank side. We use 30W oil, not grease. Make sure the two locating tabs face each other when installing them and that the tang on the rod beam is up for that cylinder. The total torque is 28 ft. lbs but starting at 15 ft. lbs. When done torquing the rods make sure they spin freely. If they don't, take the rod off and find out what's restricting it. IT WON'T WEAR IN; IT WEARS OUT.

111 105 701A	Standard	36hp
113 105 701	Standard	40 hp-1600
113 105 707	.010	40 hp-1600
113 105 713	.020	40 hp-1600
113 105 719	.030	40 hp-1600
021 105 701ABR	Standard	1700-1800
021 105 707ABR	.010	1700-1800
021 105 713ABR	.020	1700-1800
021 105 719ABR	.030	1700-1800
039 105 701BR	Standard	2000
039 105 707BR	.010	2000
039 105 713BR	.020	2000

## CAMSHAFTS



We've had no luck with regrinds, therefore we sell only new camshafts. German cams were the best, but are no longer available. These are the best cams, as a stock grind goes, that we can find. If you want a little better and longer lasting cam look in the aftermarket section under Pauter Cam.

113 109 021DBR	0 Gear, flat style	40hp-1600
113 109 019DBR	-1 Gear, flat style	40hp-1600
113 109 022DBR	+1 Gear, flat style	40hp-1600

## PUSH RODS



These rods link the cam to the valves. If you have used ones make sure that they are straight by rolling them on a flat surface. Inspect the ends and blow air through the tip making sure it comes out the other side. We do not recommend using steel push rods on a daily driver, because the growth rate is different and requires you to adjust the valves more often. Note: When installing push rods, squirt some oil on the ends and down the hole.

113 109 301D	Push Rod	40 hp
311 109 301A	Push Rod	1500-1600
021 109 317C	With hydraulic lifters	2000

## CAM FOLLOWERS (STOCK LIFTERS)



Cam followers ride against the cam. We prefer the Mahle or Scat brand for the upright engines. Personally we've had bad luck with regrinds. If you are going to use your old ones, clean the head surfaces and put two together with the faces touching. Hold them up to a light to see if you can see light between them increasing from the middle out. In other words the heads should be convex not concave or flat. Note: When installing, make sure your cam has .060 to .100" clearance from the top of the cam lobe to the cam follower. Install using cam assembly lube.

113 109 309C	Stock	40 hp-1600
021 109 309EG	With solid lifters	1700-2000
022 109 309	With hydraulic lifters	2000

## PUSH ROD TUBES



These tubes go from the case to the heads to house the push rods. They also return the oil from the heads to the case. We highly recommend that you replace these whenever you pull the heads off a 40 hp-1600 engine. The stock tubes have a crush built into each end. If you try to stretch the old ones, they will go back to where they were crushed as soon as they heat up and more than likely leak.

Note: You should be careful putting the seals on; it's real easy to cut your fingers. On buses 1972 on, you do not need to replace the old tubes and they can be installed after the heads are on.

113 109 335	Push Rod Tube	40 hp
311 109 335	Push Rod Tube	1500-1600
021 109 335C	Push Rod Tube	1700-2000
025 109 335	Push Rod Tube	1.9 waterboxer
025 109 337	Spring loaded	1.9 waterboxer

## PUSH ROD TUBE SEALS



These are the seals that go around the push rod tubes. On all buses up to 1971 the heads have to come off to replace the seals and we highly recommend you replace the tubes at this time as well. If you don't, they will usually leak even though you have new seals. On buses 1972 and on, the seals can be replaced by pulling the rockers off and the wire clip

that holds the tubes in place. Use a pair of pliers to wiggle the tubes out. Wipe some white grease on the new seals and install.

113 109 345A	Inner or outer	40 hp-1600
021 109 345A	Inner	1700-2000
021 109 349B	Outer	1700-2000
070 109 345	Inner	1.9 waterboxer

## VALVE ADJUSTING SCREWS AND NUTS



This screw rides against your valve, opening and closing it. These screws do wear out, so check the end that rides on the valve. If you see any pits in the adjusting screw, you will need to replace it. We're not big fans of the stock adjusting screws and feel you are much better off with swivel feet adjusting screws. You'll find SWIVEL FEET ADJUSTERS in the aftermarket section. Also take a look at the jam nuts. If the corners of the nut are rounded off, replace them; it'll save your knuckles. When you tighten the nuts, remember that snug is fine; you don't have to gorilla them tight. To adjust your valves; pop the cap off your distributor, turn your motor over by hand until the rotor lines up with the number one wire. You should see a small line on the distributor body and the crank pulley notch should line up with the split in the case. Take off the valve cover on the number 1 - 2 (passenger) side. Adjust number 1 intake and exhaust to .006. If you are not sure on your feel with the gauge, try to slide a .007 gauge in. If the .007 gauge fits, you're too loose. With number one done, rotate the motor by hand counterclockwise 180 degrees and adjust number 2 intake and exhaust. Clean your valve cover and install a new gasket. Put that cover back on. Now pop off the 3 - 4 valve cover. Rotate the motor again counterclockwise 180 degrees and adjust number 3. Counterclockwise 180 degrees and do number 4. Put a new gasket in the valve cover and pop it back on. Put your cap back on the distributor and you're done.

043 109 451	8mm screw	36 hp-1700
N111521	8mm nut	36 hp-1700
022 109 451	10mm screw	1800-2000
028 109 453	10mm nut	1800-2000

## INTAKE VALVE



through.

The two inside valves in the head are the intake valves that let the gas into the combustion chamber. These don't normally need to be replaced unless they have been ground too far or too many times. On stainless steel valves, make sure you grind the keepers so that they don't touch each other when they're put in place. Stainless steel valves are soft and if you don't grind the keepers they will eventually pull

113 109 601B	31.5mm	40 hp
113 109 601D	33mm	1300
311 109 601	35.5mm	1500-1600
021 109 601	39.3mm	1700-1800
021 109 601A	37.5mm	2000

## EXHAUST VALVE



eventually pull through.

The two outside valves in the head are the exhaust valves; they let the burned fuel out of the head. We recommend that you replace them when you have a valve job done. Old valves can get brittle due to the heat and break off. On stainless steel valves, make sure you grind the keepers so that they don't touch each other when put in place. Stainless steel valves are soft and if you don't grind the keepers the valves will

113 109 612	30mm	40 hp-1300
113 109 612A	32mm	1500-1600
022 109 612A	34mm	1800
022 109 612D	33mm	1700 & 2000

## VALVE SPRINGS



the race tracks, not the street.

These springs return the valves back to their seats. You can use your old ones, but make sure that you check them with a spring gauge to see if they still have the same tension. Heavy duty springs are recommended for high RPMs and steep cams. Dual springs are for

113 109 623C	Spring	40 hp-1600
021 109 623E	Spring	1700-1800
021 109 623K	With hydraulic lifters	2000
113 109 641B	Valve spring retainer	40 hp-1600
113 109 651A	Valve keeper	40 hp-1600

## OIL PUMPS



The oil pump is the heart of the engine, so it's very important to choose the right one. When ordering a pump you will need to know if your case is a single or dual relief, if you have a dished or a flat cam and if you want a standard or heavy duty pump. Remember that you can only pump so much oil through a certain size hole, so be careful when ordering a heavy duty pump. We feel that any pump with gears larger than 30mm is a waste of money. Note: When replacing a pump make sure you use four new sealing nuts.

311 115 107HD	6mm single relief case, 26 mm	40 hp
311 115 107AHD	8mm single relief case, 26 mm	1500-1600
111 115 107AHD	8mm dual relief case, 26 mm w/flat cam	1600
111 115 107AKS	8mm dual relief case, 30 mm w/ flat cam	1600
111 115 107B	8mm dual relief case, 26 mm w/dish cam	1600
111 115 107BHD	8mm dual relief case, 30 mm w/dish cam	1600
021 115 107AK	High volume replacement pump	1700-2000
111 115 107B	Water boxer	19
111 115 107BHD	Water boxer	19
111 115 111A	6mm gasket case to pump	40 hp
111 115 131A	6mm gasket cover to pump	40 hp
111 115 111B	8mm gasket case to pump	1500-1600
111 115 131B	8mm gasket cover to pump	1500-1600

## OIL PUMP SEALING NUTS



These nuts prevent oil from leaking around the oil pump studs. They should be replaced every time you take the oil pump and/or cover off. Note: The red side of the nut goes towards the cover and washers are not used.

111 115 161	8mm	1500-1600
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## OIL SUMP SCREEN



This screen fits in the sump around the pick up tube. It's more of a rock catcher than anything else, so we recommend an external filter in conjunction with the screen. Used screens are fine as long as they are clean.

111 115 175A	Screen	36hp
113 115 175	Screen	40 hp
311 115 175A	Single relief case	1500-1600
111 115 175B	Dual relief case	1600
021 115 175	Screen	1700-2000

## OIL SUMP PLATE



This is the plate on the bottom of the motor. To install one on a 40 hp-1600, proceed in this order: Gasket against the case, the screen, another gasket, and then the plate. Now put the copper washers on the studs and then the six cap nuts. Be sure to use Gasgacinch on the gaskets and do not overtighten the nuts. We highly recommend you use cap nuts on the studs. One last note: Make sure the drain plug, in the middle, is in tight. On the bottom of a 1700-2000 engine, it is held in by two bolts. Do not over tighten the bolts.

113 115 181A	Sump Plate	40 hp-1600
113 115 193	Drain plug	40 hp-1600
021 101 267A	Sump Plate	1700-2000
N0138152	Ring for 113 115 193	

## DUMP TUBE COLLAR



This rubber collar goes around the dump tube that comes from the generator stand. It keeps the tin from rubbing a hole in the tube. If you have a hole or slice in your tube, fix it. This tube is a vent for the crank case and it's not too big a deal when the engine is running because there's pressure. However, if you have a hole in the tube and are in dirt, when you start the engine, this tube literally sucks, and you will suck dirt into the motor.

111 115 451	Collar	60-71
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## VACUUM CAP PLUGS



This is a rubber plug that is used to plug off vacuum. We use it on the stock doghouse fan shrouds to block off where the hose would go to the charcoal canister. It can also be used to block off where the vacuum line came off the stock dual port intake manifold for the power assist.

111 115 465	12mm	All
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## OIL FILTERS



This is the only thing that prevents dirt from running through the engine. If dirt enters the case it will destroy the engine. This filter should be changed every time you change the oil.

021 115 351A	1700-2000	72-83
070 115 561	1900-2100 w/cooled	83-92



## OIL FILLER CAP AND GASKET



It caps the hole you are aiming at while pouring oil over everything else. Used ones are fine as long as the gasket is good.

111 115 485	Cap	36 hp-1600
111 115 487	Gasket	36 hp-1600
021 115 311	Cap	1700-2000
021 115 487	Gasket	1700-2000
070 115 311	Cap	Water cooled

## OIL FILLER NUT



This is more of a bolt than a nut. It holds the oil filler to the generator stand. It takes a special tool to get the old one out and to get the new one tight. The most common reason to replace one is the old nut gets stripped. Don't forget the gasket goes between the stand and the filler, not between the nut and the filler.

111 115 495	Nut	40 hp-1600
113 115 475	Gasket	40 hp-1600

## DUMP TUBE BOOT



This boot goes on the end of the dump tube. It has a valve or slice in the end allowing oil pressure to vent out but nothing to get in. People don't realize the importance of this little rubber boot. When you are starting the engine the tube will suck air and this boot keeps the dirt out. Note: When installing the boot, dip your finger in oil and smear it on the inside of the boot. Shove it on until the little nipple on the inside finds the hole in the tube, no clamp is needed.

311 115 541	Boot	60-71
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## DIPSTICK



No, this isn't that distant cousin. This is what you use to check the oil. If you're low, add oil. Your stock motor only holds 3 quarts of oil and needs every drop of it. This stick's your friend, so check it regularly.

113 115 611	Dipstick	36 hp-1600
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## OIL COOLER AND SEALS



This stock oil cooler cools the hot oil coming from the engine. We recommend the doghouse style over the earlier one because the hot air exits the cooler and goes outside the engine compartment. The earlier cooler allows hot air to go over the number 3 & 4 cylinders, a very insufficient way of cooling. Note:

When installing the fan shroud over the doghouse cooler, you should wrap a piece of foam over the top of the cooler to insure air from the fan goes through the cooler and not around it. When it comes to oil cooler seals we suggest you give us a call.

111 117 021ERB	Rebuilt, non doghouse style	40 hp-1600 SRC
113 117 021RB	Rebuilt, doghouse style	1600 DRC
113 117 021	New, doghouse style	1600 DRC
021 117 021BRB	Rebuilt	1700-2000
111 117 151	Seal for non doghouse cooler	36 hp-1600 SRC
021 117 151A	Seal doghouse	1600-2000 DRC
111 198 029	Seal (pr) doghouse cooler to SRC	
113 117 303	Oil cooler stand for doghouse cooler	

## DIPSTICK BOOT



This boot joins the dipstick tubes on a 72-79 bus and is a common place for leaks. Note: When installing squirt some oil in it so it slides right on.

021 119 245	1700-2000	72-79
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## COOLING FANS



This is the fan that fits inside the fan shroud of buses thru 1971. If you are running a doghouse shroud then you need the wide fan no matter what year the car is. If you don't know what a doghouse shroud is, give us a call and we will explain it.

113 119 031A	Narrow	-70
113 119 031B	Wide	71

## THROTTLE TUBE TO SHROUD PLUG



On the backside of a stock doghouse shroud, where the throttle tube goes through, you will see an oval hole. This is the plug that seals that hole around the tube. It just pops into place.

211 119 217	Shroud Plug	71
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## TIMING HOLE PLUG



This plugs the hole in the fan shroud that you use when timing your motor.

021 119 233A	Hole Plug	72-83
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## FAN HUB KIT



This is a hub that is keyed onto the generator or alternator to mount the fan. You will need to use generator shims to space the fan out from its backing tin. Place the fan on the hub and hand tighten. Give the fan a spin to make sure it is not bent or hitting the tin. Mount the generator or alternator fan assembly back into the fan shroud. Now put the belt on, shove your screwdriver in the front pulley to lock up the shaft. With a 36mm socket reach around the backside of the fan shroud and torque the nut to 45 ft. lbs.

111 119 270B	For GR11,GR15,AL82	-71
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## CLYINDER HEAD DEFLECTORS



These are also known as the "forget-me-nots". When putting on your barrels, place the deflectors next to the barrels. Before you put the heads on, clip them in place. If you "forget" them, take the heads back off and put them on. They are important for cooling, as they deflect air around the bottom of the barrels.

311 119 317A	For 10mm head studs	1300-1600
113 119 317	For 8mm head studs	1600

## FRONT CYLINDER HEAD DEFLECTOR TIN



These are the short pieces that fit under the big cylinder tin towards the crank pulley. They hold the large cylinder tins in place as well as deflecting air down around the number 2 and 4 cylinders.

131 119 357	Left	1500-1600
131 119 358	Right	1500-1600

## PREHEAT ELBOW



This elbow helps reduce icing issues for those of you living in cold climates. You should make sure this elbow is on your motor. It routes warm air from under your cylinders up to the stock air cleaner.

113 119 519G	50mm	68-74
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## PRE-HEAT HOSE GROMMET



In the stock front pulley tin, there is a hole for the 1" hose coming down from the stock air cleaner. This hose sends heated air back up to the air cleaner. This is the grommet that goes around that hose to keep it from getting cut by the tin.

111 119 571	For 1" hose	61-67
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## FRESH AIR HOSE BASE SEAL



These are the seals that go over the stock H pipes, where they come through the front pulley tin. They help to seal the engine compartment from hot air and dirt.

113 119 585	Pair	63-67
113 119 585B	Pair	68-71

## HEAT RISER INSULATION KIT



This is the insulation that fits into the little shields around where the heat risers come through the engine tin. To install, you just slide them into the little tins.

113 119 597	Kit	40hp-1600
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## OVERFLOW TANK



This tank is part of the cooling system on later buses.

025 121 403	Water cooled	83-84
025 121 403A	Water cooled	84-85
025 121 403B	Water cooled	86-91

## FUEL PUMPS



These stock pumps pump fuel into the carburetor. We prefer the 025B pump over the rest of the pumps however they are no longer available. The next best pump is the 025D, because it seems to be the most reliable. We don't really like electric pumps, because if you get in an accident and there is a fire, the pump continues to feed it. Note: Before installation, put a dab of grease on the foot that the rod rides on.

211 127 025	With threaded intake	40 hp
113 127 025BCD	Universal	40 hp-1600
113 127 025D	Round top	1600
113 127 025G	Use with alternator	1600
021 127 025A	German Only	1700-1800
61316	Electric (fuel injection)	75-85
113 127 311	Gasket lower	40 hp-1600
113 127 313	Gasket upper	40 hp-1600

## FUEL PUMP FLANGE



The fuel pump sits on this little stand and it's also the guide for the push rod. If you are going to use an old one, make sure it's not cracked and that the end is not broken off. Note: Make sure it goes into the case easily. If it doesn't, sand the stem so that it slides easily into place. Do not over tighten it or you will crack it.

113 127 303	Fuel Pump Flange	40 hp-1600
021 127 303A	Fuel Pump Flange	1700-1800

## FUEL PUMP PUSH RODS



This rod drives the fuel pump. Used ones are fine; very rarely do they go bad. Note: The point goes down on the upright motors.

113 127 307	With generator	40 hp-1600
113 127 307A	Use with 113 127 025G	1600
021 127 307A	Push Rod	1700-1800

## FUEL LINE



This metal line goes from the pump around the fan shroud to the flex line that comes from the gas tank. It has two 90 degree bends where it comes out of the rear tin. Its function is to keep the fuel away from the heater box. Most people don't replace this but should. We see a lot of engine fires because of bad metal lines or people running flex line all the way to the pump. Note: Make sure you have a grommet in the rear tin so that the tin doesn't rub a hole in the line.

111 127 511A	Metal line to carb	36hp
111 127 521A	Metal line to pump	36hp
113 127 521A	Metal line to pump	1500-1600
311 971 913	Grommet	40 hp-1600

## CARBURETOR



This is what delivers gas and air to the engine. It would take a book to explain all of the symptoms of a bad carb. A simple check is to use a mirror and a flashlight to see if fuel is dripping onto the butterfly while the engine is idling. If it's dripping then there is a good chance it's bad. Another check is with the motor off, grab the throttle arm down where the butterfly shaft is and see if it moves back and forth. Again if it moves, the shaft is worn out and you should think about getting a new one.

113 129 027H	31 Pict w/idle cutoff-CA smog legal
113 129 027EMP	31 Pict w/idle cutoff, made in China
113 129 031K	34 Pict 3
113 129 031EMP	34 Pict 3, made in China
N137761	Carb base gasket 28-30 Pict
113 129 707A	Carb base gasket 34 Pict

## PAPER AIR FILTER



This is a replacement paper element for the stock air cleaner.

021 129 620	Air filter	75-85
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## AIR CLEANER SLEEVE



This rubber hose goes from the air cleaner to the carburetor. If yours has a hole or rip in it, make sure you replace it or you will be sucking dirt.

211 129 627	Sleeve	64-67
211 129 615E	Sleeve	68-71

## INTAKE VACUUM RUBBER FITTINGS

We usually find these fittings all taped up or glued. If yours are cracked, then replace them. It will make the motor run better and cooler.



022 129 637	Elbow for auxiliary pipe	1700
021 129 637C	Elbow	1700
021 129 637D	F shape	1700
021 129 637F	Elbow	1700
021 129 639	Elbow	1700

## INTAKE MANIFOLD GASKETS



These are the gaskets used between the intake manifold and the cylinder head. We prefer using paper gaskets on the upright dual port motors. If for any reason you take off the intake manifold, you will need to replace these gaskets. Hint: If you have a single port engine, tighten the heat risers before you tighten the intake at the ports.

N138211	Single port, copper	36hp
N138231	Single port, copper	40hp
311 129 707	Single port, copper	1500-1600
113 129 717	Dual port, paper	1600
021 129 707D	Dual port, metal	1700-2000

## CARBURETOR ADAPTER



This adapter is used when you want to put a 30PICT carb on a dual port manifold. It bolts to the bottom of your carb.

113 129 034KIT	Adapter	71
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## CARBURETOR PARTS

Here are some of the replacement parts for your stock carburetor.



113 129 191G	12v choke	30PICT-on
113 129 323B	Acc nozzel	28PIC-30PICT
113 129 323C	Acc nozzel	34PICT3
113 129 391	Float	30PICT2-34PICT3
111 129 405C	Main jet #115	28PIC-on
111 129 405B	Main jet #117.5	28PIC-on
111 129 405D	Main jet #120	28PIC-on
111 129 405F	Main jet #122.5	28PIC-on
111 129 405G	Main jet #125	28PIC-on
111 129 405H	Main jet #127.5	28PIC-on
111 129 405M	Main jet #130	28PIC-on
111 129 405N	Main jet #132.5	28PIC-on
111 129 405O	Main jet #135	28PIC-on
111 129 405P	Main jet #137.5	28PIC-on
111 129 405Q	Main jet #140	28PIC-on
111 129 405R	Main jet #145	28PIC-on
111 129 405S	Main jet #150	28PIC-on
111 129 405T	Main jet #155	28PIC-on
111 129 405U	Main jet #160	28PIC-on
111 129 405V	Main jet #165	28PIC-on
111 129 405W	Main jet #170	28PIC-on
049 129 412C	Idle cut off	34PICT3
113 129 415B	Idle jet #45	28PIC-34PICT3
113 129 415C	Idle jet #50	28PIC-34PICT3
113 129 415D	Idle jet #55	28PIC-34PICT3
113 129 415E	Idle jet #60	28PIC-34PICT3
113 129 415F	Idle jet #65	28PIC-34PICT3
N137761	Carb base gasket	28PIC-30PICT3
113 129 707A	Base gasket	34PICT3
113 129 881A	Return spring	30PICT1-on

## INTAKE MANIFOLD BOOTS

These two boots connect the intake manifold with the end casting on a stock dual port 1600cc engine. It's a good idea to replace them if you have the manifold apart. These are probably the number one source of intake leaks on dual port motors. We have tried the split boots and aren't too happy with them because they tend to leak. It's worth the effort to put the stock boots on. Note: Squirt some oil on the inside of the boots for easier installation.



113 129 729BS	Silicone boot	1600
113 129 730	Small clamp	1600
113 129 731	Large clamp	1600
113 198 729BS	Boot w/clamps	1600
039 133 241	Intake manifold hose	75-83

## THROTTLE CABLE TUBES

This is the tube that goes through the fan shroud, that the accelerator cable threads through. We usually place a 10mm flat washer on it, then stick it through the shroud. On the backside of the shroud, we use a fuel line hose clamp on the tube to keep it from pulling back through the shroud.



211 129 893	For carb w/o spring	28PIC
113 129 901	Spring for 211 129 893	28PIC
113 129 905	Bell for 211 129 893	28PIC
113 129 909	Clip for 211 129 893	28PIC
043 129 893	For carbs w/spring	28PICT1-34PICT3

## THROTTLE CABLE LOCK

This barrel lock attaches the cable to the carb. They really don't go bad, but they've been known to fly away. The same barrel lock is used on the heater cables.



111 129 921	Cable Lock	All
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## EGR FILTERS



This is a smog device. Because they're not cheap, we suggest you wait until a smog station says you need one before buying one.

021 131 617F	Cal Only Filter	75-78 1/2
021 131 617G	Filter	78 1/2-79
039 131 617	Non-Cal Filter	79-83
071 131 617A	Cal Only Filter	79-83
043 131 599A	Gasket for 039 & 071	79-83

## FUEL INJECTION SEALS



These o-rings should be replaced whenever you replace a fuel injector or if yours are getting old and cracked. Four small and four large seals are required per motor.

311 133 261A	Small o-ring	All FI
311 133 263	Large o-ring	All FI

## CLUTCH PRESSURE PLATES



The clutch cover is also known as a pressure plate. A lot of people replace the clutch cover when it's not really necessary. To check the clutch cover look at the surface where the disc rides, make sure that it's not all chewed up. Now place the clutch cover on the floor and step on it (bounce on it) to see if it still has tension.

Note: When putting the clutch cover on, use a clutch alignment tool in the disc and start the bolts by hand. Use wafer washers under the bolts. Tighten the bolts in a star pattern until the cover sits flat. Torque the bolts to 18 ft. lbs. Any more and they will break; any less and they will come loose.

211 141 025D	180mm	-62
311 141 025E	200mm w/collar	66-70
311 141 025EHD	200mm w/collar HD	66-70
311 141 025C	200mm w/o collar	71
311 141 025CHD	200 mm w/o collar HD	71
022 141 025G	210mm	72-73
022 141 025A	215mm	74-75
029 141 025B	228mm	76-79,82
068 141 025D	215mm	Diesel Vanagon

## CLUTCH DISCS



This disc transfers the power from the motor to the transmission. To check an old one use a 7mm wrench and try to put the open end over the thickness of the disc. If the wrench goes on you should think about replacing the disc. There are basically two types of discs, ridged and one with springs. If you are putting

the disc in a bus, we suggest using the one with springs. The spring type has a little give before it engages, reducing the shock on the transmission. The ridged discs are good for dirt cars or someone who wants to get off the line faster.

111 141 031E	180mm solid	-62
111 141 031F	180mm w/springs	-62
311 141 031B	200mm solid	63-71
311 141 031D	200mm w/springs	63-71
211 141 031G	210mm	72-73
211 141 031L	215mm	74-75
029 141 031A	228mm	76-82
068 141 033J	215mm	Diesel Vanagon

## CLUTCH RELEASE BEARINGS



Also known as a throw-out bearing, this bearing's function is to disengage the clutch. When checking an old one, just spin it to see if it sounds dry. We suggest you use a German bearing as we have seen problems with other brands.

111 141 165A	Use w/collar cover	-70
113 141 165B	Use w/o collar cover	71-92
113 141 181B	Guide sleeve for 113 141 165B	

## CLUTCH RELEASE BEARING CLIPS



These clips hold the throw-out bearing to the arm. We prefer the spring loaded type over the original ones. Note: Put some grease on the pivots of the throw-out bearing where it rides in the arm.

111 141 177AS	Clip	-70
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## CLUTCH ARMS



This shaft holds the throw-out bearing in place. Used ones are fine as long as the arms aren't bent or broken. When removing an old shaft, take out the 11mm bolt that sets the arm bushing into the trans case. Next take off the throw-out bearing and the clutch cable nut. Push the shaft toward the cable arm, pushing out the bushing. Remove the cable arm, spring, bell and bushing. At this point, the

shaft should pull out from the inside. Note: When putting the shaft back in, grease the shaft where the bushing rides. Put the inner clip on the shaft, then install the shaft into the case. Slide the bushing from the outside over the shaft making sure you are lining up the set screw hole. Put in the set screw and then the spring bell. Put the spring over the bell, then put it over the arm. Do not put the spring over the arm until you have the outer clip on. Take a large phillips screwdriver and wrap the spring around the arm, pull the screwdriver towards you, prying the hook of the spring around the arm.

113 141 701C	Clutch Arm	61-67
002 141 701	Clutch Arm	68-70
002 141 701A	Clutch Arm	71-75
091 141 701	Clutch Arm	76-92

## CLUTCH RETURN SPRING



This spring returns the clutch arm. If yours is broken the throw-out bearing will wear out faster. Note: To install this spring first take the clutch cable out of the arm and remove the clip that holds the arm to the shaft. Remove the arm and broken spring. Install the new spring leaving it off the arm. Once the arm is back on with the clip, use a large phillips screwdriver to pry the hook end of the spring back onto the arm.

113 141 723	Return Spring	-75
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## ENGINE GASKET SET



This kit contains most of the seals and gaskets necessary to rebuild an engine. You'll also need to purchase a flywheel seal. If your case is a dual relief upright motor, you'll also need another copper o-ring for the second relief plug and two more of the oil cooler seals. Note: We use a sealer called Gasegacinch on all our gaskets.

111 198 003	Gasket Set	36 hp
111 198 005	Gasket Set	40 hp
111 198 007AF	Gasket Set	1300-1600
111 198 007AFG	German Gasket Set	1300-1600
021 198 009B	Gasket Set	1700
029 198 009	Gasket Set	1800-2000
025 198 009A	Gasket Set	1.9 waterboxer
071 198 009	Gasket Set	2000 Air cooled
N138171	Oil pressure relief gasket	

## OIL SCREEN GASKET SET



These gaskets are used on the sump plates of the engine. Note: We use a sealer called Gasegacinch on these gaskets. If your bus is up to 1971 then you should have cap nuts on the studs and don't over tighten them.

113 198 031	Gasket Set	40 hp-1600
021 198 031	Gasket Set	1700-2000

## CLUTCH ARM BUSHING KIT



This kit contains a bushing, a clutch return spring and the retaining clips to install the throw-out bearing shaft in the trans. The engine has to be pulled out in order to put the bushing on. Start by removing the throw-out bearing. Now take the clip off the cable arm and remove the arm. Go to the backside of the bellhousing and remove the 11mm bolt that sets the bushing. Push the shaft from the inside out towards the drivers side; this will push the bushing out. Now for the fun part, grease up the shaft where the bushing rides. Install the inner clip on the shaft, then install the shaft without the bushing. Slide the new bushing from the outside over the shaft, making sure that the indent hole lines up with the hole on the backside of the trans. Install the alignment bolt in the bushing and then replace your throw-out bearing. Now replace the clutch return spring, the bell, and the clutch cable arm. Put on the clip. Don't try to put the spring over the arm until you have this outer clip on. Take a phillips screwdriver and wrap it around the arm; hook the spring and pry it backward. This will install the spring back on the arm without you loosing your sanity or a finger.

113 198 026	Bushing Kit	60-67
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## PISTON AND CYLINDER KITS



These come in sets of four pistons with rings, four cylinders, four wrist pins and eight wrist pin keepers. We like the Cima Mahle brand for the 36 hp-1600 uprights and the K&S brand for the 1700-2000 pancake engines. We do not like the wire type of wrist pin keepers and suggest you buy a set of tru-arc type keepers. When you get piston and cylinders, the pistons need to be taken out of the cylinders and have the cosmoline cleaned off and the ring gaps set. Note: The arrows on the the pistons go towards the flywheel. I also suggest you flip ahead and read about barrel shims if you want your motor to last.

111 198 057	77mm	36hp
111 198 057A	77mm	40hp
311 198 069F	85.5mm	1600
021 198 075B	90mm	1700
022 198 075A	93mm	1800
029 198 075	94mm	2000

## PISTON RING SETS



Rings on the pistons are there to eliminate "blow-by". To see if your cylinders or rings are worn out take a top ring and place it into the cylinder about an inch down from the top. Using a piston with no rings, push the ring down making sure it is sitting flat in the cylinder. When the ring is in the cylinder, use a feeler gauge to measure the ring gap. If it is over .030, either the ring or the cylinder is worn out. If you feel a ridge on the top of the cylinder, then it's a bad cylinder and time for a new set of pistons and cylinders. We prefer using cast rings instead of chrome rings. Chrome rings never seem to seat; this causes a lot of blow-by. Note: Use ring spreader pliers to put the rings on. When putting the cylinders on, make sure none of the ring gaps are lined up.

111 198 157A	77mm, 2.5x2.5x4mm	40 hp
111 198 157B	77mm, 2x2x4mm	1300
315 198 163A	83mm, 2x2x4mm	1500
311 198 169A	85.5mm, 2x2x4	1600
021 198 175	90mm	1700
021 198 175A	93mm	1800
029 198 175	94mm	2000

## MAIN BEARING SETS



The crankshaft rides in the main bearings. We prefer the K&S brand with the oil grooves on the inside of the center main bearing, thus it suspends the center main on the crank in oil. The center main bearing has to feed two rods and is saddled in the case, making it the only bearing that is not supported like the others. As of this writing K&S bearings are hard to locate. When we can't find K&S, we use Mahle brand bearings. When ordering bearings, we need to know the crank size, the line bore size and the thrust cut of the rear main. Crank size goes as follows for 40 hp-1600.

2.165 to 2.164 is std  
2.155 to 2.154 is .010  
2.145 to 2.144 is .020  
2.135 to 2.134 is .030

The case size goes as follows (O.D. of big bearing)

2.560 is std  
2.580 is .020  
2.600 is .040  
2.620 is .060  
2.640 is .080

Thrust cut is the measurement of the saddle where the rear main rests. This is very important. Your rear main has to fit tight on the sides or you will soon have problems. Sometimes it is necessary to cut a bearing to fit the case. Sizes are as follows:

.866 is std  
.826 is +1  
.786 is +2

Note: Scribe a line on the outside of the case in line with the dowel pin on the rear main bearing. Also scribe a line on the outside of the rear main bearing. When you install the crank, line up your marks. When putting the main bearings on the crank make sure the dowel pin holes face the flywheel. Use oil on the I.D. of the bearings and squirt some on the journals of the crank before putting them on. Sizes go in order of crank, case, thrust.

111 198 451	Std-std-std	36 hp
111 198 461	Std-std-std	40 hp-1600
111 198 463	.010-std-std	40 hp-1600
111 198 465	.020-std-std	40 hp-1600
111 198 467	.030-std-std	40 hp-1600
111 198 471	Std-.020-std	40 hp-1600
111 198 4710S	Std-.020+1	40 hp-1600
111 198 473	.010-.020-std	40 hp-1600
111 198 4730S	.010-.020+1	40 hp-1600
111 198 4730S2	.010-.020+2	40 hp-1600
111 198 475	.020-.020-std	40 hp-1600
111 198 4750S	.020-.020+1	40 hp-1600
111 198 477	.030-.020-std	40 hp-1600
111 198 4770S	.030-.020+1	40 hp-1600
111 198 4770S2	.030-.020+2	40 hp-1600
111 198 481	Std-.040-std	40 hp-1600
111 198 4810S	Std-.040+1	40 hp-1600
111 198 4810S2	Std-.040+2	40 hp-1600
111 198 483	.010-.040-std	40 hp-1600
111 198 4830S	.010-.040+1	40 hp-1600
111 198 4830S2	.010-.040+2	40 hp-1600
111 198 485	.020-.040-std	40 hp-1600
111 198 4850S	.020-.040+1	40 hp-1600

111 198 4850S2	.020-.040+2	40 hp-1600
111 198 487	.030-.040-std	40 hp-1600
111 198 4870S	.030-.040+1	40 hp-1600
111 198 4870S2	.030-.040+2	40 hp-1600
111 198 4910S	Std-.060+1	40 hp-1600
111 198 4910S2	Std-.060+2	40 hp-1600
111 198 4930S	.010-.060+2	40 hp-1600
111 198 4950S	.020-.060+2	40 hp-1600
111 198 4970S	.030-.060+2	40 hp-1600
111 198 5010S	Std-.080+2	40 hp-1600
111 198 5030S	.010-.080+2	40 hp-1600
111 198 5050S	.020-.080+2	40 hp-1600
021 198 481A	Std-std-std	1700-2000
021 198 483A	.010-std-std	1700-2000
021 198 485A	.020-std-std	1700-2000
021 198 487A	.030-std-std	1700-2000
025 198 461	Std-std-std	1.9 waterboxer
056 198 451A	Std-std-std	Diesel Vanagon
056 198 453A	.010-std-std	Diesel Vanagon
056 198 455A	.020-std-std	Diesel Vanagon
056 198 457A	.030-std-std	Diesel Vanagon

## CAM BEARINGS



The cam rides in these bearings. We have tried German and Brazilian brands and have had good luck with both. If you are running a 1776cc or bigger engine, you should run the double thrust bearings. Note: The bearings are installed with the widest one towards the pulley and the narrowest one toward the flywheel. Use oil on the bearing before installing the cam.

111 198 541GR	German	1200-1600
111 198 541BR	Brazilian	1200-1600
111 198 541HD	Double thrust	1200-1600
021 198 541	Brazilian	1700-2000
111 198 541HD	Double thrust	1.9 waterboxer

## FUEL PUMP REPAIR KITS



This kit allows you to rebuild your fuel pump. If you live in California and have the wonderful gas that is mandated by the state, then you need to start your car at least once a month or this wonderful gas will eat anything made out of rubber, that includes the fuel pump diaphragm and any rubber hoses.

111 198 551	36hp pump	36 hp
111 198 555	For square top (B) pump	40 hp-1600

## CARBURETOR REPAIR KITS



This kit comes with the gaskets, the needle and seat, and accelerator pump diaphragm for the carb.

111 198 569A	28 PIC	36hp
113 198 575URP	28 PICT-34 PICT3	40 hp-1600
043 198 575	34 PICT4	1600
021 198 573	Left or right	1700-1800

## ENGINE BOLTS



These are the two upper bolts that hold the engine in. There are two types, the half moon style and the hex head style. You can use the half moon style or the hex head on the starter side of all buses. Originally the clutch arm side used a half moon style on buses up to 1970 and a regular hex head style on 1971 on buses; but only the hex head style is available now.

111 199 101	Half moon, Starter side	63-75
N105001	Hex head, Starter side	-75
N104701	Hex head, Clutch arm side	-75

## ENGINE CASE NUT INSERT



This nut came on all dual relief cases. This is because with a doghouse cooler it is near impossible to get a nut off or on once the engine is in. If you're putting a dual relief case on a transmission that took a single relief case, make sure you grind off the locking boss for the bolt on the clutch arm side before you put the motor in. Be careful not to crack the case when installing. Rig up a pipe that has a notch to match the notch on the flywheel side of the case. Draw the nut into the case with a bolt.

111 199 102	Dual relief case	71
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## ENGINE MOUNTS



These mount on the crossbar of 68 and later buses. Used ones are fine as long as they are not broken.

021 199 231C	Engine to crossbar	72-79
070 199 231AGR	Outer (air cooled)	Vanagon
070 199 231GR	Inner (air cooled)	Vanagon
211 199 231AGR	Bar to body	68-71
211 199 231CGR	Bar to body	72-79

## FUEL TANK



This is a 10 gallon tank. To replace the gas tank in a bus, you will have take the motor out. In a truck you will find the tank located in the rear floor behind some of the sheet metal firewall. We recommend you replace the rubber collar because it keeps the neck from vibrating and cracking. Note: Disconnect the battery when replacing the tank.

211 201 055B	Fuel Tank	55-67
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## FUEL FILLER ELBOW



This is part of the filler neck. If yours is ripped, you will leak gas. Not a good thing!

211 201 119	Elbow	74-79
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## FUEL TANK COLLAR



This collar goes around the gas tank neck on buses. It is very important, as it keeps the neck from vibrating and cracking. The tank needs to be removed in order to install the collar. Note: Put some dish soap on the neck of the tank. This will help when pressing it into the new collar.

211 201 255	Collar	55-67
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## FUEL FILTER



This filter goes in line on the fuel line, keeping dirt or rust out of the carburetor. The non fuel injection filter will fit either 5mm line or 7mm line.

803 201 511E	Inline	-74
71013	Fuel injection	75-80
71013	Fuel injection, non CAL	81-87
71016	Fuel injection, non CAL	88-89
71028	Fuel injection, CAL only	81-92

## FUEL CAPS



The most common reason for replacing a cap is forgetting to put it back on at the gas station. Rags only work in Baja Mexico.

211 201 551GR	Fuel Cap	55-67
343 201 551	Fuel Cap	68-73
211 201 551R	Fuel Cap	74-79
251 201 551C	Locking Fuel Cap	80-85
251 201 551J	Locking, water cooled	86-92

## FUEL TAPS



This pipe comes out of the bottom of your gas tank. If you look at it, you'll see it actually sticks up into the tank. It's designed this way to prevent gas from being drawn off the bottom of the tank and to keep rust or rocks from plugging the pipe. Note: While you have the tap off, check the screen.

If you don't have a screen, it's a good idea to buy one.

211 209 021D	W/reservoir	55-61
131 298 221	Fuel Tap	62-79

## FUEL TANK SCREEN



This tubelike screen is located in the bottom of the gas tank. It filters out materials that could clog your fuel pump or carburetor. On the bottom of the screen is a crush gasket for the fuel tap. We highly recommend you use this filter to keep your lines free of rocks and rust. If you already have the tank out, it's a good idea to check this screen.

111 209 147A	Fuel Tank Screen	58-79
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## MUFFLERS



This is the exhaust silencer. If you want a stock muffler, we prefer the German made ones. They fit better and last longer. Brazilian mufflers can't compare in quality, but they're available and are cheaper. Note: Once you have installed your muffler, drive the car for a day and re-tighten the nuts, bolts and clamps, as they will loosen up.

211 251 051B	36hp	-58
211 251 053C	40hp non fresh air heater NOS	60-62
211 251 053J	40hp fresh air heater NOS	63-64
211 251 051E	1500-1600	65-71
071 251 053F	W/egr; right exit	72-74
071 251 053C	Muffler	75-83
025 251 053E	Water cooled	83-
068 251 053D	Muffler	Diesel Vanagon

## MUFFLER CONNECTING PIPES



These are some of the pipes that connect the exhaust system to the muffler.

025 251 147D	Cross over pipe	83-85
025 251 171G	Front pipe	83-85
025 251 172G	Rear pipe	83-85

## DAMPER PIPE



The damper pipe is a form of muffler that fits on the exit port of the stock main muffler. It doesn't come with the main muffler and needs to be purchased separately. If you are replacing the main muffler, it's a good idea to get one of these at the same time.

147 251 157		60-71
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## TAIL PIPES



This pipe goes on the end of the damper pipe. It's main function is to route the exhaust out the back. It's also sold separately from the main muffler and damper pipe.

211 251 237B	40 hp-1600	-71
021 251 171P	Exit Left	72-74
021 251 185F	1700-2000	72-79
071 251 185A	2000 or diesel	80-83
021 251 185E	Water cooled	83-

## DAMPER PIPE BRACKET



This bracket holds the damper pipe to the main muffler on a stock muffler.

211 251 301A Bracket -71

## HEATER BOXES



These are your source of heat. Used ones are fine, as long as the tin of the heater box is somewhat tight around the exhaust pipe, where it goes through the heater box. If you are getting exhaust fumes in the bus (62-71), it's not normally the heater box; it's usually the clamp where the muffler joins the exhaust pipe coming out of the box. We highly recommend you flange this connection. Flanging the exhaust gets rid of the stock clamp and prevents leaks. The only drawback here is it is almost impossible to flange a stock muffler; therefore a header system is needed. Note: When you have the heater boxes installed and the cables hooked up, adjust the controls so that the heater is all the way on. Crawl back under the bus and push on the control levers, making sure the boxes are open all the way. If they are not, readjust the barrel bolt on the cables so that they are opened. If you make sure all the connections, where the heat travels from fan shroud all the way up to the body, are air tight; the heater will work well. That is, as well as, it can without water.

043 255 105F	Left	63-71
043 255 106F	Right	63-71
021 256 091M	Left	72-74
021 256 092M	Right	72-74
021 256 091T	Left	75-78
021 256 092T	Right	75-78
071 256 091A	Left, non Cal	80-83
071 256 092B	Right	80-83

## H PIPE



This short pipe connects the heater hose from the fan shroud to the preheat air box on the stock muffler. Note: The short side goes into the air box, the long side takes the hose.

113 255 165 H Pipe 63-71

## HEATER HOSES



The heater hose goes from the fan shroud to the heater boxes. It is sold in a 3 foot length and will need to be cut to length on buses up to 1971. On 72-79 buses it comes cut to length.

028 129 087A	Black, paper, 50mm	63-71
113 255 292AAL	Silver, 50mm	63-71
211 255 359	Pre heat, 25mm	-67
211 261 235A	Left	72-79
211 261 236	Right	72-79

## LARGE BAND CLAMP



This clamp connects the pre-heat air box to the heater box. Note: If you can't get a good seal, use two clamps with a piece of aluminum can under the clamps.

113 255 341A 63-71

## REPLACEMENT HEATER TUBE



This tube runs between the main frames in the middle of your bus. It's thicker than the stock tube and will last much longer. Your old tube needs to be cut out and then this tube will slide in.

211 255 785AWG Heater Tube 55-79

## HEATER CONTROL BOXES



The control boxes on 72-79 buses let heat into the car. They are sold separately from the main heater boxes. Note: Cable adjustment is explained under HEATER BOXES.

021 256 205K	Left	72-79
021 256 206K	Right	72-79

## MUFFLER INSTALLATION KITS



These kits include the gaskets and hardware to install a stock muffler.

111 298 003	Muffler kit, 36hp	50-59
111 298 007	Muffler kit, 40hp	60-62
111 298 009A	Muffler kit	63-67
211 298 009A	Muffler kit	68-71
411 298 009	Fits 021 251 101H & 101K	72-74
021 298 001	Fits 021 251 053B & 053D	72-74
023 298 051	Muffler clamp kit	75-79
111 298 051GR	Donut clamp kit	-67
211 298 055	Tail pipe clamp kit	60-71
021 298 051A	Tail pipe mounting kit	72-92
111 251 261B	Gasket head to muffler	-71
111 251 263A	Heat riser gasket	36hp
113 251 263	Heat riser gasket w/large hole	40 hp-1600
113 251 265	Heat riser gasket w/small hole	40 hp-1600
021 251 261	Gasket heater box to muffler	72-74
021 256 251A	Gasket head to manifold	72-74
025 251 509A	Gasket for cat. converter	83-92
029 256 251A	Gasket head to manifold left	79-83
029 256 252A	Gasket head to manifold right	79-83
070 251 235	Gasket muffler to heater box	75-79
043 251 509	Gasket for cat. converter	75-83
443 253 115B	Gasket manifold to pipe	76-84
021 251 235	Gasket tail pipe	72-92
N90131602	Exhaust gasket water boxer for 111 298 003	

## HEATER CABLE FASTENER KIT



This kit contains a barrel bolt and bracket that hook to the control levers. Note: If you are buying heater lever kits, they are included.

111 298 101A Fastener Kit -79

## HEATER BOX LEVER KIT



The control lever works the flaps in the heater boxes. The heater cable hooks to them.

043 298 147A	Left	63-67
043 298 148A	Right	63-67

## STARTER BUSHINGS



This is the bushing between the bell housing of the transmission and the starter. If you have the starter motor out it's a good time to check the bushing. Note: When installing a starter make sure you grease the bushing to prolong its life.

111 301 155	6v	-66
113 301 155	12v	67-

## FINAL DRIVE SEALS



These are the seals that go around the final drive on an IRS transmission. To get the inner one out use a screwdriver to poke through the seal and pry it out.

002 301 189C	Final drive seal inner	68-79
002 517 289A	Final drive seal outer	68-79

## NOSE CONE



This is the front of the transmission that houses the shift lever. Used ones are fine as long as the bushings are good and they're not cracked. Note: Use a new gasket with Gascacinch for a sealer. Don't over tighten the 11mm nuts.

211 301 205H	Syncro trans	62-67
211 301 215	Gasket nose cone	62-67

## SELECTOR ROD SHIFT BALL



This plastic ball goes in the nose cone of a 68-79 bus transmission. There isn't a good way to tell if yours is worn out other than taking the nose cone off, but before taking it off, make sure your trans is in neutral. As you pull the nose cone off, push the hockey stick through it as you go. Now pull the hockey stick out of the ball. Turn the ball sideways in the selector rod and pull it out. Take the new ball, grease it with some white grease and install it in the selector rod. Put a new gasket on the transmission housing and slide the hockey stick just past the nose cone mating surface. Engage the hockey stick into the ball and slide the nose cone on the rest of the way and tighten it.

002 301 241A	Plastic	68-79
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## TRANSMISSION MOUNTS



These rubber mounts hold the transmission in place. Check your old ones while the transmission is in the car. To check the rear ones, take a pry bar and place it between the saddle and bell housing; now pry up. If the transmission moves, the rear mounts are bad. To check the front mount, place the pry bar between one of the forks and the transmission and pry up. If the nose of the transmission moves, replace the front mount. Stick shift movement on acceleration and deceleration are symptoms of a broken front mount. Note: Don't use solid mounts on the street. The noise that's transmitted through the tunnel will drive you crazy.

113 301 263	Rear	-67
211 301 265	8mm studs front	61-62
211 301 265A	10mm studs front	63-67

## NOSE CONE RUBBER BOOT



This boot is designed to keep water and grit out of the nose cone. Just slide it over the nose cone to install.

211 301 289A	Boot	59-79
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## TRANSMISSION MAINSHAFT SEAL



This seal goes around the main shaft. Getting the old one out is tough but if you have a seal puller, it makes it a lot easier. To put the new seal in, use a one foot long piece of 1 1/2" pipe and drive the seal in straight.

113 311 113A	Mainshaft Seal	All
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## TRANSMISSION GASKET SETS



This kit contains all of the gaskets needed to rebuild a transmission. If you don't have the correct transmission jigs don't try to rebuild the transmission yourself.

111 398 005A	Gasket Set	61-67
002 398 005A	Gasket Set	68-75
091 398 005A	Gasket Set	76-79
111 501 131	Axle tube gasket (shim)	-67
113 301 185A	Side plate o-ring	66-67
001 301 215	Nose cone gasket	68-75

## TRANSMISSION MAINSHAFT BEARINGS



This is the main culprit of a noisy transmission. The way to check your bearing is to push the clutch in while you are driving. If the noise goes away, then it's the main shaft bearing. When you push the clutch in, the throw out bearing supports the main shaft which quiets the main shaft bearing. If your bearing is bad, we suggest you take your trans to someone who knows transmissions. Replacing this bearing isn't something the average person can do.

113 311 123A	40hp-1500-1600	61-67
002 311 123	1600	68-71
002 311 123A	1700-1800	72-75
091 311 123	2000	76-83
004 311 317	Circlip	002-091

## FRONT ARM SEALS



These seals go around the arms to keep the dirt out of the front beam. Used seals are fine as long as they are pliable and not cracked.

211 405 129	4 pcs.	55-67
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## FRONT SUSPENSION STOPS



These are the rubber snubbers between the front torsion bar arms that prevent the arm from topping or bottoming out. To get the old stops off of an early king and link pin bus use a sharp knife. When installing the new stops, squirt some oil into the the rubber and push them on. Ball joint front end stops are held in with a clip.

111 405 273	Each	50-62
211 401 273	4 Pcs.	68-79

## BALL JOINTS



These joints are located in the ends of the control arms. On 68-79 buses you will need a press and some special tools to replace them. Note: The boot needs to be removed before you press the joint in the arm and then put back on after. There are four ball joints per car.

211 405 371A	Upper or lower	68-79
251 407 187	Lower	80-
251 407 361	Upper	80-
211 405 375	Boot only	68-79

## RECONDITIONED BALL JOINT ARMS



These are new ball joints pressed into reconditioned arms. They are sold in sets of 4 on an exchange basis and come with the alignment eccentrics. Just pull your old arms off and install the new ones. Ball joints are hard to check, especially if they are marginal. To check your ball joints, grab the top of the tire and try to shake it. If the tire moves the ball joint is wasted.

211 405 371AWG	4 Pcs.	68-70
211 405 371BWG	4 Pcs.	71-79
211 405 101B	Core, upper arm	68-79
211 405 151E	Core, lower arm	68-70
211 405 152	Core, lower arm	71-79

## LINK PIN SEAL



This seal goes between the arm and the spindle on buses with king and link pin front ends. It's a good idea to replace the seals when replacing the spindles. You will need four of them.

211 405 439	Each	-67
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## FRONT BRAKE DRUMS



These are the front drums that the brake shoes ride on. Note: Don't over tighten the bearing nut, just snug it down against the bearing thrust washer. Now line up the handle of your wrench with one of the lug nut holes and back the nut off so that the handle of the wrench lines up with the next hole. This will prevent the bearings from heating up and going away.

211 405 615B	5 Lug	64-67
211 405 615C	5 Lug	68-70

## FRONT WHEEL BEARINGS



These bearings go in the drum or rotor hub allowing the drum to spin. Make sure you pack the bearings well before installing them. When installing the outer race, make sure you don't scar the surface the bearing rides on. It's a good idea to buy seals and replace them at this time. Note:

Tightening of wheel bearings is explained under FRONT DRUM.

211 405 627	Inner	55-62
111 405 627	Outer	55-62
211 405 625	Inner	64-79
211 405 645D	Outer	64-84
113 517 185C	Inner	80-92
251 405 645B	Outer	84-92

## FRONT WHEEL SEALS



These are the seals for the inner bearing on drums or rotors. They should be replaced every time you take the inner bearing out. Note: Just tap them in evenly with a hammer.

211 405 641A	Seal	55-62
211 405 641B	Seal	64-67
211 405 641D	Seal	68-79
251 407 641A	Seal	80-92

## FRONT BEARING NUT LOCK PLATE



This plate goes between the two nuts on the front spindles. It is bent to lock the nuts keeping them from spinning. Note: Install the first nut, the plate and then the outer nut. Tighten the outer nut against the plate making sure you don't spin the inner nut. Use a large pair of channel locks to bend one tab against the inner nut and the remaining tab against the outer nut. This plate should be replaced every time you pull the drum off.

211 405 681	Lock Plate	55-62
111 405 681	Lock Plate	64-67

## FRONT DRUM BEARING CAPS



This cap goes on the outside of the drum, covering the bearing. The cap on the driver's side has a square hole in it for the speedometer cable.

211 405 691B	W/hole	71-79
211 405 692B	W/o hole	71-79

## FRONT A ARM BUSHINGS



To check your A arm bushings, remove the front wheels and grab the A arm and pull it back and forth. If the arm moves, the bushings are bad. These bushings are pressed into the A arms, so if you don't have a press it will be very difficult to install them. After you install the uppers arm bushings, the front end will

need to be aligned.

251 407 077	Upper	80-83
251 407 183	Lower	80-83

## STEERING BOXES



If you have a lot of play in the steering don't assume it's a bad steering box. Jack up the front of the bus and place jack stands under the front beam. While you watch the shaft coming out of the steering box have someone turn the steering wheel back and forth. If the shaft moves sideways before it spins, it's bad.

211 415 049BWG	Rebuilt CORE REQUIRED	55-67
211 415 049BCO	Core	55-67
211 415 049FWG	Rebuilt, CORE REQUIRED	68-72
211 415 049FCO	Core	68-72
211 415 049HWG	Rebuilt	73-79
211 415 049HCO	Core	73-79

## FRONT STEERING COUPLERS



This is a rubber "donut" that connects the steering shaft to the steering box. If your coupler is frayed, replace it now.

211 415 417	Coupler	68-79
251 419 417B	Coupler	80-83

## STEERING BOX COLUMN SEAL



This rubber seal goes around the steering column to seal off air coming through the floor. You'll need to take off a lot of parts to put this seal on, so if you're replacing the steering box it would be a good idea to replace this seal too.

211 415 617	Seal	-67
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## KNEE PROTECTOR



This rubber collar goes around the bracket that holds the steering column. It keeps your knee from getting bruised if you hit it on the column on your way in or out of the bus.

211 415 639	Black	55-67
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## STEERING WHEELS



These are a reproduction steering wheel. The are more flexible then the factory wheel. Getting the old steering wheel off is the hard part. Back the nut off to the top of the threads. Place your knees under the spokes. Then hit the nut with a brass drift. Yes it's going to hurt. If that doesn't work you will need to get a puller.

211 415 651B	Black	57-67
241 415 651B	Ivory	57-67
211 415 669	Horn button, Black	57-67
241 415 669	Horn button, Ivory	57-67

## DRAG LINKS



This rod goes between the steering box and the center pin. It has two tie rod ends that can wear out. To check your drag link place your hand on top of one of the ends and have a friend turn the steering wheel back and forth a little. If you can feel the end jump up and down before it pushes or pulls, it's bad. Now check the other end the same way.

211 415 701D	With ends	55-67
211 415 701G	With ends	68-79

## TIE RODS WITH ENDS



These two tie rods go from the center pin arm to the spindles, making the bus turn. To inspect the rods have a friend turn the steering wheel back and forth a little while you place your hand on the top of one of the tie rod ends. If you can feel the end jump up and down before it pushes or pulls, it's bad. On some tie rods, it's possible to change just the ends. On other tie rods, the ends are swedged on and the whole tie rod will need to be replaced.

211 415 801D	Adjustable left	55-67
211 415 801F	Adjustable left	68-79
211 415 802D	Fixed right	55-67
211 415 802F	Fixed right	68-79
251 419 803	Right or left	80-91

## TIE ROD ENDS



These are the ball joint ends on the tie rods. To check your tie rod ends see: TIE ROD WITH ENDS. On some stock tie rods, the ends don't come off and you will need to replace the entire tie rod. We suggest you replace it with an adjustable one.

113 415 835	Boots only (4)	63-79
131 415 811	Left hand thread	55-67
131 415 812	Right hand thread	55-67
311 415 811C	Left hand thread	68-79
311 415 812C	Right hand thread	68-79
251 419 811	Outer	80-91

## STEERING RACK BOOT



These boots go on the steering rack to keep dirt out of the gears. If your boots are ripped, please replace them now or you will be buying a new steering rack soon. Believe us, boots are a lot cheaper.

251 419 831A	Boot	80-92
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## STEERING DAMPER



This little shock goes from the center pin arm to the front axle beam or on the frame of 50's buses. To check your steering damper, disconnect it from the beam or frame and push it in and out. If the damper goes in and out with some resistance, it's okay. If the damper slams in or out with ease for any distance, it's not.

211 425 021ABR	Damper	55-79
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## LINK PIN KITS



This kit contains the pins, bearings and shims that attach the spindle to the axle beam on king and link pin front ends. Link pins allow the spindle to move up and down. The only way you can check your link pins is to tear them out of the spindle. Once you have the pins out, look for pits in the pin, the outer race and/or the bearing. Count your shims and make sure you have 8 per pin.

211 498 041	Call for used parts!	55-62
211 498 041A	Call for used parts!	64-67
211 498 041ABR	New Brazilian	64-67

## SWAY BAR CLAMP KITS



The main reason to replace the clamps is because you've destroyed the old ones getting them off. To put new ones on, use a large pair of channel lock pliers and squeeze the band together and then slide the clip on. Once the clip is on all the way, bend the tab down. It's a lot harder than it sounds.

211 498 101	Clamp Kit	67
211 498 101A	Clamp Kit	68-79

## CENTER PIN KITS



The center pin and bushings are housed on the front side of the front axle beam in a box. To check for wear on the center pin, have a friend turn the steering wheel back and forth, while your hand is on the top of the arm attached to the pin. If you feel the arm moving up and down before it spins, it needs to be replaced.

On buses up to 1967, the new bushings will need to be reamed to size once they're installed. We can rent you a tool that makes this job easier on those buses up to 1967. Note: When you install the pin kit, it is very important that the bottom bushing be pressed in flush and the top bushing stick out .040".

211 498 171	Center Pin Kit	55-67
211 498 171A	Center Pin Kit	68-79

## RECONDITIONED KING PIN SPINDLES



These spindles have reconditioned king pins and are ready to bolt back on the bus. They are sold in pairs on an exchange basis and come with instructions on how to pull them off and put them back on. To check your king pin spindles, jack up the front of the bus and grab the top and bottom of the tire and rock it back and forth. If you can see or feel movement, then the king pins are worn and need to be replaced.

211 498 211AWG	Pair	55-62
211 498 210ASY	Core, right	55-62
211 498 211ASY	Core, left	55-62
211 498 211BWG	Pair, call before ordering	63
211 498 210BSY	Core, right	63
211 498 211BSY	Core, left	63
211 498 211CWG	Pair	64-67
211 498 210CSY	Core, right	64-67
211 498 211CSY	Core, left	64-67

## CONSTANT VELOCITY JOINT BOOT



The CV joint boot seals in the grease and seals out the dirt. If you have a ripped boot, replace it right away because dirt will ruin a CV joint very quickly. If you haven't priced a CV joint lately, let me tell you they're not cheap. In order to replace the boots, the axles and CV joints will need to be taken off. Note: Don't pack the boot full of grease. If you do the spinning weight will rip the boot and when it does it'll make a hell of a mess under the bus.

211 501 149	Boot	68-
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## REAR SUSPENSION STOPS



This snubber keeps the rear suspension from bottoming out hard. They slip over a knob. Just squirt some oil on the knob to help you get them on.

211 501 191	Pair	64-79
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## REAR AXLE NUTS



A very important nut to say the least. This nut holds the rear brake drum on. Be sure to torque the axle nut to 250 ft. lbs. We don't want any wheels falling off. We also suggest you drive the bus for a day and tighten the nut again, because for some reason, they always seem to loosen up the first time. Always use a cotter pin to lock the nut. If you find the hole doesn't line up, tighten it a little more until it does. Never, ever back the nut off to line up the hole.

111 501 221	36mm w/o flange	53-63
311 501 221	36mm w/flange	53-63
211 501 221A	46mm	64-83

## REDUCTION BOX SOFT PLUG



This large soft plug is located on the backside of the reduction boxes that have the 46mm axle nut. A good way to remove this plug, without ruining it, is to tack weld a nut to the plug and then screw a slide hammer into the nut. Use the slide hammer to remove the plug. Grind off the tack weld and the plug should be reusable. To seal the plug, we drive them in and use a bead of 3M glue around the outside. Let the glue dry and you're good to go. New ones are available. Sometimes we can get metal ones, but most of the time we get plastic and plastic is no where near as good as a used metal one.

211 501 249 Reduction boxes w/46mm nut 64-67

## REDUCTION BOX GASKETS



This gasket goes between the reduction box halves and should be replaced when you split the reduction box. When reassembling, we use Gasegacinch sealer on the gasket.

211 501 273 W/36mm nut -63  
211 501 273A W/46mm nut 64-67

## REAR AXLE WHEEL BEARINGS



If a rear axle bearing is bad, you will have excessive play in the rear wheel. We find that German or SKF bearings last the longest. The biggest cause of bearing failure is lack of oil or grease. Those of you lowering your pre-68 buses that have reduction boxes, will find this to be a common problem due to the steep angle of the tube. Oil will travel down the axle tube but can't get back to the bearings.

311 501 283 36mm nut trans Lower outer -63  
311 501 283 Lower inner -67  
311 501 283 Upper inner -67  
211 501 283 46mm nut trans lower outer 64-70  
211 501 285 Upper outer -67  
211 501 287 Inner 68-84  
211 501 283D Outer 71-92

## REAR AXLE SEAL



This seal keeps the grease in the bearings on IRS buses. There are two identical seals per axle. These seals need to be replaced any time you remove the bearings. To install a seal, use a hammer with a piece of pipe or a very large socket that matches the OD of the seal.

211 501 317 Inner or outer 68-

## CONSTANT VELOCITY JOINTS



The CV joints on an IRS bus allows the axle to move up and down and turn. To check your CV joints, take them off and tear them apart one by one. Look for pits in the cage or on the balls. Don't mix parts from one joint to the other. If your CV joints are ok, put them back together. Note: When putting the CV joints together, look at the inner race and you will see a narrow gap between grooves and then a wide gap. Make sure that the narrow groove sits across from a wide groove on the outer race. Lost? Well, if you get it back together and the joint is locked up and the outer race won't move sideways on the inner one, you did it backwards. Take it apart and try again.

211 501 331BGR Joint 68-  
113 501 229D Bolt 68-  
113 517 279 Star lock washer for bolt 68-  
211 501 331BKT Joint, boot, grease, clip 68-

## REAR BRAKE DRUMS



The rear wheel attaches to the rear brake drum. Make sure you torque the axle nut to 250 ft. lbs, we don't want any wheels falling off. We suggest you drive the bus for a day and tighten the nut again. For some reason the nut seems to loosen up the first time. Always use a cotter pin to lock the nut. If the hole doesn't line up, tighten it a little bit more until it does. Never, ever back the nut off to line up the hole.

211 501 615A 36mm axle nut 55-62  
211 501 615E 46mm axle nut 64-67  
211 501 615G 46mm axle nut 68-70  
211 609 615 1600cc-2000cc 71-79  
251 609 615 Vanagon 80-91

## REAR SPRING PLATE BUSHINGS



This rubber donut goes around the spring plate allowing it to move up and down. There are two bushings per side. Before replacing them give us a call and we'll explain how to go about it.

211 511 245 4 Pcs. 50-67  
211 511 245A 4 Pcs. 68-79

## SWING AXLE BOOT KIT



This split boot bolts together around your swing axles on your swing axle trans. The boots will last longer if you don't point the seam straight up when putting them on. The seam should be at an angle so when the axle goes up and down, it doesn't work the seam. We prefer the aftermarket boots over the stock boots.

111 598 021A Boot kit -67  
111 598 151 Seamless boot -67

## REAR AXLE SEAL KIT



The rear axle seal kit comes with the necessary replacement gaskets, o-rings, washer and seal for the bearing cap. They should be replaced every time you take the bearing cap off. They go together in the following order: Put one of the gaskets between the box and the backing plate, then put a new seal in the cap. Now place the thin washer around the axle against the bearing, (on 46mm axle nut axles, the washer is not used). Stretch the small o-ring over the axle against the washer, if you're using one. Place the spacer in the bearing cap with the inner bevel cupping the small o-ring. Next place a gasket around the bearing and install the cap. Be sure to torque the bolts to 42 ft. lbs. Note: The large o-ring is not used. Use Gasegacinch on the gaskets. Do not fill reduction boxes until the drum is torqued down to 250 ft. lbs.

111 598 051A Axle seal kit -67

## NEW DRIVE AXLE ASSEMBLY



A new assembly consists of a new axle with CV joints and boots, ready to install. Just take your old one out and install the new one. They're greased and ready to go.

211 598 101 One side 68-79

## CV BOOT KIT



When replacing your CV joint boot, this kit is the best way to go. It comes with a boot, bolts, clip and the correct grease. The CV boot on the constant velocity joint seals in the grease and seals out dirt. If you have a ripped boot, replace it right away because dirt will quickly ruin a CV joint. If you haven't priced a CV joint lately, let me tell you, they're not cheap. In order to replace the boots, the axles and CV joints will need to be taken off. Note: Don't pack the boot full of grease. If you do, the spinning weight will rip the boot and it'll make a hell of a mess under the bus.

251 598 201 Kit 68-92

## WHEEL BEAUTY RINGS



Beauty rings fit inside the bead lock on your rim. To install the ring, just place the ring on the rim and push evenly.

211 601 150	14" rims (4)	64-70
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## HUB CAPS



Early chrome caps clip on the rim. If you're having problems with them falling off, check to see if you still have all the clips. New clips can be attached with a pop riveter. Later caps just pop on.

111 601 151	W/big emblem	-70
211 601 151	Gray	-70
113 601 151	Large 5 lug	-70
251 601 151A	Small 5 lug	71-83

## LUG BOLTS



These bolts hold the wheel on. Always torque them to 80 ft. lbs. and never use an impact gun. If you have a bolt that you can't get off, grab your biggest hammer and hit the head of the bolt. Now try to loosen it again, it should come out now.

111 601 139	12X1.5mm bolt (Bug)	
251 601 139	14X1.5mm bolt	-70, rear 80-
N0201121	14X1.5mm nut (5)	71-79, front 80-

## BRAKE BACKING INSPECTION PLUG



You will find this little plug in the backside of the rear backing plates on 1968 and later buses. It keeps dirt out of the brakes. Remove the plug to check and adjust your rear brakes. (1968-1973 not available)

113 609 163	Plug	74-79
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## BRAKE ADJUSTING STAR AND SCREW



These are the screws and adjusting stars that freeze up and keep you from adjusting your brakes. If you are replacing your brake shoes, make sure you take these out and clean them up. Grease the threads of the screw and the side of the star where it goes into the backing plate. Anti-seize works really well.

113 609 205A	Star	54-79
211 609 209A	Screw	55-92

## FRONT BRAKE SHOE SETS



This set of shoes or linings are in the front drums and are sold on an exchange basis. A set consists of four shoes, two per drum.

Note: If your bus is 1967 or earlier, purchase two front lock tabs when you buy the shoes.

211 609 237B	Shoe set	55-62
211 609 237BCO	Core	55-62
211 609 237D	Shoe set	64-70
211 609 237DCO	Core	64-70

## REAR BRAKE SHOE ARM CLIP AND PIN



This is the horseshoe clip that holds the emergency brake arm to the shoe. When taking the old clips off, you usually destroy them. It's a good idea to buy new clips if you are replacing your rear shoes.

211 609 619	Clip	All
211 609 601B	Pin	All

## REAR BRAKE SHOE SETS



This set of shoes or linings are in the rear drums and are sold on an exchange basis. A set consists of four shoes, two per drum.

Note: It's a good idea to purchase two new horseshoe clips and two new cotter pins as well.

211 609 537B	Shoe set	55-62
211 609 537BCO	Core	55-62
211 609 537E	Shoe set	64-70
211 609 537ECO	Core	64-70
211 609 537J	Shoe set	71
211 609 537JCO	Core	71
211 609 537K	Shoe set	72
211 609 537KCO	Core	72
211 609 537N	Shoe set	73-79
211 609 537NCO	Core	73-79
251 609 537	Shoe set	80-92
251 609 537CO	Core	80-92
N125481	Rear axle cotter pin	All

## EMERGENCY BRAKE CABLES



These cables set the rear brakes. When installing the new cables use white grease on them. Make sure you have adjusted your rear shoes before tightening the cables.

211 609 701F	3465mm	64-67
211 609 701FGR	3465mm, German	64-67
211 609 701H	3438mm	68
211 609 701HGR	3438mm, German	68
211 609 701P	W/servo, 3440mm	71
211 609 701T	2960mm	72-79
251 609 701C	1455mm	80-92

## BRAKE MASTER CYLINDERS



This hydraulic cylinder feeds all the wheel cylinders. After installing a new one, make sure the rod that pushes the plunger is adjusted correctly. When adjusting it, you can't see the measurement, but you can feel it. The rod should have about an 1/8" of free play before it starts pushing. If it's too tight, it will not allow the fluid to travel back to the reservoir. This will cause the brakes to lock up, usually in the middle of an intersection.

211 611 011JBR	Screw on reservoir	-66
211 611 021AAB	With servo	71-79
211 611 021Q	W/o servo	68-69
211 611 021T	W/o servo	70
251 611 021C	With servo	80-92
211 611 817A	Replacement grommets	67-79
113 611 817A	Replacement grommets	80-92

## REAR WHEEL CYLINDERS



This hydraulic slave cylinder is found in the rear brake backing plate to push the brake shoes out. If you have one that is leaking, make sure you replace it and the shoes. We've found it's impossible to get brake fluid out of the shoes once it's oozed on them.

211 611 047CBR	Rear cylinder	55-71
211 611 047FBR	Rear cylinder	72-92

## FRONT WHEEL CYLINDERS



This hydraulic slave cylinder is found in the front brake backing plate. There are two per side in the front. It's impossible to get the fluid out of the shoes once they have been soaked with brake fluid. If you have a leaking one, make sure you replace it and the shoes.

211 611 069	Left	55-62
211 611 070	Right	55-62
211 611 069C	Left	64-70
211 611 070C	Right	64-70

## MASTER CYLINDER BOOT



This boot goes on the end of the master cylinder. It keeps dirt and water out of the cylinder. If your boot is ripped you should replace it.

113 611 195	Boot	50-70
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## BRAKE FLUID RESERVOIRS



The reservoir holds the brake fluid for the brake master cylinder. They don't normally go bad unless they have been left out in the sun without fluid. Note: When installing the reservoir on the pre 67 master cylinder, make sure you use a skinny wrench or you will pop the reservoir off the metal threaded part.

211 611 301CM	Screw on	-66
867 611 301B	Rabbit style	67
211 611 313J	Res. at master cylinder	73-79
N138271	Metal ring for 211 611 301CM	

## BRAKE FLUID RESERVOIR CAPS



This cap sits on top of the brake fluid reservoir filler hole. If you over tighten the cap, it will split. Making a new one out of recycled aluminum foil doesn't cut it.

113 611 373	Rubber plug	50-60
191 611 349A	Screw on cap	50-67
281 611 349	Screw on cap	68-79
191 611 349A	Screw on cap	80-92

## BRAKE BLEEDER VALVES AND CAPS



This valve in the wheel cylinder allows you to bleed the brakes. If the bleeder valve has broken off, we've found it's easier to replace the entire wheel cylinder, because you usually ruin the cylinder before you get the valve out.

113 611 475	Long shank	50-54
211 611 475A	Front, 10mm	55-70
211 611 477A	Rear, 6mm	55-92
211 611 483	Rubber cap	All

## FRONT BRAKE HOSES



This flex hose goes from the hard line to the front wheel cylinder. To check your flex hoses, jack up the front of the bus and spin the wheel. Have your buddy step on the pedal, the wheel should stop. Now have your buddy let off the pedal and try to spin the wheel. If the wheel spins freely, then the hose is fine. If the wheel is tight, crack open the bleeder valve for a second. If the wheel then spins freely, you have a bad hose. Old hoses tend to collapse inward allowing fluid out because of the pressure, but not allowing it to return because of lesser pressure from the springs.

113 611 701	480mm	50-54
211 611 701	440mm	55-70
281 611 775B	340mm	71-79
251 611 775A	405mm	80-85

## BRAKE LINE GROMMET



This grommet goes around the metal brake lines that go through the frame members and brackets. If your grommets are gone, please replace them. The metal line will wear through and you will be without brakes; not a good thing.

211 611 751	8 Pcs.	52-77
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## METAL BRAKE LINE T



This T connects the front to rear brake line to the two rear brake lines on the vehicle.

803 611 755	T-connector	All
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## REAR BRAKE HOSES



This flex hose goes from the hard line on the rear fork to the hard line on the axle tube. To check your flex hoses, jack up the rear of the bus and spin the wheel. Have your buddy step on the pedal, the wheel should stop. Now have your buddy let off the pedal and try to spin the wheel. If the wheel spins freely, the hose is fine. If the wheel is tight, crack open the bleeder valve for a second. If the wheel spins freely now, you have a bad hose. Old hoses tend to collapse inward allowing fluid out because of the pressure, but not allowing it to return because of lesser pressure from the springs.

211 611 775B	270mm	-67
211 611 775B	Right, 270mm	68-79
211 611 775C	Left, 290mm	68-79
433 611 775A	265mm	80-92

## BRAKE SERVO



The brake servo is a big vacuum can that assists you with the brake pedal pressure. A quick way to check your servo is to locate the flex hose connected to the intake manifold and take it off. Now plug both the servo and the intake manifold connectors.

Drive the bus slowly and step on the brakes. If you notice a big difference in the pressure you have to apply to the brake pedal, your servo is good. Servos are rebuilt and are sold on an exchange basis.

211 611 905RC	Rebuilt servo	71-79
211 611 905CO	Core	71-79
191 611 933	One way vacuum valve	71-79

## FRONT BRAKE CALIPERS



Front calipers hold the brake pads that stop the rotor, which in turn stops your vehicle. Bad calipers usually leak. Some of these calipers are rebuilt and are sold on an exchange basis. Rebuilt calipers come with brake pads (loaded).

211 615 107	Left	71-72
211 615 107CO	Core	71-72
211 615 108	Right	71-72
211 615 108CO	Core	71-72
211 615 107A	Left	73-85
211 615 107ACO	Core	73-85
211 615 108A	Right	73-85
211 615 108ACO	Core	73-85
251 615 123C	Left	86-92
251 615 123CCO	Core	86-92
251 615 124C	Right	86-92
251 615 124CCO	Core	86-92

## BRAKE ROTORS



This is the front brake rotor that the pads ride against on disc brake front ends. Note: When you tighten the bearing nut, snug it down against the bearing thrust washer. Then line up the handle of your wrench with one of the lug bolts. Now back the nut off so that the handle of the wrench lines up with the next bolt. This will prevent the bearings from heating up and wearing out.

211 615 301A	Front L/R	71-72
211 615 301B	Front L/R	73-79
251 407 617D	Front with hub L/R	80-84

## BRAKE HARDWARE KITS



This kit has all the springs, pins and keepers for drum brakes. One kit does both wheels.

211 698 002A	Front	55-70
211 698 003	Rear	55-63
211 698 003A	Rear	64-79
251 698 003	Rear	80-92

## HUB CAP SPRING & RIVET KIT

This kit contains the replacement spring clips and rivets to hold hub caps on. Drill out the old rivet and remove what is left of the old clip. We suggest you pitch the rivets that come in the kit and use a pop rivet instead.

111 698 131	5 Pcs.	-70
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## FRONT BRAKE PAD SETS



These brake pads go into the calipers and are sold in sets of four, two per caliper. Sold with no exchange.

211 698 151F	4 pads	71-72
211 698 151A	4 pads	73-85
251 698 151C	4pads	86-92

## WHEEL CYLINDER REPAIR KITS



This kit is used to rebuild a wheel cylinder. We suggest you price out wheel cylinders and if your year of vehicle has the cheap cylinders, don't even bother trying to rebuild them.

211 698 291	Rear	56-71
211 698 301	Rear	72-84
211 698 411	Front	55-70

## CALIPER REPAIR KIT



This kit comes with the o-rings and dust seals to repair your calipers. If you get the calipers apart and the bores are pitted, you're probably wasting your time trying to rebuild them. When putting the kits in, use lots of brake fluid on the o-rings.

211 698 471C	Caliper repair	71-85
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## SHIFT ROD GUIDE



The shift rod guide holds the shift rod bushing. The guide usually doesn't go bad unless the bushing has worn out. When this happens, the shift rod rides directly on the guide and wears it out. The guide is bolted up when you install the shifter. It's a good idea to install a new bushing when installing a new guide. Be sure to use white grease on the shift rod where it rides in the bushing.

111 701 255B	Guide	-65
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## SHIFT ROD BUSHINGS



The shift rod bushing wraps around the front shift rod. If your shifter is sloppy, this is usually the reason. Before you start ripping apart the shifter, crawl under the front and find the shift rod. Follow the rod to the shifter and find the guide and bushing. Push the rod up and down. If it moves, the shift rod bushing is bad. When installing the new bushing, use white grease on the rod where it rides in the bushing. The rear bushings can only be replaced if the transmission is out.

111 701 259A	Front	-65
111 701 263	Snap ring for 111 701 259A	
211 711 197	Front	66-73
211 711 182	Front	74-79
211 711 185B	Middle	55-67
211 711 179	Middle	68-79
211 711 185B	Rear	55-79
171 711 166	Front at shifter	80-85

## FRAME REPAIR SECTIONS



Sections that are used for repairing the frame. Welding is required.

211 703 021A	Front, left	55-67
211 703 022A	Front, right	55-67
211 703 023	Middle	55-67
211 703 025	Rear	55-67

## INNER FRONT REPAIR PANELS



Body repair pieces for front panels. Welding required.

211 703 071C	Inner front (1pc)	55-67
211 703 071B	Inner front (5pc)	55-67
211 805 035C	Upper front	55-67
211 703 073B	Outer front 7" tall	55-67
211 805 034	Finishing strip	55-67
211 703 073A	Outer front 4" tall	55-67

## CHASSIS OUTRIGGERS



This support goes from the main frame out to the inner rocker. It is located in the same area as the jack point. There are two per side. Replacing these takes some welding. We suggest you also replace the jack points at this time.

211 703 125	Front	55-67
211 703 131	Rear	55-67

## CENTER CHASSIS SECTIONS



This support goes between the main frames of your bus. There is a front one, as well as a rear one. These pieces take some welding to install.

211 703 391B	Front	55-67
211 703 475C	Rear	55-67
211 703 391C	Front	68-72
211 703 391G	Front	73-79
211 703 475E	Rear	68-72
211 703 475G	Rear	73-79

## JACK POINTS



The jack point is where you put in the stock jack to jack up the bus. Your bus has two per side and they take some welding to install.

211 703 621	Front left	55-67
211 703 622	Front right	55-67
211 703 631	Rear	55-67
211 703 115	Front left	68-79
211 703 116	Front right	68-79
211 703 119A	Rear left	68-79
211 703 120A	Rear right	68-79

## UNDER FLOOR PLATES



These large panels box in the frame on buses with sunroofs or buses with doors on both sides. Why only these buses? The panels give back strength to the frame that the doors or the sunroof

takes away.

215 703 705	Left	55-67
215 703 706	Right	55-67
215 703 715	Center (2 Pcs.)	55-67

## FRONT BUMPER



This is a Euro style bumper with no holes for the plumbing. Make sure you wrap your fingers around the edges when installing because your skin will grow back but the paint won't.

211 707 105A		59-67
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## BUMPER BOLTS



This is a special chrome bolt that has a round head on it. Just below the head it has a square shank to hold it in place while you tighten it.

113 707 191B	Long, rear	-58
113 707 191C	Short, front	-58
113 707 191C	Short	68-

## FRONT BUMPER STEP PADS



These are the rubber pads that are on the ends of the front bumper. They fit on a 1968-1972 bus.

211 707 291	Pair	68-72
211 863 735	Pair	73-79

## REAR BUMPERS



This replaces the 2x6 board now residing on most of the early 60's buses.

211 707 305	Blade ribbed bus only	53-58
211 707 305A	Blade	59-67

## BUMPER BRACKETS



This bracket holds up the rear bumper or aftermarket 2X6 board. Two required.

211 707 135B	Front left	59-67
211 707 136B	Front right	59-67
211 707 335	Rear	53-58
211 707 333	Rear	59-67

## REAR BUMPER SPLASH PANS



This is the pan that goes in the rear corner between the bumper and the body.

211 707 361	Left	53-58
211 707 362	Right	53-58
211 707 361B	Left	59-67
211 707 362B	Right	59-67

## LICENSE PLATE BRACKETS



Holds the license plate to the bus. A lot better than speaker wire.

113 707 904	Rear	50-79
211 943 901C	Front, rings (pr)	59-67
211 827 905	Front	68-79

## GEAR SHIFT BOOTS



The gear shift boot goes around the gear shift lever at the base; it keeps dirt out of the moving parts. If you are pulling the lever apart, make sure you grease the lower ball and the upper bell; it will make the bus shift easier.

111 711 115A	Shift boot	50-79
251 711 115A	Shift boot	80-83

## SHIFT KNOBS



This is the knob on top of the shifter.

113 711 141BK	Black, 10mm	52-67
113 711 141GY	Grey, 10mm	52-67
113 711 141IV	Ivory, 10mm	52-67
131 711 141BK	Black, 12mm	68-79
161 711 141	Black, 4 speed	80-92

## GEAR SHIFT LEVER STOP PLATE



This plate sits under the shifter to keep you from hitting reverse gear when you shift into 2nd. Used ones work fine. When installing the guide, the small ramp goes up and forward.

211 711 149	Stop plate	-79
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## SHIFT ROD BOOT



This boot goes on the tube that the shift rod runs through. It keeps water and dirt out of the bushings. To put the rear one on is not hard. You'll have to remove the shift rod coupler, install the boot and put the coupler back on. The front one is not hard either if the front shift rod coupler comes off. If you are having trouble with the front shift rod coupler please read FRONT SHIFT ROD COUPLER.

211 711 183B	Boot	52-67
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## FRONT SHIFT ROD COUPLERS



This coupler attaches the front shift rod to the rear shift rod. They never go bad unless you're trying to take it off and the bolt breaks; then you'll have to cut it off. Always cut the coupler end to end with a cut off wheel. The cut off line should be in line with the shift rods, never around the coupler. What you are trying to do is split the coupler in half without cutting the shift rods. Drilling out the bolt(s) never works.

1711175	Two bolt	-61
211 711 169A	Single bolt	62-79
211 711 189A	Set screw	-79

## REAR SHIFT ROD COUPLERS



This coupler attaches the shift rod to the transmission. The way to check your shift rod coupler is to take two pairs of pliers and grab onto the shift rod and hockey stick. Now twist the rods a little to see if you have any play. If you have play, you can have shifting problems. Better think about replacing the coupler.

111 711 175B	Round	-67
311 798 119	Square repair kit	68-79
311 798 211	Square	68-79
211 711 189A	Set screw	-79



## EMERGENCY BRAKE KNOBS



This is the button that you push to release the brake. To remove the old one, just unthread it.

113 711 333BBK	Black	-67
113 711 333BGY	Grey	-67
113 711 333BIV	Ivory	-67

## HEATER KNOBS



This knob fits on the heater control to give you something to play with while you get used to the cold. The early bus knob is a pain to replace without cracking it. You will see a pin that holds the knob on.

Drive this pin out, replace the knob, then drive the pin back in carefully. See HEATER CABLES on how to get the slide out.

111 711 611BK	Black	-67
111 711 611GY	Grey	-67
111 711 611IV	Ivory	-67

## HEATER CABLES



Heater cables open the flaps in the heater boxes allowing heat into the bus. When you install the cables use white grease. Place the control(s) in the off position and crawl under the bus and hook up the heater boxes. A buddy sure would be helpful. Now get back up and put the control(s)

in the full on position and then crawl back under the bus and push the lever on the heater boxes all of the way forward and lock into place. The exercise is good for you. Now recheck the levers to make sure they are closed when the controls are in the off position. On 1967 and earlier buses, the heater cable is attached to a slide. To get the slide out, twist the knob clockwise all the way. Just under the knob you will see a knurled collar. Wrap a rag around this collar and use a pair of pliers to unthread it. Once the collar is unthreaded you will be able to pull the slide out. When putting the slide back in make sure that the slot in the slide indexes itself to the spot on the slide hole.

211 711 629B	Single cable	-67
211 711 629F	Left	68-71
211 711 630C	Right	68-71
211 711 629L	Left	72
211 711 630L	Right	72
211 711 629N	Left	73-79
211 711 630N	Right	73-79
251 711 629	Left	80-83
251 711 630	Right	80-83
111 129 921	Barrel lock	-83

## HEATER CABLE BOOT



These little boots fit on the end of the heater tubes that the cables run through. They prevent dirt from plugging up the tubes. The trick to getting them on is to put a drop of oil in the boot before

installation.

111 711 691	Pair	-67
211 711 633	Each	68-79

## BRAKE PEDAL RETURN SPRINGS



This spring returns the brake pedal and is very important. If yours is broken, the pedal won't come all the way back. If any pressure is on the master cylinder, the fluid won't return to the reservoir. This allows the brakes to lock up when you don't want them to, causing a very embarrassing situation.

211 721 163A	Spring	55-67
211 721 163B	Spring	68-79

## PEDAL PADS



These rubber pads fit over the brake and clutch pedals so your foot doesn't slip off the pedal. They're cheap and easy to install.

311 721 173A	Each	-67
211 721 173	Pair	68-79
311 721 173A	Each	80-83

## CLUTCH SLAVE CYLINDER



This slave cylinder moves the clutch arm, releasing the clutch. If you're having problems with the clutch disengaging, find the cylinder (drivers' side of the transmission towards the top) and see if it's leaking. If it is, replace it. If not, then make sure your master cylinder reservoir (behind the speedometer) is full and try bleeding the slave cylinder.

251 721 263A	Slave cylinder	80-92
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## CLUTCH CABLE CLEVIS ARM



This little arm holds the clutch cable to the pedal shaft. Use some white grease on the clevis pin when installing.

211 721 319C	Clevis arm	68-79
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## CLUTCH CABLES



The clutch cable pulls the arm that releases the clutch. When replacing the cable, use white grease on the clutch cable and clevis pin so that the cable will last longer and work better. The easiest way to replace a cable is to remove the nut(s) from the clutch arm at the transmission and then pull the bowden tube out of the bracket, so the tube is straight. Now pull the cable out from the front and install the new one in the reverse order. A two-bolt bell on 68-79 buses, where the clutch pedal shaft is bolted to the frame, will need to be removed to get to the clevis pin. It is good idea to replace the clevis pin at this time. We recommend carrying a spare clutch cable and clevis pin in case they break in the middle of nowhere.

211 721 335C	3110mm	55-61
211 721 335B	3116mm	62-67
211 721 335E	3200mm	68-71
211 721 335J	3215mm	72-79

## CLUTCH CABLE NUTS



This adjustment nut goes on the end of the cable, back by the transmission. Always use some grease on the threads to make further adjustments easier. Tighten the nut until you can barely move the arm (about 1/8"). This adjustment translates into about 2" of freeplay at the top of the clutch pedal.

131 721 349	Wing nut	66-79
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## CLUTCH CABLE CLEVIS PINS



The clevis pin goes on the front end of the clutch cable and should be replaced when replacing the cable. Use white grease on the pin. It is a good idea to carry a spare clutch cable and clevis pin in your bus.

211 721 351	Clevis pin	59-71
211 721 351A	Clevis pin	72-79

## CLUTCH CABLE SLEEVES (BOWDEN TUBE)



This tube goes from the metal tube coming out of the tunnel to the bracket on the transmission. It needs a slight bend in it to work properly.

311 721 361	Clutch cable sleeve	59-67
211 721 361D	Clutch cable sleeve	68-79

## CLUTCH CABLE BOOT



The clutch cable boot goes over the end of the bowden tube where the cable moves in and out. It's purpose is to keep dirt out of the tube. The boot is a real pain to put on, the only thing that makes it easier is a drop of oil on the end of the tube and a large vocabulary of nasty words.

211 721 365 Boot -79

## OEM PEDAL SHAFT SEALS



These seals go around the shafts of the clutch and brake pedal to seal the holes in the floor. To install the 55-59 seals, take the pedals loose from under the bus and remove the cups that the felt sat in. Put the seals around the pedal and reinstall the cups and the pedals. To install the 60-79 seals just slip them around the pedal and stick them to the floor from under the bus. This is the original style seal that came on your bus.

211 721 383 Felt (ea) 55-59  
211 721 383B Pad (ea) 60-79

## PEDAL SHAFT SEALS



These seals go around the shafts of the clutch and brake pedal to seal the holes in the floor. To install the seals, take the pedal loose from under the bus, put the seals around the pedal and reinstall.

211 721 387 Pair 55-79

## CLUTCH MASTER CYLINDER



This master cylinder pushes fluid to the slave cylinder on the clutch.

251 721 401A Master cylinder 80-92

## THROTTLE CABLES



This cable operates the carburetor(s). It is a good idea to use white grease on the cable when you install it. We recommend you to pack a spare accelerator cable along with your spare clutch cable.

211 721 555A	3564mm	55-64
211 721 555C	3576mm	65-67
211 721 555D	3670mm	68-
211 721 555G	3680mm	69-71
211 721 555J	3700mm	72
211 721 555T	3655mm	73
211 721 555N	3435mm, CA	74
211 721 555T	Non CA	73-74
211 721 555AA	3458mm	75-79
251 721 555	Vanagon gas m/t	80-84
251 721 555C	Vanagon diesel	82
251 721 555G	Vanagon diesel	83-84
251 723 555	Vanagon gas a/t	80-82
251 723 555E	Vanagon gas a/t	83-92

## ACCELERATOR ROD BOOT



This boot keeps air from coming through the floor where the accelerator rod goes through.

211 721 621 55-79

## ACCELERATOR LINKAGE LEVER



This linkage lever hooks to the accelerator cable under the front of your bus. In time, the holes in each end of the lever wears out, making the action sloppy. It's relatively easy to install.

211 721 631A Lever 68-72

## ACCELERATOR HINGE AND PIN



This is a replacement hinge for the accelerator pedal. Welding is required. Use some white grease on the pin when installing it.

211 798 629 Hinge and pin 55-67

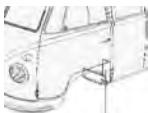
## FRONT FLOOR SECTIONS



These floor areas tend to rust. Welding is required when replacing them.

211 801 050	Barndoor cab floor	-54
211 801 051HL	Left	55-67
211 801 051HR	Right	55-67
211 801 051IL	Left	68-71
211 801 051IR	Right	68-71
211 801 051JL	Left	72-79
211 801 051JR	Right	72-79
211 801 052HL	Left floor half	55-67
211 801 052HR	Right floor half	55-67

## FRONT INNER WHEEL WELL PANELS



These panels are located behind the front tire. Welding is required.

211 801 071	Left	55-67
211 801 072	Right	55-67
211 801 071A	Left	68-79
211 801 072A	Right	68-79

## FRONT SEAT BELT REPAIR PANELS



This repair panel is for the seat belt anchor area. Welding is required.

211 801 325	Right	55-67
211 801 326	Left	55-67

## FLOOR SUPPORT SECTIONS



Replacing the floor support section is a major ordeal. Welding required.

211 801 371A	Hat section	55-67
211 801 381C	T section	55-67

## CARGO FLOORS



This is a section of the rear cargo floor. A section piece is 15 1/2" wide and 59" long. Replacing the cargo floor section is a lot of work. The whole floor section is also available and comes in 2 pieces.

211 801 404K	Section	-67
211 801 404J	Full floor 2pc	-67
211 801 401	Floor latch plate	-67

## TRUCK BED REPAIR SECTION



This is a section of the rear cargo bed of a truck. A section comes in 15 1/2" wide and 59" long. Replacing this takes an immense amount of work. It is not the same as the cargo floor.

261 801 465A	Section	-67
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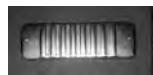
## LOWER "V" REPAIR PANEL



This is the 4.5 inch repair panel at the bottom of the "V" on the front of the bus.

211 805 036	"V" repair panel	-67
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## RADIO BLOCK OFF PLATE



The radio block off plate covers the gaping hole if you do not have a radio or if you decide to locate it elsewhere.

211 805 189	Block-off plate	55-66
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## FRONT & REAR BUMPER END CAPS



These plastic caps mount on the ends of the bumper.

251 807 123A	Front left or right rear	80-92
251 807 124A	Front right or left rear	80-92

## BUMPER DECO STRIPS



The deco rubber strip goes down the middle of the bumper.

251 807 221A	Front	80-92
251 807 421A	Rear	80-92

## ROCKER PANELS



This is the most common place for rust on your bus. They should have made them bolt on, but didn't so it's going to take some welding to put them on.

211 809 101D	Rt, outer rocker 7" tall	55-67 RHD
211 809 101E	Left, outer rocker 13.5" tall	55-67
211 809 101F	Left, outer rocker 7" tall	55-67
211 809 181A	Lower outer cargo door	55-67
211 809 591B	Inner sill, for cargo rocker	55-67
211 801 393	Inner rocker left or right	55-67

## SHORT REAR ROCKERS



This is the short rocker that goes behind the side cargo doors to the fender skirt. Welding is required.

211 809 159	7" tall, left	55-67 RHD
211 809 160	7" tall, right	55-67
211 809 159A	7" tall, left	68-79
211 809 160A	7" tall, right	68-79
211 809 159B	7" tall, left	72-79
211 809 160B	7" Tall, left	72-79

## REAR FENDER SKIRTS



Remember the craze of the 60's. This was the piece everyone cut out. To put your bus back to stock will take some welding.

211 809 101	Left	55-61
211 809 102	Right	55-61
211 809 101A	Left	62-67
211 809 102A	Right	62-67
211 809 101B	Left	68-71
211 809 102B	Right	68-71

## SIDE PANEL INNER SUPPORTS



These are the inner support pieces for the side panels. Requires welding.

211 809 309	Front left	55-67
211 809 310	Front right	55-67
211 809 311	Rear left	55-67
211 809 312	Rear right	55-67

## SIDE CARGO DOOR HINGE PILLARS



These repair pieces are 15 inches high. The inner pillar has an adjustable plate for the side door hinge.

241 809 322C	Inner	55-67
241 809 323C	Outer	55-67

## FRONT DOG LEGS



This is the front wheel arch, also known as the dog leg. It will take some welding to install. Make sure the door continues to open and close nicely throughout the welding process. Keep checking it or you'll wish you had.

211 809 501A	Left	55-67
211 809 502A	Right	55-67
211 809 501B	Left	68-71
211 809 502B	Right	68-71
211 809 501C	Left	72-79
211 809 502C	Right	72-79

## FRONT DOOR STEP REPAIR PARTS



The front door step repair replaces the lower part of the dog leg. Welding is required.

211 809 503	Left	55-67
211 809 504	Right	55-67
211 809 503A	Outer, left	68-72
211 809 504A	Outer, right	68-72
211 809 505A	Inner, left	68-72
211 809 506A	Inner, right	68-72
211 809 503B	Outer, left	73-79
211 809 504B	Outer, right	73-79
211 809 505B	Inner, left	73-79
211 809 506B	Inner, right	73-79

## ENGINE DOOR SEAL INSIDE CAR



This seal inside the rear of the bus, goes around the engine access door. The seal quiets the engine noise and helps to keep out engine fumes.

251 813 133B	Seal	80-83
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## BATTERY AND PLATFORM TRAYS



This is the tray that the battery sits in and rusts out. To install the tray correctly will take some welding. Please read NEGATIVE BATTERY CABLE for some more helpful information.

211 813 164	Battery tray, right 6v	55-66
261 813 164	Battery tray, right truck	55-66
211 813 163	Platform tray, left	55-67
211 813 164A	Battery tray, right 12v	67
261 813 164A	Battery tray, right truck, 12v	67
261 813 163	Platform tray, left truck	55-67
211 813 164M	Battery tray, right	68-71
211 813 163M	Platform tray, left	68-71
261 813 164M	Battery tray, right truck	68-71
261 813 163M	Platform tray, left truck	68-71
211 813 164N	Battery tray, right tray	72-79
211 813 163N	Platform tray, left	72-79
261 813 164N	Battery tray, right, truck	72-79
261 813 163N	Platform tray, left truck	72-79

## REAR APRON REPAIR



This repair part is for the lower part of the rear apron or valance. Welding is required.

211 813 175	Rear apron	55-71
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## REAR ENGINE LID HINGE REPAIR PANEL



This is a repair panel for the area above the engine lid. Welding is required.

211 813 227D	Repair panel	55-71
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## SIDE ENGINE COMPARTMENT REPAIR PANELS



These repair panels are located on the side of the engine; they hold the seal for the engine. What's important here is the seal.

You have to seal the top half of the engine from the bottom. If the seal is missing or the area that holds the seal is gone, replace it. These have to be welded in.

211 813 242	Left	55-67
211 813 243	Right	55-67

## REAR CORNERS



This is a repair panel for the rear corner. Welding is required. At the time of this writing, we can not get the 55-67 bus corners. 68-71 corners will work, but they'll need to be cut down and there'll be a bump where the hole is for the corner bumper mount.

211 813 355H	Left	68-71
211 813 356H	Right	68-71
261 813 355	Truck, left	59-71
261 813 356	Truck, right	59-71
211 813 355I	Left	72-79
211 813 356I	Right	72-79

## REAR FENDER WELL SPLASH SHIELDS



This little piece of sheet metal hangs down in the rear of the fender well keeping mud and water from splashing up into the rear corner. Welding required.

211 813 363A	Left	-67
211 813 364A	Right	-67

## ENGINE SEALS



This rubber seal goes between the body and the engine. On buses 1971 and earlier, it's a good idea to install the seal before installing the engine. On buses 72 and later, you should put it in after the engine is installed. This seal is very important as it keeps the exiting exhaust heat out of the engine compartment. The last thing you need is additional heat entering the cooling fan and going over the cylinders and heads.

111 813 705A	Rear engine	-71
111 813 741G	Firewall	-71
411 813 225	Foam	72-79
251 813 226A	Seal	80-85

## FRESH AIR DUCT SEALS



This is the flat seal for the air duct on buses 1955-1967. In order to replace the flap seal, the assembly will need to be removed. Drill out the rivets with an 1/8" drill and put the new seal in with 1/8" pop rivets.

211 817 211	Flap stops (pr)	55-67
211 817 758	Face plate gasket	55-67
211 817 773A	Duct seal	55-67
211 817 773	Flap seal	55-67
211 817 810	Air duct control flap gasket	55-67

## FAN BLOWER MOTOR



This is the blower motor for the heater in a Vanagon.

251 819 019	Blower motor	80-91
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## ENGINE DOOR PROP



This is the hinge stay that is used to prop up the engine lid.

261 827 361	Lid prop	-63
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## ENGINE DOOR LOCK



This is a good way to keep people from messing around in your engine compartment.

113 827 503F	3 hole	67
111 827 517A	Seal	67
211 813 259B	Latch plate	67-71

## ENGINE DOOR LOCK COVER



This little chrome cover goes on the engine lid of buses up to 1966. It covers the square hole for the church key.

261 827 575	Lock cover	-66
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## ENGINE DOOR SEALS



The engine lid seal does just that, it seals the engine lid. It prevents the air that's forced through the side vents from being sucked out the back and forces it to go through the fan where it is most needed.

261 827 711	Seal	55-71
261 827 711C	Seal	72-79

## REAR CARGO DOOR SEALS



The rear cargo door seal has to be glued in. We suggest you use 3M super weatherstrip adhesive.

211 829 193	Seal	55-63
211 829 193C	Seal	64-71
211 829 193E	Seal	72-79
255 829 193	Seal	80-92

## REAR CARGO DOOR LOCKS



This lock goes on the rear cargo door. To get the old one off you will need to take off the door panel. There will be a screw holding the lock in place. This screw is kind of tricky, in that, it is one of the three screws that hold the triangle latch assembly in place.

211 829 231	T-handle style	-63
251 829 231	Push button style	80-84
251 829 231B	Push button style	84-92

## REAR CARGO DOOR LOCK SEAL



This is the seal that goes around the lock cylinder of the rear cargo door. It goes on before you put the cylinder in place. To get the cylinder off, see REAR HATCH LOCK.

251 829 233B		84-92
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## REAR CARGO DOOR STRUTS



These struts hold up the rear hatch of your Vanagon. If you are using a stick now, it might be a good idea to replace them.

251 829 331A	Left or right	80-91
251 829 331B	Left, call for info	80-91
251 829 332	Right, call for info	80-91

## ENGINE DOOR HINGE



These new hinges replace your old worn out or frozen hinges. They're held in place with phillips head screws. Getting the screws out is the toughest part of replacing them. These hinges also work on the side door(s) of a single cab.

261 829 551	Lid hinge	55-79
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## CHURCH KEYS AND HOLDER



This is the replacement key for the one the factory gave you to open the engine and gas doors on buses up to 1966.

261 829 565A	Church key	-66
261 829 565P	P shaped church key	-66
211 863 125	Church key holder	-66

## SINGLE CAB SIDE DOOR SEAL



This seal is for the side door on a single cab. As an option some single cabs had two doors.

261 829 571	Seal	52-79
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## ENGINE DOOR HINGE SEALS



This seal goes around the engine lid hinges or single cab side door hinges.

261 829 573	Pair	-79
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## SIDE GATE STOPS



These rubber buffers go on the gates and body of single and double cab buses. They prevent the gates from banging into the body and are held in place with a screw.

261 829 577	4 Pcs., 25mm	-77
261 829 575	4 Pcs., 40mm	-77

## FRONT DOOR BOTTOM REPAIR PANELS



This panel will repair the rusted out door bottom. Welding is required.

211 831 055	Left	-67
211 831 056	Right	-67

## FUEL DOOR LOCK AND SEAL



This lock mechanism is used on buses up to 1966. It holds the gas door shut. To install the lock, take the small nut off the back side and remove the lever arm. Now remove the large nut and place the mechanism into the door. Screw the large nut back on along with the lever and then the small nut.

261 829 651	Fuel door lock	55-66
261 829 661	Seal for fuel door lock	55-66

## FRONT DOOR SEALS



Front door seals keep out the wind, rain, dirt and noise. They need to be glued into place. We suggest you use 3M super weatherstrip adhesive.

211 831 120	Pair	-67
211 831 721D	Left	68-79
211 831 722D	Right	68-79
211 831 721DBR	Brazilian, Pair	68-79
251 837 911B	Left or right	80-92

## HINGE PINS



This is the pin that goes in the door hinge. Getting them out is hard work. You will need an air hammer and lots of patience.

211 831 421	Bottom	55-67
211 831 421A	Bottom oversize .317"	55-67
211 831 421B	Bottom oversize .321"	55-67

## HINGE SCREW PLUGS



These are the plastic plugs that hide the door hinge screws. To install them, just pop them in the hole.

211 831 449	Clear, 4 Pcs.	-79
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## FRONT DOOR HANDLE W/KEYS



These front door handles come with keys. To get your old handle off from a 1963 or earlier bus, remove the phillip screws in the door jam next to the handle. Now push the handle back towards the front of the bus and it will fall off. On 1964-1979 buses, you will need to pull off the door panel and use an allen wrench to remove the handle.

211 837 205	Left	-60
211 837 206	Right	-60
211 837 205D	Left	61-63
211 837 206D	Right	61-63
211 837 205N	Left or right	69-79
251 837 205	Left	80-83
251 837 206	Right	80-83

## FRONT DOOR HANDLE SEALS



This is the seal between the handle and the body of the bus. The door handle must be removed to replace them.

111 837 211	Pair	50-63
211 837 211A	Pair	64-67
211 837 211C	Pair	68-79
251 837 211	Pair	80-83

## FRONT DOOR HANDLE SPRINGS



This is the return spring used in the early Bus front door handles. If it is broken the handle will not go back to the closed position making it a sure sign you need a new one.

111 837 215	Spring	-60
211 837 215	Spring	61-63

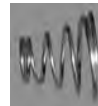
## INSIDE FRONT DOOR HANDLES



These handles open the front doors from the inside. To replace the handle on buses up to 1963, you have to push back the small plastic bezel. On the side of the handle, you will see a small pin. Use a small punch or a nail with the head removed to drive the pin out. We suggest you do this in a clean area because the pin usually flies out and you will want to be able to find it. Once the pin is out, wiggle the handle and it will come off. On buses 1964-1967, just take out the screw in the middle of the handle.

113 837 225	Pair	50-60
211 837 225BK	Black, w/o screw hole	60-63
211 837 225BG	Beige w/o screw hole	60-63
211 837 225ABG	Beige w/screw hole	64-67
211 837 225ABK	Black w/screw hole	64-67
N0128101	Pins for handles (4)	50-60

## DOOR HANDLE ANTI-RATTLE SPRINGS



These springs go behind the door panels to put tension on the door handle buffers. They go on with the large opening towards the handle. It takes two per bus.

111 837 229C	Pair	-67
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## DOOR CENTERING WEDGES



This wedge centers the door when you close it. If the wedge is worn out or broken, you'll need to replace it because the wedge keeps the door hinges from wearing out.

211 837 277 Pair 50-61

## INSIDE DOOR HANDLE COVER PLATES



cover plate.

This is the trim piece that goes around the inside front door handle. To remove the old one, use a small screw driver to peel out the finger plate. Under that plate you will see a phillips screw. Remove the screw and slide out the

113 837 239BBK	Black cover plate, pair	68
113 837 239BCM	Chrome cover plate, pair	68
311 837 247BK	Black finger plate, pair	68, 80-92

## DOOR LOCK KNOBS & COLLARS



These little knobs and collars go on the two front doors. To install them, unthread the old knob and just push the collar into the door and then thread the knob back on.

171 837 187	Knob, pair	68
171 837 355	Collar, pair	68
251 837 187A	Knob, pair	80-92
251 837 255	Collar, pair	80-92

## FRONT DOOR STRIKERS



The striker is what keeps the door closed, an absolute necessity to say the least. They are held in place by large phillips screws or allen screws. We suggest you use an impact driver to get the striker out. Note: Use masking tape to mark two sides of the old striker, so you will know where to set the new one.

211 837 295A	Left or Right	-63
211 837 295D	Left	64-71
211 837 296D	Right	64-71

## WINDOW FELT CHANNEL SETS



The front door windows slide in the felt channels. To install the felt channels, you will have to remove the window frame from the door and disassemble it. Note: There are two 10mm nuts up inside the door holding the frame down.

211 837 375A	Set w/notches	55-67
211 837 375B	Set w/out notches	55-67

## WINDOW FRAME TO DOOR BASE SEALS



This seal goes between the front window frame and the door base on buses up to 1967. To replace the seal, you will have to take the window frame out of the door. To take the frames out, locate the two phillips screws in the door jam, two 13mm headed bolts in the jam by the hinges and two more 13mm headed bolts under the door panel. Then there are two hidden 10mm nuts up in the door itself.

211 837 396	Pair	-67
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## WINDOW FELT CHANNEL SETS



This is the channel that the front door windows roll up into. In order to install them, you will have to take off the door panels and remove a lot of the "guts" from inside the door. If you are replacing these pieces, we suggest you also replace the channel piece that runs up along the vent wing.

111 837 439D	Pair	68-79
311 837 433A	Vent wing post, (pr)	68-79
111 837 361	Clips (12)	68-79
255 837 709	W/ chrome mldg, (pr)	80-92
281 837 709	W/o chrome mldg, (pr)	80-92
171 837 433A	Vent wing post, (pr)	80-92

## FRONT DOOR WINDOW SCRAPERS



The front door window rolls up and down between these two rubber seals. The outer scraper is very important because it keeps water out of the door, it's also the "most fun" to put in. No kidding, installing these seals are a real chore. Start by gutting the door. When installing these seals, check the little drain holes in the bottom of the door to make sure they're clear.

211 837 475	Inner left	68-79
211 837 476	Inner right	68-79
211 853 321	Outer left w/chrome	68-79
211 853 322	Outer right w/chrome	68-79
251 837 703	Inner left	80-92
251 837 703	Outer right	80-92
251 837 704	Outer left	80-92
251 837 704	Inner right	80-92
255 837 703	Outer right, w/chrome	80-92
255 837 704	Outer Left, w/chrome	80-92

## WINDOW REGULATORS



This is the mechanism that makes the window go up and down. The door will have to be taken apart to install the regulator.

211 837 501	Left	68-79
211 837 502	Right	68-79

## FRONT DOOR WINDOW LIFT SEALS



This rubber piece holds the front door window in it's sash. Without this seal, the window would be loose and rattle as you roll it up and down. Replacing this seal isn't much fun, the window needs to be taken out of the door.

831 837 565	Pair	80-92
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## FRONT DOOR WINDOW CRANKS



To replace the window crank, start by prying up the plastic covering. Under this cover you will find a phillips screw. Remove the screw and the handle will pop off. The vice grips you're using for a crank can now be returned to your tool box. The window cranks (#321 837 581), that fit the vanagon, will work on the 68 on buses and are heavier duty than the stock one for those years.

111 837 581J	Black	68-79
321 837 581	Black	68-92
321 837 581ABK	Black w/chrome	68-92

## FRONT DOOR / WINDOW CRANK BUFFERS



This plastic doughnut goes under the window crank or door handle to prevent the door panel from getting ripped. To replace the buffers, remove the handle first.

211 837 235BK	Black, pair	50-57
211 837 235GY	Grey, pair	50-57
211 837 235IV	Ivory, pair	50-57
211 837 235ABK	Black, pair	58-63
211 837 235AGY	Gray, pair	58-63
211 837 235AIV	Ivory, pair	58-63
111 837 595A	Black, pair	68-74
111 837 595A	Black, pair	80-92

## VENT WING SEALS



The vent wing seals on the front doors keep out the elements. They're a real chore to install. Start by taking the vent wing out and drilling out the rivet at the top. Replace the rubber seal and then put in a new rivet.

211 837 625	Left	50-67
211 837 626	Right	50-67
213 837 625	Left	68-79
213 837 626	Right	68-79
251 837 625	Stationary	80-92
255 837 625	Left w/chrome	80-92
255 837 626	Right w/chrome	80-92
255 837 625A	Left w/o chrome	80-92
255 837 626A	Right w/o chrome	80-92

## VENT WING FLAP SEALS



This seal goes on the back side of the front door vent wing. It fits in the window post so the vent wing glass seals against it.

211 837 629	Pair	55-67
241 837 465	Pair	68-79

## VENT WING LOCKS



These locks hold the vent wing closed. They are a "pain" to replace. Remove the glass and rubber, then use a 1/8" drill to remove the original rivets. Remove whatever is left of the old lock and install the new one. Using 1/8" pop rivets, install the head of the lock from the frame side. With a hammer and dolly, flatten what's left of the rivet on the latch side. Reinstall the glass and rubber. Note: The handle faces the front on buses to 1967.

113 837 639A	Left, chrome	54-67
113 837 640A	Right, chrome	54-67
113 837 639AHD	Left, heavy duty	54-67
113 837 640AHD	Right, heavy duty	54-67
211 837 639A	Left, black	54-67
211 837 640A	Right, black	54-67
311 837 657A	Left	68-79
311 837 658A	Right	68-79

## SAFARI FRICTION WASHERS



This nylon washer goes on the wing bolt to keep the bolt from chewing up the slide on the safari window. You should have two per slide.

211 837 659	Each	-67
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## SLIDING WINDOW LATCHES



This latch goes through the glass on the front door window. Replacing this latch is easy. Using a large screwdriver, remove the big screw. When installing, pay attention to the spring, keeping it in its slot. One latch style, that's not available new, is the one that bolts to the runner under the glass.

211 837 821A	Left	55-67
211 837 822A	Right	55-67

## TOP FRONT DOOR FRAME SEALS



This seal goes on the top of the front door frames on buses 1950-1967. The easy way to install them is to use dish soap on the seal so they slide right in.

211 837 835	Pair	50-54
211 837 835A	Pair	55-67

## SIDE CARGO DOOR REPAIR PANELS



These replacement pieces are for the bottom of the side cargo doors. Welding is required.

211 841 081	Outer bottom front door	55-67
211 841 081A	Inner bottom front door	55-67
211 841 091	Outer bottom rear door	55-67
211 841 091A	Inner bottom rear door	55-67
211 841 091B	Outer bottom sliding door	68-79

## SIDE STORAGE DOOR COVER AND SEAL



This is the chrome cover that goes over the lock on the side door of a single cab. The lock will need to be removed to install the cover and seal.

211 841 635	Lock cover	-66
211 841 639	Lock cover seal	-66

## INSIDE SIDE CARGO DOOR HANDLES



These handles open the side cargo doors from the inside. To remove the old one, pry the cap out of the center and remove the screw. On buses up to 1967, there is no cap.

211 841 641ABK	Black plastic	64-67
211 843 642A	Ivory	68-83
253 843 642BK	Deluxe black	80-83
253 843 642BN	Deluxe brown	80-83

## SIDE CARGO DOOR STOPS



These rubber bumpers go on the side doors to keep them from banging into the body on buses 1950-1967. They come with a stud, so they just screw in.

211 841 691A	4 Pcs.	50-61
211 841 691B	4 Pcs.	62-67

## SIDE CARGO DOOR SEALS



This seals the side cargo doors on buses up to 1967. They will have to be glued in. We suggest you use 3M super weatherstrip adhesive.

211 841 821	Set	50-67
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## SIDE CARGO DOOR STRAP



This strap keeps the side cargo doors from opening too far. They're held in place with a pin on the door and two large phillip screws on the jam.

211 841 823A	Black	-67
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## REAR SIDE CARGO DOOR SEAL



This is the seal around the third door of a double cab. It must be glued in. We suggest you use 3M super weatherstrip adhesive.

261 841 829	Double cab	58-67
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## OUTSIDE SLIDING DOOR HANDLES



This handle opens the side sliding door on Vanagons.

211 843 703P	Handle	69-79
251 843 704E	Handle	80-84

## SIDE SLIDING DOOR SEALS



Seals the side sliding door on buses 1968 on. They need to be glued in place. We use 3M super weatherstrip adhesive.

211 843 792B	Right	68-79
251 843 792B	Right	80-92

## RAIL COVER BEADING SIDE DOOR



This beading goes between the body and the rail cover that hides the arm for the sliding door. To replace the beading, you will need to loosen the cover, pull the old stuff out and slide the new piece in.

281 843 799	Beading	68-79
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## FRONT WINDOW REPAIR CHANNELS



This repair channel is used to fix the rusted area of the front window. Welding is required. On the 55-67 buses inner means towards the center post and outer means towards the door jam.

211 845 100	Inner	55-67
211 845 101	Outer	55-67
211 845 102L	Left w/wiper shaft hole	55-67
211 845 102R	Right w/wiper shaft hole	55-67
211 845 110	Outer	68-79
211 845 110B	Outer with bulge	68-79
211 845 111	Inner lip only	68-79

## WINDSHIELDS



These windshields are cut from safety glass as required by law. Note: For instructions see FRONT WINDOW SEAL.

211 845 101E	Left or Right	55-67
211 845 104B	Left or Right OEM Safari	55-67
211 845 103BWG	Left or Right WG Safari	55-67

## FRONT WINDOW SEALS



This seal goes around the front window(s). To remove the old glass, use a fixed-bladed knife. Stick the knife between the rubber and glass on the outside of the bus. Now cut the rubber until you feel the point of the knife hit metal. Cut

all the way around, until you have cut the rubber in half. Peel the rubber off and slowly push the glass out from the inside. Make sure someone is there to catch it. Install the new rubber with the seam on the top and in the middle. Do not use any kind of lubricant, as it will cause the glass to separate. Wrap a piece of 14 gauge wire in the groove that holds the window to the bus, overlapping the ends on the bottom at the center. Clean the body area and do any repairs needed. We use dish soap as a lubricant, but only between the rubber and body metal, never between the rubber and the glass. Smear the soap from the lip to the outside edge. At this point, grab a friend to help you. Place the window in the bus from the outside with the two ends of the wire inside the bus. Push the window in until the rubber hits the lip. While your friend holds the glass from the outside in place, get into the bus and pull one end of the wire a little one way and then the other end a little way. Keep doing this until you reach the top. If you miss, push the window out and start over. On 68 and later buses it is nice to have two friends hold the window. After the first one you'll be surprised how easy it is. If you have a lot of windows to do, we offer a tool that makes it even easier.

211 845 121A	Left or right	55-67
211 845 121DAM	W/chrome molding groove	68-79
211 845 121DCA	W/o chrome molding groove	68-79
251 845 121AM	W/ chrome molding groove	80-92
251 845 121CA	W/o chrome molding groove	80-92

## FRONT DOOR SLIDING WINDOW SEALS



This seal fits in the C channel of the front door frame of buses up to 1967. We suggest you glue this seal in with 3M super weatherstrip adhesive.

211 845 231	Pair	50-67
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## INNER VENT WING SEAL



This seal goes between the vent wing glass and the metal frame that it sits in. The seal comes as a roll and is very hard to install. First get the glass out without breaking it. Now cut off a strip of this seal and fold it around the glass. Press the glass back into the frame and then cut off the excess with a razor blade. This roll comes with enough to do two windows.

221 845 295	Roll	55-79
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## SIDE WINDOW GLASS



This is replacement glass for missing or broken ones. See FRONT WINDOW SEAL on how to install.

221 845 301A	Side stationary	-67
221 845 305A	Pop out window	-67

## STATIONARY SIDE WINDOW SEAL



This seal goes around the side window that is stationary (does not have a frame). Note: Removal and replacement are explained under FRONT WINDOW SEAL.

221 845 321	Each	50-67
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## SIDE POPOUT WINDOW SEALS



These are the replacement seals for the side popout windows on buses up to 1967. It takes a lot of work to replace the seal between the frame and the glass. The frame will need to be split. Watch out for the little screws that hold the frame together, they're usually rusted in. The seal that goes on the body will have to be glued in.

221 845 325B	Frame to glass	50-67
221 847 131A	Outside of frame to body	50-67
221 847 135A	Body to frame	50-67
N109051	Screw	50-67

## SIDE WINDOW REPAIR CHANNELS



These repair channels are used to fix rusted areas of the side windows. Welding is required.

221 845 300	Center side	68-79
221 845 301	Rear side	68-79

## MIDDLE SIDE WINDOW SEALS



These window seals are on buses 1968 on. See FRONT WINDOW SEAL for how to take the old seal out and install the new one.

224 845 321CL	W/o vent w/o chrome	68-79
224 845 322A	W/o vent w/chrome	68-79
221 845 285CCL	W/vent w/o chrome	68-79
221 845 285CAM	W/vent w/chrome	68-79
251 845 321AM	W/chrome	80-92

## REAR SIDE WINDOW SEALS



These window seals are on the rear side of buses 1968 on. See FRONT WINDOW SEAL on how to take the old seal out and install the new one.

224 845 321CL	W/o vent w/o chrome	68-79
224 845 321AM	W/o vent w/chrome	68-79
221 845 285CCL	W/vent w/o chrome	68-79
221 845 343AM	W/vent w/chrome	68-79
251 845 341AM	W/chrome	80-92
251 845 341CL	W/o chrome	80-92

## CORNER WINDOW SEALS



This seal goes around the corner window of buses up to 1963. Note: See FRONT WINDOW SEAL for installation.

241 845 421	Pair	50-63
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## REAR WINDOW SEALS



This seal is for the rear window. Be careful putting the window back in, as it is a very tight fit. Note: For instructions see FRONT WINDOW SEAL.

211 845 521	(Truck 55-65)	50-63
211 845 521A	23 window or delux Kombi	52-63
261 845 521	Truck	52-65
211 845 521CCL	W/o chrome groove	64-79
261 845 521A	Truck	66-67
261 845 521B	Truck	68-79
211 845 521CAM	W/chrome groove	68-79
251 845 521AM	W/chrome groove	80-92
251 845 521CA	W/o chrome groove	80-92

## SKYSIGHT REPAIR PANELS



This is a great piece for fixing the rusted out section of the roof, where the skysight seals go. Welding required.

241 845 600	Repair panel	-67
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## SKYSIGHT SEALS



SEAL.

This seal goes around the small roof windows of 21 and 23 window buses up to 1967. Be careful putting them back in, as it's a really tight fit. Note: For instructions see FRONT WINDOW

241 845 621	21 and 23 buses only	50-67
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## SIDE POPOUT WINDOW FRAME LATCHES



These are the latches that hold the popout frame out. There are two styles, long or short. The long ones are the spoon style.

221 847 081C	Long, spoon style	-67
221 847 081D	Short	-67

## SIDE POPOUT WINDOW FRAME



These are the new replacement popout window frames. They don't come with glass so use your old glass. It's a good idea to buy new seals at this time and get the extra little screws you're missing to hold them in.

221 847 105A	Raw frame only	55-67
N109051	Popout window screw 3.5X5	55-67
221 809 179	Hinge only, welding required	55-67
221 845 305A	Pop out window glass	55-67

## ONE EYED DUCK



The one eyed duck is the window wiper holder. It's mounted in the middle of buses with safari windows. We don't know the correct name for this part, but it sure looks like the head of a duck with one eye.

261 847 231	Each	-67
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## SAFARI WELD IN TABS



These are the brackets that are welded to the window posts for safari windows.

211 847 431	Side, pair	-67
211 847 441	Center	-67

## INNER SAFARI SEAL GLASS TO FRAME



This seal is for factory safaris only. It goes between the glass and the frame. The windows will have to be taken apart to install.

211 847 439A	Factory safaris, pair	55-67
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## SAFARI SLIDE



This chrome arm holds the safari window open. You will need to rivet them on.

211 847 491	Slide	-67
211 847 495	Rivet	55-67

## SAFARI LATCHES



This latch screws onto the safari window to lock it closed. They're made with a steel post.

211 847 515	OEM, handle faces right	55-67
211 847 515WG	WG, handle faces right	55-67
211 847 516	OEM, handle faces left	55-67
211 847 516WG	WG, handle faces left	55-67
211 847 531	OEM style base gasket	55-67

## SAFARI DASH TABS



These chrome tabs screw to the dash. The safari windows latch against them. The short tabs mount in the middle and the long tabs on the outside.

211 847 571B	Short	-67
211 847 573B	Tall	-67

## SIDE WINDOWS VENT WING SEALS



This seal goes around the vent wing in the middle or rear side of your bus. They're a real pain to put in. First you will need to take out the window behind the vent wing, and then take out the vent wing in its frame. You can then start the "fight" of putting the seal in.

221 847 673A	Left or right	68-79
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## CHROME WINDOW MOLDINGS



These chrome moldings go around the windows and are there just for looks. They're a real pain to put in and need to be installed in the seal before you put the window back in the car.

241 853 325	Front window	68-79
241 853 335	Middle side w/o vent	68-79
241 853 345	Middle side w/vent	68-79
241 853 347	Rear side w/vent left	68-79
241 853 348	Rear side w/vent right	68-79
241 853 353	Rear side w/o vent left	68-79
241 853 354	Rear side w/o vent right	68-79
241 853 355	Rear window	68-79
255 853 305	Front window	80-92
255 853 325	Left front door	80-92
255 853 326	Right front door	80-92
255 853 345	Middle side window	80-92
255 853 345A	Rear side window	80-92
255 853 305	Rear window	80-92

## REAR JAIL BARS



Jail bars (also known as luggage bars) are used to protect the glass window from any luggage or cargo you may have rattling around in the rear of the bus. These are aluminum bars with aluminum caps.

241 853 401A	Jail bars	64-67
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## DELUXE TRIM KIT



These polished replacement kits are designed to fit the original contour molding profile. Colored inserts are sold separately.

241 898 001	Kit	55-63
241 898 002	Kit	64-67

## FRONT EMBLEMS



This part is the pride of the car and one of the most likely items to be stolen.

211 853 601A	Raw	55-67
241 853 601A	Chrome	55-67
N120801	Front emblem clip, 3 pcs.	-67
211 853 601B	Chrome	68-71
211 853 615	Clips, 4 pcs.	68-71
211 853 601E	Chrome	72-79
211 853 619	Clips, 4 pcs.	72-79
251 853 601	Chrome 4.92"	80-92
321 852 601	Chrome 3.75"	80-88

## REAR ENGINE INTAKE GRILLS



These plastic grills located just behind the rear window on each side of a Vanagon are there to take in air. They're held in place with two phillips screws.

251 853 681	Left	80-92
251 853 682	Right	80-92

## SCRIPTS



This is the script on the back cargo lid of your bus. To remove the old one, you must take off the inside panel. Twist the keepers that hold it on and take it off. To put it on, do the reverse.

211 853 687K	Volkswagen	63-72
321 853 675B	Wolfsburg Edition red & white	80-92

## FRONT AIR GRILL PIN & CLIP



These pins and clips hold the front plastic grill in place on a Vanagon.

251 853 731	Set	80-92
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## GLOVE BOX LOCK



This lock holds the glove box closed on a Vanagon. It's keyed, so you can lock it. The lock is held in place with a clip. To remove the lock just pull the clip and out it comes.

133 857 119	Clip	80-92
133 857 131B	Lock w/keys	80-92

## FUEL DOOR STOPS



These rubber stops keep the gas door from slamming into the body. To install them just pull them through the holes with a pair of pliers.

111 857 145A	Pair	55-79
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## INSIDE REAR VIEW MIRROR



This is the mirror you use to keep an eye on the kids in the back seat or to check for flashing lights behind you.

241 857 501	Chrome	55-64
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## OUTSIDE MIRRORS



These mirrors mount outside on the doors or door hinges so you can see what's behind you. When installing mirrors on 55-67 bus, leave the door closed.

211 857 513	Round	50-67
211 857 527A	Left arm for round mirror	55-67
211 857 528A	Right arm for round mirror	55-67
211 857 545	Clamp for round mirror	55-67
211 857 513A	Elephant ear style	55-67
211 857 515S	Replacement seals elephant	55-67
211 857 527	Elephant ear, arm only	55-67
211 857 527AOS	Elephant ear, arm only OS	55-67
211 857 513H	Left	68-79
211 857 514H	Right	68-79
111 857 543	Base seal	68-79
251 857 513	Left black	80-92
251 857 514	Right black	80-92

## SUNVISORS



These visors pull down to keep the sun out of your eyes. Now is a good time to check the clips too.

211 857 551AWH	White, pair	55-67
211 857 551ABK	Black, pair	55-67
221 857 551AWH	White, pair	68-79
221 857 551ABK	Black, pair	68-79
255 857 552B	Gray w/pass side mirror	80-92

## SUNVISOR CLIPS



These clips hold the sunvisors up. After awhile broken ones will drive you nuts, not to mention the visor will eventually break. Clips are a lot cheaper than visors.

111 857 561WH	White, pair	68-79
111 857 561BK	Black, pair	68-79
251 857 561A	White, pair	80-92

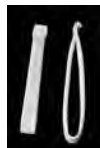
## ASSIST HANDLE



This handle is mounted on the passenger side windshield post. It is used as an assist to get in and out of the bus. To remove the main screws that hold it on, you must pry off the two covers with a small screwdriver.

251 857 607	Black, pair	80-92
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## ASSIST STRAPS



This is a strap, not a handle. It's mounted on the door post to help you get in and out of the back of the bus. Remove the strap by prying up the cover to get to the main screws holding it on.

113 857 611EBK	Black, pair	80-92
113 857 611EWH	White, pair	80-92

## ROUND COAT HOOK



This button-looking piece is mounted in the back. It's there to hang stuff on. You have to pop the center cap out to get to the screw that holds it on.

255 857 629	Coat hook	67-92
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## ASSIST STRAP COVERS



This cover hides the screws on the assist straps. They just pop on and off.

113 857 635CBK	Black, pair	80-83
113 857 635CWH	White, pair	80-83

## DASH GRAB HANDLES



Also known as the "oh crap" bar. It's held in place by two 13mm nuts

211 857 641A	Gray hdl, blk escutcheons	55-67
211 857 641B	Gray hdl, gy escutcheons	55-67

## SEAT BELTS



It's the law and good idea to have seat belts. These belts come with a hardware kit to mount them.

111 857 704BK	Black, lap belt	-67
111 857 704GY	Gray, lap belt	-67
111 857 704TN	Tan, lap belt	-67
111 857 704RD	Red, lap belt	-67
111 857 706BK	3pt. shoulder black	68-74
111 857 706GY	3pt. shoulder gray	68-74
111 857 706RD	3pt. shoulder red	68-74
111 857 706TN	3pt. shoulder tan	68-74
111 857 707BK	3pt. retractable black	75-79

## SEAT BELT ANCHOR COVER



This cover hides the seat belt anchor bolt at your shoulder belt. They just pop on and off.

171 857 719	Black, pair	80-84
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## HOOKS FOR SHOULDER BELT



The shoulder belt hook mounts on the door post and holds the front shoulder belt.

111 857 723ABK	Black, pair	68-74
111 857 723AWH	White, pair	68-74

## DOOR PANELS



These are the interior panels of a bus or truck. We could write a book on this subject alone. The part numbers listed here are just the basic number. When you place your order, you will be asked for the color and type of material you want. On buses up to 1967, we can not get the original material. The drivers side panel on all buses, except trucks, comes in three pieces, instead of the one giant original piece. Brought to you proudly by TMI.

211 863 010	Kit	55-61
261 863 010	Kit, truck	58-61
211 863 011	Kit	61-63
261 863 011	Kit, truck	61-63
211 863 012	Kit	64-67
261 863 012	Kit, truck	64-67
221 863 010	Kit	68-70
261 863 013	Kit, truck	68-70
221 863 011	Kit	71-76
221 863 012	Kit	77-79
261 863 014	Kit, truck	71-79
211 863 111	Kick panels	55-63
211 863 112	Kick panels	64-67
211 863 113	Kick panels	68-70
211 863 114	Kick panels	71-79
261 863 111F	Kick panels painted gray	64-67
261 863 161C	Front door panels painted gy	61-67
211 863 160	Front door panels	55-61
211 863 161	Front door panels	62-67
211 863 162	Front door panels	68-79

## CARPET KITS



We personally like the quality of these carpet kits. The part numbers are just the basic numbers. We will need to know the color and type of material you want. Please call for pricing. Brought to you proudly by TMI.

221 863 019	Bench seat, 9pc	55-64
241 863 019	Walk through, 11pc	55-64
221 863 020	Bench seat, 9pc	65-67
241 863 020	Walk through, 8pc	65-67
221 863 021	Bench seat, 8pc	68-72
241 863 021	Walk through, 10pc	68-72
241 863 022	Walk through, 9pc	73-79

## EMERGENCY BRAKE BOOT



This boot goes over the E-brake handle to hide the cables. To put the boot on, just slide it over the handle. On 68 and later buses, you will need to partially dismantle the handle to get it on.

211 863 341	Boot	50-79
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## FRONT FLOOR MATS



This rubber mat goes on the front floor. Before laying the mat down, we suggest you do some rust prevention to the floor.

211 863 711A	Black	55-58
241 863 711E	Black	59-67
211 863 711D	Black	68-72
211 863 711G	Black	73-79

## CARGO FLOOR MATS



This rubber mat goes on the rear floor. We suggest you do some rust prevention to the floor before laying the mat down.

211 863 731	Black	-67
265 863 731	Black Double cab	-67

## FRONT DOOR PULLS



This is the handle you use to pull the front door closed.

211 867 161BG	Beige, pair	62-67
211 867 161GY	Gray, pair	62-67
211 867 161IV	Ivory, pair	62-67
241 867 161B	Black	68-79

## DOOR PANEL CLIPS



These clips hold on the door panels. Some of the 1967 and earlier buses used a screw instead of a clip.

N113672	Beauty screw, 100 Pcs.	-67
N0143893	Clip	68-92
113 857 219A	Boot for clip	68-92

## HEADLINERS



This is the vinyl covering the inside roof and sides of the bus. We suggest you take it to a professional for installation. The headliner installation is a difficult job and it takes a heat gun to get the wrinkles out. The part numbers, you see here, are just the basic numbers. We will need to know the color and type of material you want. Please call for pricing. Brought to you proudly by TMI.

211 867 500	Deluxe Kombi	55-63
211 867 501	Deluxe Kombi	64-67
211 867 502	Kombi	68-71
211 867 503	Kombi	72-79
221 867 500	W/sunroof	55-63
221 867 501	W/sunroof	64-67
221 867 502	W/sunroof	68-72
221 867 503	W/sunroof	73-74
221 867 504	W/sunroof	75-79
261 867 501	Single cab	68-74
265 867 501	Double cab	68-74
211 867 571WH	Pinch welt white	55-67

## REAR CARGO DOOR HINGE COVERS



These cover the rear cargo door hinges. They're held in with phillips screws.

211 867 530	Pair	55-67
211 867 530A	Pair	68-79

## SUNROOF COVER



This is the "top" cover for 21 and 23 window sunroof buses. The part numbers are just the basic numbers. You will need to tell us the color and kind of material you want. It's a chore putting these covers on, so be sure to follow the instructions carefully, or better yet, take it to a professional. Brought to you proudly by TMI.

225 875 575	Sunroof cover	51-67
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## SUNROOF PARTS



As of now, these are all the parts for sunroof buses that we can get our hands on. When taking the sunroof apart, pay close attention, so you can get it back together again.

225 877 321	Rag top sliders (kit)	-67
313 877 407	Gear	68-79
253 877 453	Handle	68-83
253 877 349	Seal on roof section	80-83
253 877 453KIT	Handle kit	68-83

## SEAT PADDING



This padding sits on top of the springs in the seat. It's made out of foam, not horse hair like the original padding. Before we lay the padding down, we take a chunk of old carpet and lay it face down on the springs. Then we place the pad on top of the carpet. This keeps the springs from chewing up the pad. If you are ordering seat covers, it's a good idea to check your padding. Brought to you proudly by TMI.

211 881 369	Full bench	50-62
211 883 369	2/3 middle	50-79
211 885 369	Rear	50-79
241 881 369	Bucket	62-67
261 881 369	1/3 front	63-76
261 881 370	2/3 front	63-76
211 881 375	Bucket	68-76

## FRONT SEAT COVERS



Like the door panels, seat covers are a long subject; so here's the basics. The seat covers are designed as replacements, so you must remove any old material on the seat. If you need to, repad the seat first and then slip the new cover on and hog ring the bottom. We personally like the quality of TMI covers. The part numbers listed are just the basic numbers. We'll also need to know the color and type of material you want. Please call for pricing. Brought to you proudly by TMI.

211 881 404	Full bench	50-62
261 881 403	Full bench truck	59-62
211 881 403	Bucket, pair	62-67
261 881 404	1/3 2/3	63-67
221 881 405	Bucket, pair	68-73
261 881 405	1/3 2/3	68-73
221 881 406	Bucket, pair	74-76
261 881 406	1/3 2/3	74-76

## HEAD REST COVERS



These are covers for the seat headrests. We will need to know your choice of color and material. Brought to you proudly by TMI.

211 881 715	Pair	74-76
211 881 717A	Pair	77-79

## FRONT SEAT SHOCK PAD BASE



Rubber stops for the front seats to rest on.

211 881 895A	All,(4)	50-67
211 881 865A	Backrest stop, 1/3-2/3 or buckets (4)	50-67

## MIDDLE SEAT COVERS



These covers are designed to replace the old covers, so any old material must be removed first. Repad the seat if it's needed, and then slip the new cover on and hog ring the bottom. We really like the quality of these covers. The part numbers listed are just the basic numbers. We will also need to know the color and type of material that you want.

Please call for pricing. Brought to you proudly by TMI.

211 883 405	2/3	50-73
211 883 406	2/3	74-79
241 883 404	Full w/fold	60-67
241 883 405	Full w/fold	68-73
241 883 406	Full w/fold	74-79

## MIDDLE & REAR SEAT FLOOR MOUNTS



When you mount the middle seat, you'll want the rubber mat down and the bolts in the key slots first. Then place the mounting plates into the holes of the mat. Now place the seat on the plates and slide the hooks over the bolts and thread the nuts down and tighten them. The rear seat doesn't sit on a mat so you won't use the mounting plates, just the hooks and nuts.

111 881 285	Clamp
111 881 281	Wing Nut
221 883 861A	Plate
N161371	T bolt

## REAR SEAT COVERS



These covers are made to replace the old seat covers, so take off any material you have on the seat now. Repad if needed, slip the cover on, and hog ring the bottom. We really like the quality of TMI covers. The part numbers are just the basic numbers so we'll also need to know the color and type of material you want. Please call for pricing.

Brought to you proudly by TMI.

211 885 805	Bus	50-73
221 885 805	Bus	74-79
261 885 805	Truck	59-73

## ALTERNATOR OR GENERATOR PULLEY



This is the pulley on the generator that holds the belt. When replacing the pulley, make sure you have a total of eight shims. Place the pulley half with the keyway in it, onto the generator. Install three shims, the belt and the other pulley half. Now place the other five shims on and then the bell and then the nut. Tighten the nut, letting the belt slip and

the engine turn. Once the belt has ridden all the way up, use a screwdriver in the slot and tighten the nut. Now check the tension of the belt. If it's too loose, take out a shim in the middle and add it to the outside. If it's too tight, add one from the outside to the middle. Note: If you run the belt too tight you will ruin the bearings in the generator. It is imperative you have a total of eight shims, otherwise you will be throwing pulleys and buying a new generator.

042 903 109ABR	6v Brazilian	-66
043 903 109BR	12v Brazilian	67-71
043 903 109GR	12v German	67-71
111 903 181	Nut for pulley	-71
N127051	Woodruff key	All

## PULLEY SHIMS



Probably the most common cause of generator pulleys coming apart is the shortage of shims. It is very important that you have a total of eight shims. Whatever shims you don't use between the pulley halves, you have to use under the bell. If you don't, you're going to have problems, because even if the pulley appears tight, it can't tighten up and it will fly apart. Read GENERATOR PULLEY for more instructions.

111 903 131A	50mm	-71
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## FAN BELTS



This is the belt that turns the generator. We've found German belts are the only belts with the correct width. Wider belts tend to ruin the generator pulley. Note: See GENERATOR PULLEY for instructions. Make sure you always carry a spare belt and the tools to change it.

111 903 137B	10 X 900mm	40hp
111 903 137D	9.5 X 905mm	1300-1600
021 903 137A	10 X 965	72-79
070 903 137	10 X 1165	80-83

## GENERATOR STRAPS



The generator strap goes around the generator and holds the generator in the stand.

113 903 141A	6v	-66
113 903 141B	12v	67-71

## GENERATOR BEARINGS AND BRUSHES



Replacing bearings will require you to take the generator apart, so pay close attention to where all the parts go. The brushes can be replaced with the generator still on the bus. The bottom brush is tricky, so lay a rag under the opening in case you drop the screw.

111 903 221A	Bearings
111 903 515A	6v brushes (pr)
113 903 515	12v brushes (pr)

## DISTRIBUTOR CLAMP



This clamp goes around the distributor. It holds the distributor in the case and keeps it from turning once the timing has been set. This is really important; before you install the distributor, bolt the clamp down and make sure it sits flat. If it doesn't, bend the clamp until it does.

113 905 250	Clamp	-71
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## DISTRIBUTOR O-RING



This o-ring goes around the shaft of the distributor. If you're replacing the distributor, you should replace the o-ring. Stretch the o-ring around the shaft and smear some motor oil on it. Now put the distributor in the case, it'll be a tight fit.

111 905 261	O-Ring	All
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## SPARK PLUG WIRE HOLDERS



These plastic plugs go into the fan shroud to hold the spark plug wires off the block and heat risers. It takes three holders per engine on upright motors. Note: When pushing the wires into the holders, first put some oil on the wire. If you don't oil them, you'll probably rip the wire when rolling them into the holder.

113 905 451A	2 wire	61-79
113 905 451	3 wire	61-79

## IGNITION SWITCHES



On the back of the switch, you'll normally see three numbers. Number 30 (red wire) is the main power. Number 15 (black wire) is the feed to the fuse box. It turns on the coil and anything else that comes on when the key is turned on. Number 50 (red or red and black) is the wire that engages the starter. On 1968 and later buses, it's kind of tricky to get them out, so give us a call and we'll try to talk you through it.

211 905 811C	W/keys	55-67
113 905 853A	Lock cylinder w/keys	68-70
311 905 865A	Electrical part	68-70
111 905 865F	Electrical part	71-73
191 905 855	Lock cylinder w/keys	71-79
111 905 865L	Electrical part	74-
251 905 855	Lock cylinder w/keys	80-91

## FUEL PUMP RELAYS



This is what supplies power to the fuel pump. We suggest you take your car to a professional to see if your relay is good or not before ordering a new one. Relays are not cheap and not returnable.

021 906 059	Relay	75-78
0332514121	Relay	79

## FUEL TANK SENDING UNITS



The sending unit registers the fuel level on the gauge. There is no such thing as 6v or 12v, as they have a floating ground. Before replacing this unit, take the wire off of it and hold it to ground (a bolt or metal on the body). CAUTION: WHENEVER WORKING AROUND LIVE WIRES AND GAS BE VERY, VERY CAREFUL. Turn the key on. If the gauge goes to full, the sending unit is bad. If it doesn't, the gauge is bad.

271 919 051B		62-67
211 919 051		68-72
211 919 051A		73-79
251 919 051E		80-87
113 919 133	Std seal	62-79

## OIL PRESSURE SWITCH



This switch, located on the side of the block, turns the idiot light out on the dash. If the oil pressure drops to 3 to 5 lbs, the light will come back on. If the light should come on while you're driving, pull over and shut the engine off as soon as possible, because you're doing damage to your engine. These switches are famous for leaking after a year or so. Note: Don't over tighten.

021 919 081B		50-83
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## COOLANT SENSOR



This tells you when the coolant is low. A must for water cooled cars.

251 919 372		83-91
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## FUSE BOX CLIP



This clip holds the fuse box in place. If you don't have one get one. We see more electrical problems from fuse boxes not mounted correctly.

111 937 391		62-67
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## FUSE BOXES



This is a replacement fuse box. Be sure you know what you are doing and have a good understanding of wiring before attempting this task. It is very important that this box is clipped in place, because a hanging fuse box will insure major problems.

111 937 505A	8 panel box	62-67
181 937 555A	Cover	62-67
181 937 555	Cover	68-69
111 937 505M	Box	80-85
111 937 555D	Cover	80-85

## HEADLIGHT BUCKETS



This is the bucket your headlight bulb fits into. Used ones are fine, as long as they're not rusted out or have stripped adjustment screws.

111 941 037C	W/o bulb	55-67
111 941 037Q	W/o bulb, quality unit	55-67
141 941 041	W/o bulb	68-79
111 941 195	Bucket screws (pr)	-67
111 941 197	Bucket screw spacers (pr)	-67

## HEADLIGHT COVER (GLASS)



This glass cover goes over the headlight on buses 1967 and earlier. When replacing the glass, it's a good idea to buy new seals.

111 941 115H	Cover	-67
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## HEADLIGHT SEALS



These seals go in the headlight buckets of buses up to 1967. The inner one is fun to put on, as it needs to be stretched around the glass. It goes on the opposite way you may think it should; the two square lips face outward.

111 941 119	Inner glass to ring, pair	-67
111 941 119Q	Quality Inner glass to ring, pair	-67
111 941 191	Outer bucket to body, pair	-67
111 941 191Q	Quality Outer bucket/body, pair	-67

## HEADLIGHT RINGS



This metal ring goes around the headlight.

111 941 111	Chrome screws 4 o'clock & 8	-67
111 941 111HD	Chrome screws 4 o'clock & 8HD	-67
211 941 111	Chrome screws 2 o'clock & 8	-67
211 941 111HD	Chrome screws 2 o'clock & 8HD	-67
311 941 195A	Ring screw	68-79
311 941 177	Chrome	68-79
311 941 177H	Hella brand	68-79

## HEADLIGHT BUCKET CLIP



This clip holds the headlight in the bucket, as well as, holding the headlight ring to the bucket. The main reason for replacing them is you've lost some of the old clips. When putting new ones on, we suggest you wear safety glasses, as they tend to go flying.

111 941 125	Clip	-67
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## HEADLIGHT BULBS



These are a sealed unit. Changing the headlight bulb on buses up to 1967 isn't much fun because you'll have to take the bucket out and remove the clips to replace it. On buses 1968-1979, it's much easier. Remove the headlight ring and take out the three small phillips screw holding the headlight to the bucket..

111 941 161A	6 volt 7" round	-66
111 941 261A	12 volt 7" round	-67



## HEADLIGHT WIRING PLUG



This plugs into the backside of your headlight. The usual reason for replacing it, is because someone has cut it off and lost it.

111 941 341	Each	All
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## BACKUP LIGHT LENS & SEALS



This is the replacement lens and seal for the backup lights.

111 941 371	Lens, plastic	67-71
211 941 323	Seal, glass to ring (pr)	67-71

## BACKUP LIGHT SWITCHES



This switch, located on the transmission towards the nose cone, turns on the backup lights. To check the switch, pull off both wires and connect them together. Now turn on the key and have a friend check to see if the backup lights come on. If the lights come on, the switch is bad. If the lights don't come on, it's most likely a problem with the wire that comes from the positive side of the coil.

211 941 521	Switch	67-79
251 941 521	Switch	80-91

## HEADLIGHT SWITCHES



This switch turns on the headlights, as well as, dims the dash lights. On buses 1968-1979, it takes a special tool to get the switch out of the dash. If you don't have this tool you can make one out of an old stiff putty knife. Grind the end round to the radius of a quarter. Then grind a slot up the middle of the radius 1/4" wide and about 3/4" deep. Take the knob off the switch by unthreading it. Now you should be able to see the aluminum nut that you will have to unscrew with your new tool. Note: DISCONNECT THE BATTERY BEFORE WORKING ON THE SWITCH. The red wires on the switch are hot all the time and you could easily fry one of the main wires that run through the bus. Just pull one wire off at a time, paying close attention to the number on each terminal so you can install the new switch correctly.

311 941 531A	Switch	68-70
211 941 531E	Switch	71-79
251 941 531M	Switch	80-92

## DASH KNOBS



These are the knobs for the wiper and light switches on the dash. They just unscrew and screw back on.

113 941 541BK	4mm black wiper switch	55-66
113 941 541IV	4mm ivory wiper switch	55-66
113 941 541GY	4mm gray wiper switch	55-66
111 955 541BK	5mm black light switch	55-66
111 955 541IV	5mm ivory light switch	55-66
111 955 541GY	5mm gray light switch	55-66
111 941 541B	Headlight knob	68-79
111 941 543F	Cap for emergency knob	68-79
111 941 543G	Cap for headlight knob	68-79
113 955 549A	Cap for wiper knob	68-79

## DIMMER SWITCH



This switches the high beam to low beam. Here's how to check your switch out using a test light. Turn your headlights on and use your test light to probe the middle wire; you should have power. If you do, probe the wire on one end and push the switch. This wire should now have power. If it has power the switch is good and not the problem; check your fuses. If it doesn't have power, the switch is bad or wired wrong. The wire that comes from the headlight switch goes in the middle. What is supposed to happen is that power goes into the middle and then is transferred to one side or the other.

111 941 561B	Floor switch	-65
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## HEADLIGHT RELAY



This relay switches high beam to low beam. To test, find the relay and the S terminal which should have a brown wire with a white stripe. Turn your headlights on. Run a jumper wire to the S terminal and strike it to a good ground. You should hear the relay click and the headlights should change beams. DO NOT HOLD THE WIRE ON THE GROUND; JUST TAP IT ON THE GROUND. If nothing happens, the relay is bad. If it works then the switch in the turn signal is bad. One last note; if your old relay has only four terminals, you will need to call for further instructions. All new relays come with five terminals and require a jumper wire from terminal #56 to terminal #30.

111 941 583A	12v	67-84
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## LICENSE PLATE LIGHT LENS & SEALS



This lens and seal is held in by two small phillip screws.

211 943 121C	Lens	58-67
211 943 131C	Seal	58-71
211 943 131D	Seal	72-79
251 953 121	Lens, pair	80-92

## LICENSE PLATE LIGHT BULB HOLDER



This holds the bulb for the license plate in the engine deck lid. It just clips into place. The boot keeps water and dirt out of the electrical connections.

211 943 161C	Bulb holder	59-67
211 943 165	Boot	59-67

## SIDE MARKER LENS



These are the lenses you see in the front and rear on the side of the bus. The rear marker has a light in it, but the front marker does not.

211 945 119A	Front w/silver rim	70-76
211 945 119B	Front w/black rim	77-79
211 945 363A	Rear w/silver rim	70-76
211 945 363B	Rear w/black rim	77-79
321 945 361A		80-92

## TAIL LIGHT BUCKETS



Tail light buckets are the bulb holders for the rear tail lights, brake lights, and turn signal lights.

211 945 237B	W/lens	57-61
211 945 237K	W/lens	62-71
211 945 237JA	W/lens Euro style	62-71
211 945 241RK	W/lens	72-79
251 945 111A	W/lens, left	80-92
251 945 112A	W/lens, right	80-92

## TAIL LIGHT LENS & RINGS



These are the rear lenses for the tail light, brake light and turn signal light. They are held in place with two phillips screws. The rings are the decorative chrome piece that goes around the lens.

211 945 241A	Plastic lens	57-61
211 945 241G	Lens	62-71
211 945 241GA	Euro style	62-71
211 945 117B	Rings (ea)	62-71
211 945 241R	Lens	72-79

## TAIL LIGHT SEALS



This seal goes between the tail light and the body of the bus.

211 945 245	Pair	57-61
211 945 245A	Pair	62-71
411 945 235	Pair	72-79

## CENTER BRAKE LIGHT LENS



This is the cool rear brake light that came on 50-56 buses. It is held in by two small phillips screws.

211 945 331	Plastic	50-56
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## SIDE MARKER BULB HOLDER



This plastic bulb holder fits on the side in the rear of the bus. Please check SIDE MARKER LENS for the correct lens for your bus.

211 945 351A	Rear	70-79
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## BRAKE LIGHT SWITCHES & BOOTS



When you apply the brakes, the brake light switch activates the brake lights. To check your switch, start by locating the master cylinder under the front floor. Pull off the black wires with the red stripe and hook them together. Note: Later model buses have a plastic plug and you'll need to rig up a jumper wire. Turn the key to the on position and have a friend see if the brakes lights come on. If they do, the switch or switches are bad. If they don't,

you have another problem and you will need to start tracing wires with a test light.

113 945 515H	2 prong	-69
411 941 539	Boot for 2 prong	68-69
113 945 515G	3 prong	70-79
211 945 355	Boot for 3 prong	70-79

## DOMELIGHTS



Real handy when trying to find that missing piece of clothing. The 55-67 bus lights are no longer available.

211 947 111B	Dome light	68-75
823 947 105B	Dome light	76-92

## DOOR JAM SWITCHES



This is the switch in the door jam that turns the dome light on. The switch is held in place by a small phillips screw. If you pull it out, be sure to hold onto the wire(s) if you taking it off. The wire has a tendency to spring back into the door jam and it's not fun fishing it back out. The wires work off ground so they're

never hot. The new switches we get come with the smaller terminals; you might have to change your wire ends.

113 947 561H	Single pin w/wide spade	68-71
113 947 565A	Switch seals (pr)	68-92

## DOMELIGHT LENS



The lens for the dome light on buses 1950 to 1967, just pops into place.

211 947 125A	Lens	50-67
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## HORNS



This little unit goes beep-beep. Your horn, if it's there, is located under the front drivers side. Once you have found the horn, locate the brown wire that hooks to the horn. Turn the key on and jump that terminal on the horn to ground. If the horn is good it should scare the hell out of

you. Don't hold the wire on the ground for any length of time. Just tap it to ground. If nothing happens, use your test light to make sure you have power going to the black wire with the yellow stripe. If you do have power, the horn is bad. If you do not, then start tracing your wires.

111 951 111H	6v	-66
111 951 113A	12v	67-92

## HORN WIRE BOOTS



These boots go around the wires that hook to the horn. They keep the horn connections from rusting. It's almost impossible to get the boots on over the wire ends; so use a razor blade and cut a small slit in the boot, just enough to get the wire end through. Also before slipping the boot over the horn, smear some grease on the connections.

111 951 195A	Pair	All
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## RADIATOR FAN RELAYS



This relay turns the fans on for your radiator. A must for keeping your water temp down.

141 951 253B	Water cooled	86-92
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## FRONT TURN SIGNAL LENSES



The lenses goes over the front turn signal bulb holders. Don't over tighten the screws or the lens will crack.

111 953 161C	Clear, pair	55-61
111 953 161AM	Amber, pair	55-61
211 953 161B	Left, Brazil	62-67
211 953 162B	Right, Brazil	62-67
211 953 161BGR	Pair, German	62-67
211 953 141J	Left	68-72
211 953 142J	Right	68-72
211 953 141T	Left	73-79
211 953 142T	Right	73-79
251 953 141B	Left	80-92
251 953 142B	Right	80-92

## FRONT TURN SIGNAL SEALS



These seals go around the front turn signal lens.

111 953 165	Pair	55-61
211 953 165A	Pair	62-67
211 953 165C	Pair	68-72

## TURN SIGNAL FLASHER RELAYS



This relay makes the turn signal flash. Before you change the relay, use a test light and make sure you have power going into the relay. Also if you have an emergency flasher switch, check that switch. The turn signal flasher wires run through it and if it's bad, you will have no turn signals.

111 953 225B	6v 3prong	-65
211 953 227B	12v (aftermarket)	67-68
111 953 227D	12v 3prong	71-91
211 953 215C	12v 4prong	68-71

## EMERGENCY FLASHER SWITCH



This is the switch that makes all of the turn signals work at the same time. The switch has an effect on the flasher relay as well, please see TURN SIGNAL FLASHER. Before you spend a lot of money on parts that you can't return, start probing and tracing wires with a test light.

211 953 235A	Flasher switch	68-79
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## TURN SIGNAL SWITCHES



This switch tells the flasher which way to send the current. To test the switch, take a test light and locate the black wire with the green and white stripe. This wire is the main wire from the flasher to the switch. If you have power here,

check each side of the switch by doing the following. Turn the switch on, find and probe the black wire with a green stripe and the black wire with a yellow stripe; this is one side. The black wire with the white stripe and the black wire with a red stripe is the other side. If you find the current is flowing correctly through both sides, it's not the switch.

211 953 513D	Switch	55-65
211 953 513J	Switch	72
211 953 513H	Switch	73-74 1/2
211 953 513K	Switch	74 1/2-79
251 953 513	Switch	80-

## WINDOW WASHER BOTTLE KIT



This kit contains all the parts to put a window washer system on your early bus.

211 955 081	Kit	-67
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## WIPER MOTOR ARMATURE



This armature is used to turn your 6v wiper motor into a 12v when upgrading your electrical system to a 12v.

113 955 811B	12v	-65
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## WIPER SHAFTS



On buses up to 1964 the shafts are connected to the motor with round control rods and are separate from the motor. To take the shafts off, you have to pop off the control rod and remove the 14mm nut from the shaft and it will fall out. On buses 1965 on up, the control rods were flat and the motor and shafts are part of a wiper assembly. To remove the shafts you'll have to take out the entire assembly.

211 955 215C	Each	55-64
211 955 221A	Each	65
211 955 221B	Each	66-67
211 998 161E	Each	69-79

## SAFARI WIPER SHAFTS



On buses up to 1964, the shaft is spring loaded. This allows you to disengage the wiper arm and swing it into the middle to open up the windows. On 1965 to 1967 the pivot mounts on the outside.

211 955 225B	Pair	55-64
211 955 225C	Pair	65-67

## WIPER SHAFT PARTS



This is a list of available parts for the wiper shafts and/or wiper related parts.

111 955 265A	Shaft seal, pair	55-67
211 955 200	Control rod end	55-64
211 955 977	Rubber cap for bottle	64-67
211 955 993	Spray nozzle	67-92
211 955 275A	Shaft cup, pair	69-79
211 955 417A	Outer nut for arm, pair	69-79
311 955 261A	Shaft seal, pair	68-79
133 955 435	Arm cap, pair	73-92
133 955 261	Rear shaft seal, pair	80-83
171 955 275	Shaft cup, pair	80-83

## WIPER ARMS



The arms come from the shaft to hold the blades, very rarely do they fail.

221 955 407A	Quality arm	-67
221 955 407ABR	Brazilian	-67
211 955 409A	Each	69-72
211 955 409B	Each	73-79
251 955 409	Each	80-

## WIPER BLADES



We carry Bosch blades for buses 1968 on; but for buses up to 1967, we carry whatever we can get our hands on.

221 955 425CBR	Brazilian	-67
221 955 425C	Quality blade	-67
211 955 425C	16"	68-79
431 955 425C	18"	80-91
43316	Refill 16" (pr)	68-79

## WIPER SWITCHES



This switch controls the wiper motor. Before replacing the switch, grab your test light and probe the plain black wires. One black wire is the hot going to the switch. The other black wire goes to the relay in the motor that stops the motor in a set position. The wires with stripes are for the motor speeds. The brown wire is the ground for the relay.

141 955 517	In dash	68-72
211 953 519G	On column	74-79
251 953 519C	On column	80-92

## FUEL GAUGE VIBRATOR



When you go around a corner, this unit keeps the needle in the fuel gauge from jumping around radically. It also reduces the juice that the gauge gets. If you hook up the gauge directly, without the vibrator, you will fry the gauge. This only applies to buses 73-79. See GAS TANK SENDING UNITS for more information.

113 957 099A	Gauge vibrator	73-79
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## ORNAMENTAL SPEEDOMETER RING



This ring came on deluxe buses up to 1967. It goes in before the speedo is mounted. It is held in by bending back the four metal taps.

221 957 371	Ring	55-67
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## SPEEDOMETER HEAD SEAL



This seal goes around the speedometer. You will need to install the seal around the head before you mount it to the body.

111 957 375A	Seal	55-67
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## DASH LIGHT BULB HOLDER



These are the connectors that hold the dash bulbs in place.

111 957 397	Bulb holder	-67
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## SPEEDOMETER CABLES



This cable goes from the speedometer to the driver's side front wheel. New cables come dry. If you'll oil the cable we've found you'll get more life out of it. So before replacing the new cable, hang it up by the end that goes to the speedometer and squirt

some oil into the cup. While you add oil, have someone turn the other end. If you put a new cable in and it busts right away, either your speedo head is frozen or you have one heck of a bend in the cable.

211 957 801E	2070mm	-67
211 957 801F	2460mm	68-74
211 957 805	Upper	75-79
224 957 809A	Lower	75-79
251 957 809	Lower	80-82
251 957 809A	Upper	80-81
251 957 809B	Upper	82

## SPEEDOMETER CABLE GROMMET



This grommet keeps the speedometer cable from getting a hole rubbed in it.

111 957 855B	Grommet	68-92
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## WIRING HARNESS



The electrical harness runs everything on the bus. It's real easy to get lost here, so no drinking while installing the harness. If you do get lost, just call and we'll do our best to get you back on the right track. It's a good idea to buy a Bentley manual to help you. One trick is to cut the old

harness an inch from each connection, so you will have some color codes to follow while you hook it back up.

211 971 014	Main	58-63
211 971 015	Main	64-67
211 971 016	Main	68-69
211 971 017	Main	70-71
211 971 113	Complete	58-63
211 971 114	Complete	64
211 971 115	Complete	65
211 971 116	Complete	66-67

## POSITIVE BATTERY CABLE



This cable goes from the battery to the starter. Please make sure you have the grommet where the cable goes through the sheet metal. We've seen some major meltdowns when the battery has shorted out because the grommet was missing and the sheet metal cut into the cable.

211 971 225C	830mm	-79
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## NEGATIVE BATTERY STRAP



This strap goes from the negative post of the battery to the engine door jam of the bus. This is the negative ground for your battery, NOT a strap to keep the battery in place. But perhaps this is a good time to discuss securing your battery. The original battery hold down is no longer available, so you'll have to use some ingenuity to make one. We sell more tail light buckets because the battery slides into the bucket, shorting out the tail light, than for any other reason. Plus if you're ever in a wreck, you don't want that battery flying around.

141 971 235A	18"	-79
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## TRANS GROUND STRAP



This is a strap that goes between the front trans mount and the body. This strap makes sure that the engine and trans are grounded properly. If you don't have one, you should think about getting one.

111 971 237A	Ground strap	All
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## GENERATOR WIRE BOOT



This boot goes over the wire and the terminal of the generator or alternator. It keeps moisture and corrosion off the wire and terminal.

113 971 901A	12v	All
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## BATTERY CABLE GROMMET



This grommet goes around the main battery cable that goes to the starter. It's a must! Without this grommet, the tin of the body will slice into the cable. When this happens, it can cause the battery to blow up, leaving you stranded or worse catch the bus on fire.

111 971 905	Grommet	-79
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## HUB CAP REMOVAL TOOL



This is a slick tool for getting your hub caps off. It has two fingers that go into the two drain holes in the edge of the hub cap. Just pull back and the cap comes off without the usual screwdriver marks. The nice thing is they fit into the jack ports on the side of the bus when you're done.

311 012 243	Pair	-79
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## CIGARETTE LIGHTER



If you don't have a cigarette lighter, you will need to drill a hole in the dash. Now hook up the red wire to the fuse box where you see the solid red wires plugged in. This will allow the lighter to work whether the key is in the on position or not.

111 012 525	W/white knob	-66
111 012 525BK	W/black knob	-66

## RADIO ANTENNA



A broken antenna can give bad reception and using a coat hanger isn't much better. We understand the dealerships put the antennas on, so the location can vary from bus to bus. Most buses up to 1965 had the double mount, where as 1966 on had the single mount.

111 012 900	Double mount	-67
211 012 900	Single mount	all

## POP TOP CANVAS



This is the replacement canvas for the pop top. We suggest after you get the top on to protect it with ScotchGuard.

231 067 983	European models	64-67
231 069 708	With nets	68-73
231 070 705	With nets	74-79
253 070 702	One window	80-91
253 070 703	Three window	80-91

## RUBBER KIT FOR CAMPER WINDOWS



These rubber kits are for restoring your camper style windows.

231 069 411	Westy style window	55-67
231 069 411A	Non-Westy style window	55-67
231 069 413	Westy style window	68-78
241 070 522	Westy style window, outer only	68-78
231 069 321	Westy style window, outer only	55-67

## POP TOP RUBBER LATCH



This latch holds the pop top down on campers.

231 070 700	Latch	68-73
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## POP TOP SEALS



This seal goes around just the pop top portion of the camper.

231 070 706	European model	64-67
231 070 701	Across the top seal only	68-79
231 070 710	Large top	68-73
231 070 708	Large top	74-92

## LUGGAGE RACK SEALS



This seal goes around the stationary luggage rack of the camper.

231 070 711	Rear trim	68-73
231 070 709	Front seal	74-83

## BOSCH BLUE COILS



This is a hotter coil than the original stock coil. They work very well, improving horsepower and milage. We highly recommend using this Bosch coil.

00012	12v
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## 009 DISTRIBUTORS



This has to be the most common centrifugal advance distributor in the world for air cooled VWs. The 009 we get now is the Canadian made one. We have had good luck with these; however, there are two advance springs in these. We suggest you remove one of them. The Bosch 009 only had one spring. They work great in place of the single advance distributor or when you run any kind of aftermarket carburetor system. We also suggest you buy a Compufire kit for this distributor. As far as timing goes, we set our motors at 28 degrees full advance, not at an idle. To set the timing, you'll need a degree pulley or a timing light with an advance dial. If you need more information, please call us.

0231178009	Each	-74
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## FUEL INJECTION REPLACEMENT PARTS



These are the replacement parts for your fuel injection vehicle.

0280130214	Thermo time switch	76-83
0280160200	Fuel pressure regulator	74-83
0280170026	Cold start valve	74-83
050239	Cyl. head temp sender	74-83

## BOSCH DISTRIBUTOR PARTS

Please refer to the chart to find which parts fit your distributor. If your distributor number is not on the chart, give us a call. If we can't find it right away, allow us some time and we will research it for you and get back to you. Points are set with a gap of .016" with the point block on a lobe.

## POINTS



01001  
01003  
01006  
01009  
01011  
01013  
01016  
01030

## BOSCH PARTS CHART

DISTRIBUTOR	POINTS	CONDENSOR	CAP	ROTOR
0 231 115 040	01 002	02 187	03 019	04 008
0 231 115 056	01 011	02 021	03 001	04 006
0 231 115 078	01 011	02 021	03 010	04 012
0 231 129 019	01 001	02 170	03 019	04 008
0 231 137 005	01 009	02 007	03 001	04 006
0 231 137 009	01 009	02 069	03 001	04 006
0 231 137 011	01 009	02 069	03 001	04 006
0 231 137 016	01 009	02 069	03 001	04 006
0 231 137 017	01 009	02 069	03 001	04 006
0 231 137 021	01 013	02 069	03 001	04 006
0 231 137 035	01 013	02 069	03 010	04 012
0 231 137 036	01 013	02 069	03 010	04 012
0 231 139 002	01 006	02 006	03 037	04 010
0 231 139 005	01 006	02 006	03 037	04 010
0 231 147 002	01 009	02 007	03 001	04 006
0 231 163 001	01 011	02 039	03 001	04 006
0 231 163 003	01 011	02 039	03 001	04 006
0 231 163 006	01 011	02 039	03 001	04 006
0 231 163 011	01 011	02 054	03 010	04 012
0 231 163 016	01 011	02 039	03 001	04 006
0 231 163 027	01 011	02 054	03 001	04 006
0 231 163 029	01 011	02 054	03 001	04 006
0 231 167 012	01 011	02 054	03 010	04 012
0 231 167 029	01 011	02 054	03 010	04 012
0 231 167 049	01 011	02 054	03 010	04 012
0 231 167 053	01 011	02 054	03 010	04 012
0 231 167 055	01 011	02 054	03 010	04 012
0 231 167 070	01 011	02 054	03 010	04 012
0 231 168 005	01 011	02 074	03 010	04 016
0 231 170 034	01 011	02 074	03 010	04 012
0 231 170 036	01 011	02 074	03 010	04 033
0 231 170 053	01 052	02 074	03 010	04 033
0 231 172 009	01 011	02 054	03 001	04 006
0 231 172 011	01 011	02 054	03 001	04 006
0 231 172 019	01 011	02 054	03 010	04 012
0 231 173 001	01 011	02 054	03 010	04 021
0 231 173 005	01 011	02 071	03 010	04 016
0 231 173 007	01 011	02 071	03 010	04 016
0 231 173 009	01 011	02 071	03 171	04 016
0 231 176 028	01 011	02 074	03 010	04 033
0 231 176 033	01 011	02 074	03 010	04 033
0 231 176 044	01 011	02 074	03 010	04 033
0 231 176 048	01 011	02 074	03 010	04 033
0 231 176 055	01 011	02 074	03 010	04 033
0 231 176 055	01 011	02 074	03 010	04 033
0 231 178 009	01 011	02 086	03 010	04 033
0 231 178 009	01 011	02 074	03 010	04 016
0 231 181 005	01 011	02 074	03 010	04 016
0 231 181 007	01 011	02 074	03 010	04 016
0 231 181 012	01 011	02 074	03 010	04 016
0 231 181 014	01 011	02 074	03 016	04 016
ZV/FAU4R5	01 006	02 006	03 037	04 010
V14BR8	01 001	02 187	03 019	04 008

## CONDENSERS



02006  
02007  
02021  
02039  
02054  
02069  
02071  
02074  
02086  
02187

## CAPS



03001  
03010  
03019  
03037  
03212

## ROTORS



04004  
04006  
04008  
04010  
04012  
04033  
04038

## BOSCH ROTORS WITH REV LIMITER



These are great for when you let your son or daughter borrow the bus on Friday night. You'll have peace of mind knowing they're not drag racing. Rotors are a replacement for the stock 04033.

04016	5400 RPM
04030	5800 RPM
04023	6500 RPM
04028	7100 RPM
04029	7300 RPM

## BOSCH SPARK PLUG WIRES



The plug wires run from the distributor cap to the spark plugs and coil. We carry Bosch wires because they're high quality wires and they have a lifetime guarantee. When putting the wires in the wire separators on the fan shroud, use some oil on the wire before pushing them in place. If you don't use oil, you will rip the wire causing it to ground out and void the warranty.

09001	-71
09171	72-83
09180	83-92

## VOLTAGE REGULATORS



This little box tells the generator what to do. To test the regulator use a voltmeter on the battery. The voltage should read 12 to 12.5 volts. Now start the car and rev up the motor. The meter should now read 13.5 to 14 volts. If the meter doesn't move, either the regulator or the generator is bad. If you see the voltmeter go backwards, then the generator needs to be polarized.

30020	Generator mounted, 6v	-64
30019	30 Amp 12v	67
30021	38 Amp 12v	68-71
30048	Alternator regulator	72-79
30091	Alternator regulator	80-83

## ALTERNATORS



This unit supplies the battery with voltage. To test yours see VOLTAGE REGULATORS. Some alternators are sold on an exchange basis.

AL82NC	12v 50 amp, new	67-71
AL8275	Special 75 amp, new	67-
AL8275POL	Special 75 amp, new	67-
AL75X	12v 55 amp, rebuild	72-74
AL75XCO	Core	72-74
AL108X	12v 70 amp, rebuild	75-79
AL108XCO	Core	75-79
AL114X	12v 65amp, rebuild	80-83
AL114XCO	Core	80-83
AL25X	Diesel, 12v 65 amp	82-83
AL25XCO	Core	82-83

## GENERATORS



Generators supply the battery with voltage. To test a 12v generator take the wires off the D+ and the DF terminals. Grab a voltmeter and hook it up so the positive lead goes to the D+ and the negative to the DF. Now run a jumper wire from the DF to the D-. Start the car and rev the motor. If the meter pegs, the generator is good and if it doesn't then it's bad. If the meter jumps the opposite way (negative voltage), then the generator

may need to be polarized. To polarize a generator, make sure the voltage regulator wires are still disconnected. Take off the generator belt. Using a battery with jumper cables, hook up the positive to the D+ and the negative to the D-. Now with a jumper wire go from the DF to the body of the generator. Hold the wire there just long enough to see the generator spin like a motor; no longer, or you will burn up the generator. Some generators are sold on exchange.

GR11X	6v w/regulator, rebuild	-66
GR11XCO	Core	-66
GR15NC	12v 30 amp, new	-67
GR17X	12v 38 amp, rebuild	68-71
GR17XCO	Core	68-71

## STARTERS



This is what starts the car. It usually quits the furthest place from home. To bench test a starter is tough, as they can work but are weak. In other words, it will work on the bench, but as soon as it has the drag of the engine on it, it won't. The way we test starters is in the car with a remote starter button (a push button with two long wires). Disconnect the battery. Hook up one of the wire to the big post that the battery cable is hooked to and the other wire to where the push-on wire is located. Now connect the battery back up and make sure the E-brake is on and the car is out of gear. Push the remote starter button. If the engine turns over the starter is good, and if it doesn't, it's bad. If you find the starter works with the remote starter but not with the key call us. You might need a hard start relay or a new electrical part in the ignition switch. Some starters sold on exchange.

SR11X	6v	-66
SR11XCO	Core	-66
SR15NC	12v	67-75
SR15HT	High torque, 12v	67-
SR17X	12v automatic trans	72-83
SR17XCO	Core	72-83
SR87X	12v	76-83
SR87XCO	Core	76-83
SR28X	Diesel	82-83
SR28XCO	Core	82-83

## BOSCH SPARK PLUGS



When replacing the spark plugs, use anti-seize on the threads. To start the plug in the hole, use a short piece of rubber hose that fits over the porcelain part of the plug. The gap on the plug should be .028". One last note, the smaller the number the colder the plug; we use 8s on most engines.

W8AC	Short reach	1200-1600
W7AC	Short reach	1200-1600
W8CC	Long reach	1700-2000
W7CC	Long reach	1700-2000

## ELECTRICAL ENDS & CONNECTIONS



ECP part numbers are for the regular crimp style electrical ends. ECX part number are the factory style ends. You will need a special pair of pliers (see ELECTRICAL END PLIERS in TOOL SECTION) to install ECX ends. We find these ends much better than the regular crimp ends.

ECP10B	Wire splice, blue, to 12 gauge wire
ECP11B	5mm ring, blue, 14-16 gauge wire
ECP11Y	8mm ring, yellow, 10-12 gauge wire
ECP12B	8mm ring, blue, 14-16 gauge wire
ECP12Y	8mm ring, yellow, 10-12 gauge wire
ECP13B	10mm ring, yellow, 10-12 gauge wire
ECP25B	Female end, blue, to 12 gauge wire
ECP27	Lg fm end for regulator, 10-12 gauge wire
ECX25B	Female end, to 12 gauge wire
ECX25BL	Fm end w/locking tab, to 12 gauge wire
ECX35L	Male end w/locking tab, 12 gauge wire
ECX43	Ring 4mm hole, to 12 gauge wire
ECX44	Ring 5mm hole, to 12 gauge wire
ECX46	Ring 8mm hole, to 12 gauge wire
ECX95	Piggy back connector
EFH930	Fuse holder GR
ESP911	1 on 1 male
ESP912	2 on 1 male
ESP913	2 on 2 male (all four wires hot)

## MISC. BOLTS



This is a list of the most common bolts you might need.

N101274	Caliper bolt 14 X 35	T2,73-79
N102107	6 X 10	
N102154	6 X 15	
N102212	6 X 35	
N102174	6 X 40	
N102281	7 X 15	
N102401	8 X 20	
N102425	8 X 25	
N102473	8 X 35	
N103404	8 X 40	
N102461	8 X 45	
N103421	6 X 20	
N103483	6 X 43	
N104701	10 X 70	
N105001	10 X 110	
N160601	Safari wing bolt	

## MISC. SCREWS



This is a list of the most common screws you might need.

N107101	Tin screw w/washer	
N107101GWAS	Tin screw w/oversized washer	
N107101PHPH	Tin screw w/phillips head	
N109051	Pop out window screw, 3.5 X 5	
N109061	Counter sunk screw, 4 X 6	
N139681	Safari mounting screw	
N142268	Counter sunk screw, 6 X 8, engine lid hinge	
N142892	Counter sunk screw, 8 X 16, door hinge	
N0142154	Frt door hdl cover plate screw 68, 80-83	
N0142643	Frt window handle screw 68-83	
N185163	Counter sunk screw, 4 X 8	
N109801	5x10 Countersunk sunroof track	-67

## MISC. NUTS



This is a list of the most common nuts you might need.

N0111633	Tie rod jam nut right hand thread
N0111636	Tie rod jam nut left hand thread
N110623	6mm, Cap nut for oil sump
N110062	6mm X 10
N110063	6mm X 10 nylock
N110071	7mm X 10 nylock
N110085	8mm X 13
N113081	8mm X 13 nylock
N110086	8mm X 12
N111342	10mm X 15
N110104	10mm X 17
N113102	10mm X 17 nylock
N111351	12mm X 19
N113121	12mm X 19 nylock

## WASHERS



A general rule here. Wafer washers are used against aluminum and lock washer against steel.

N115244	6mm, flat
N115252	8mm, flat
N115271	10mm, flat
N115317	12mm, flat
N120091	8mm, lock
N120112	10mm, lock
N120121	12mm, lock
N120141	14mm, lock
N121051	6mm, wafer
N122343	7mm, wafer
N122311	10mm, wafer
N122412	8mm, wafer
N154011	8mm, flat thick head washer

## REAR AXLE COTTER PIN



This pin is a must because it holds the axle nut on. It will not prevent a loose nut from ruining a drum, but it will keep the wheel on the bus. We recommend tightening the axle nuts to 250 ft. lbs. Now drive the bus around the block and retighten the axle nut. Drive the bus around the block again. If the nut moves when you torque it, drive around the block again. When it no longer moves, install the cotter pin. If the hole doesn't line up, tighten it up to the next hole. Whatever you do, don't loosen the axle nut to make the pin fit. Air wrenches DO NOT let you skip the trip around the block.

N125481 5 X 55mm

## COTTER PINS



These are the more common cotter pins. Tie rod ends are the 2X22 and link pin bolts are 3.2X32mm.

N125221 2X22mm  
N125321 3.2X32mm

## MISC. STUDS



Here are some of the most common studs you might need. The best way to get a stud in or out is to double nut it. Take one nut and tighten it against the other and screw the stud in or out.

N0145051	Dual port upper inner head stud, 10mm
N143953	8 X 45mm
N144003	8 X 35mm
N144021	6 X 8 X 31mm, step stud
N144031	6 X 31mm
N144111	10 X 85mm
N144438	8 X 38mm
N144832	8 X 10 X 38mm, step stud
N145431	6 X 40mm
N145415	6 X 15mm

## FUSES & BULBS



The following is a list of fuses and bulbs you may need. If you have questions about the correct amp fuse to use, refer to your maintenance manual or give us a call. There's a reason for certain amp fuses being where they are. If you blow a fuse and are thinking of using the tin foil trick, price out a new wiring harness first.

N171211	8 amp fuse
N171214	16 amp fuse
N177171	Marker, 6v
N177172	Marker, 12v
N177191	License, parking bulb, 6v
N177192	License, parking bulb, 12v
N177221	Dash light bulb, 6v
N177222	Dash light bulb, 12v 67
N177512	Dash light bulb 68-
N177251	Dome light bulb, 6v
N177252	Dome light bulb, 12v
N177321	Single element turn bulb, 6v
N177322	Single element turn bulb, 12v
N177381	Double element bulb stop, tail 6v
N177382	Double element bulb stop, tail 12v

## MISC. HOSES



We only carry metric hose. This type of hose has cloth wrapped around it. We see more engine fires from people running American-size fuel hose than for any other reason. The cloth on the outside of the hose is supposed to make the hose tighter as it swells. If you run American-size fuel hose, even with a clamp, it will swell and come off. Hose is sold by the foot.

N203532C	3.5mm, black vacuum
N203751	4.5mm, green vacuum
N203551	5mm, fuel
N203571	7mm, fuel
N203741	12mm, breather
N203711	14mm

## INSERT STRIPS



This deco strip goes in the molding of a deluxe bus. It comes in a roll.

N603101	Red	-67
N603102	Black	-67
N603103	Green	-67

## MISC. CLIPS



These are some of the most common clips you may need when putting your bus back together.

N120801	Front emblem (OEM)	-67
N0124342	Speedo cable	4mm
N0143893	Door panel clip	
N0128101	Inside door handle pins (4)	

## MISC. VACUUM CAP PLUGS



Here is a list of vacuum plugs you may need for your bus.

VCP12	1/8"
VCP18	5/16"
VCP25	1/4"
VCP50	12mm

## AFTERMARKET PARTS

### ENGINE CASE ADAPTER



This adapter is used to convert a non-hanger case to accept a hanger. We don't like to use them, but in a bind, they'll work. This adapter is meant for buses 1968-1971. They only work on engine cases with 8mm oil pump studs.

2101000	Case adapter	68-71
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### SUPER CRANKCASE



There's not much "super" about this case other than it's a dual relief case that have been machined and is ready to go for a big motor. It comes with the center main shuffle pinned, the bores opened up for 90.5 pistons and cylinders, full flowed, and clearanced for an 82-stroke crank. The only other machine work that we usually do is clearance the lifter bosses for the cam and install 10mm case savers.

If you let us know what cam you are running and what brand lifter, we can finish the machine work here so you will be ready to build. This is a great case for a 2007cc motor, which in our minds is the best bus motor there is. For more info, please contact us here.

1101025	Case	1600
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### ENGINE HARDWARE KIT



This kit has all the necessary hardware to assemble your upright engine out to the heads. A great way to go if you are starting out with nothing.

1101030	With 8mm head nuts	1600
1101031	With 10mm head nuts	1500-1600

### MAIN BEARING STEPPED DOWEL PIN



This pin is needed for cases where the main bearing has spun, ovaling out the pin hole. When installing, make sure the step doesn't stick up into the main bearing.

1101123	Stepped dowel pin	All
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### HEAD STUD CASE SAVERS



A case saver is an insert that repairs worn or stripped head stud holes in a case. They prevent head studs from pulling under normal use. If you don't already have case savers, you should think about having them installed. Sold in sets of 8 but 16 are required per engine case.

1101130	10mm ID x 1/2 OD, (8)	-71
1101131	10mm ID x 14mm OD, (8)	-71
1101132	8mm ID x 14mm OD, (16)	-71

### SELF-TAPPING HEAD STUDS



This is a cheater stud for head studs that have pulled from the case. We don't recommend using them, but in a bind they do work.

1101143	Upper, 7"	40 hp
1101145	Lower, 9"	40 hp
1101144	Upper, 8"	1500-1600
1101146	Lower, 9 3/8"	1500-1600



## BILLET CAM PLUG WITH O-RING



This cam plug is made out of billet aluminum and has an o-ring on it. It's reusable, so it comes in handy if you take your engine apart frequently.

1101157	Billet cam plug	1500-1600
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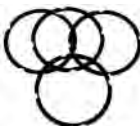
## ALTERNATOR OR GENERATOR STAND



This stand can be used for either an alternator or generator; they're 12 volt only.

1101211	Chrome	40 hp-1600
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## BARREL SHIMS



Whether your motor lives or not can depend upon this little shim. Many people tend to overlook this part, but the shim controls the compression ratio. Compression equals heat and heat destroys motors. Take the time to figure your ratio and get the proper shims for your desired compression. Figuring compression ratios and getting the right shims is a long subject, so for help, just call. We find 99.9 percent of all engines need barrel shims.

### 85.5 shims (1600)

1101381	.010" set
1101382	.020" set
1101383	.030" set
1101384	.040" set
1101386	.060" set
1101389	.090" set

### 90.5 or 92mm shims

1101391	.010" set
1101392	.020" set
1101393	.030" set
1101394	.040" set
1101396	.060" set
1101399	.090" set

### Type 4 shims (1700-2000)

2101301	.010" set
2101302	.020" set
2101303	.030" set
2101304	.040" set
2101306	.060" set
2101309	.090" set

## BIG VALVE CYLINDER HEADS



Here's another long subject, but we'll give you a little something to think about. 75% of your horsepower comes out of the heads. Why would you build a big engine and not increase the size of the valves? Only so much fuel and exhaust can go through a certain size hole. So if you are putting on larger pistons and cylinders, you're wasting your time, unless you do something about the heads. Remember, a good engine is a combination of parts that works well together. These heads come with 40mm intakes and 35.5 exhaust valves. This is the best valve sizes for a reliable street engine. For more information, please call when you have some extra time. We could write a book on this subject alone.

1101355	Unpolished, each	Upright
1101355P	Ported and polished, pair	Upright

## HEAD STUDS NUT AND WASHER KIT



This kit has the correct nuts and washers to hold the heads on the engine.

1101462KIT	Nuts & washers for 10mm	36hp-1600
1101461KIT	Used D/P 10mm head studs	1600

## VALVE COVER VENTS



If you have high compression, you will need to vent the valve covers into a breather box. These are the fittings you will need for the stock valve covers. We suggest that after you bolt the vents into your covers, use 3M glue to seal them.

1101468	Pair	40hp-1600
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## RACING ALUMINUM VALVE COVERS



These are good bolt on valve covers. They don't leak like the cheap ones. To install these covers, start by removing your old valve covers and bails. Now remove the shaft nuts one at a time and replace them with the long nuts that come in the kit. Readjust the valves and place a new gasket in the cover. Take the bolt that comes in the kit and place a washer on it and then stretch the small o-ring over the bolt. Place the cover on the head and hand tighten the bolts. Snug the bolts up with a wrench but do not over tighten or you will squeeze the gasket out. We use Gasgacinch on the gasket.

1101473	Pair	1300-1600
11014730R	Replacement o-rings (4)	1300-1600
1101482	Replacement hardware kit	1300-1600

## BOLT ON ALUMINUM VALVE COVERS



These covers look good but have a tendency to leak. We suggest using Channel Style or Racing Aluminum Valve Covers. To install see RACING ALUMINUM VALVE COVERS.

1101474	Pair	1300-1600
11014730R	Replacement o-rings (4)	1300-1600
1101482	Replacement hardware kit	1300-1600

## BOLT ON VALVE COVERS FOR 1700-2000



These bolt on valve covers are for the pancake style engine. They use the stock valve cover gaskets. The trick of tightening them is to run the bolts down until the washers touch the cover and then make one more full turn.

2101474	Pair	1700-2000
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## CHROME VALVE COVERS



These are just stock valve cover that have been chromed. They're sold in pairs and come with chrome bails.

1101475CH	Chrome	40 hp-1600
1101475BL	Chrome bails only (pr)	40 hp-1600

## CHANNEL STYLE VALVE COVERS



These valve covers are great because they're so deep, so they can accommodate most style rockers. They require a channel-style gasket that can be reused. The only problem we've seen so far is people tend to overtighten the cover and that rips the gasket. We run the bolt down until it hits the cover, then just one more turn with the wrench.

1101476	Covers and gasket kit (pr)	40 hp-1600
1101481	Replacement gaskets (pr)	40 hp-1600
1101482EMP	Replacement mounting hardware	

## CLIP ON ALUMINUM VALVE COVERS



These covers look good but have a tendency to leak. We suggest using Channel Style or Racing Aluminum Valve Covers. To install see RACING ALUMINUM VALVE COVERS.

1101477	Pair	40hp-1600
1101477BL	Replacement bails (pr)	40hp-1600

## RUBBER VALVE COVER GASKETS



This is like a stock gasket except it is made out of rubber instead of cork. Some people swear by them but we don't think they're all that great. The only difference is that you can use them more than once.

1101484	Pair	40hp-1600
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## COUNTERWEIGHTED CRANKSHAFT



These cranks are made from stock German core cranks. This is the way to go if you plan to rev your engine past 5K RPMs. The crank comes 8 doweled and both main journals have been ground. A core is required.

1105169	69mm	1600
311 105 101FCO	Core	1600

## STROKER CRANKSHAFTS



This crankshaft is forged from E4340 chrome-moly steel one of the strongest alloys known. These cranks are fully balanced, magnafluxed and micro-polished. Machine work to the case will be required. As you can see, we offer just one size for the bus. If you want to know the reason, call and we will explain. It would take up too much space to write about it here.

1105178	78mm	Upright
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## CHROMED STOCK CRANK PULLEY



This is just a stock pulley that has been chromed. We prefer the degree pulleys.

1105251CH	Pulley	40 hp-1600
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## POLISHED STK SIZE DEGREE PULLEYS



This is a crank pulley for an upright motor. The pulleys are marked in degrees to assist in timing and valve adjustment. Besides that, they just look cool! Unless you like spending money on rebuilding your motor, NEVER, EVER use a power pulley on your bus. Power pulleys turn the fan slower, which means less cooling and more heat. Neither are good for an air-cooled motor.

1105252BK	Black numbers w/oval holes	40 hp-1600
1105253BK	Black numbers w/holes	40 hp-1600
1105253BL	Blue numbers w/holes	40 hp-1600
1105253RD	Red numbers w/holes	40 hp-1600
1105254BK	Black numbers solid	40 hp-1600
1105254BL	Blue numbers solid	40 hp-1600
1105254RD	Red numbers solid	40 hp-1600

## ANODIZED DEGREE PULLEY



This is a very nice pulley, the numbers are etched in and do not wear off. They're like the Polished Stock Size Degree Pulleys just better quality. Highly recommended.

1105255BK	Black anodized w/holes	40 hp-1600
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## BROACHED PULLEY NUT BOLT



This is a stock zinc plated crankshaft pulley bolt that has a 3/8" drive hole broached into the center. This is great for working on your motor. You just snap in your 3/8" ratchet and you can easily turn your motor over by hand.

1105258	Pulley bolt	40 hp-1600
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## BILLET CRANKSHAFT PULLEY BOLT



This is a billet, zinc-plated, crankshaft pulley bolt that has a 3/8" drive hole broached into the center. It's great for working on your motor, just snap in your 3/8" ratchet and you can turn your motor over by hand.

1105257	Pulley bolt	40hp-1600
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## CHROME PULLEY BOLT AND WASHER



This is a chrome stock bolt and washer that holds the crankshaft pulley on. It fits all upright motors. Note: The concave of the washer goes outward.

1105259	Bolt & washer	40 hp-1600
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## 8 DOWELED FLYWHEEL



If you are going to run a 69mm or a 78mm counterweighted crank, then you will want to have your flywheel 8 doweled or get a flywheel that has been 8 doweled. These flywheels are new. For more info read CRANKSHAFT END PLAY SHIMS. We do not recommend lightened flywheels on buses.

1105271	Stock weight (200mm,12v)	1600
311 105 273ACO	Core	
1105279	Paper gasket	1600

## HD FLYWHEEL GLAND NUT WASHER



This washer is larger in diameter than stock, which gives you more surface coverage over the dowel pins. You should use this washer anytime your crank has been 8 doweled. It is very important that you torque the bolt to 250 ft. lbs.

1105297	Washer	40 hp-1600
1105305	Washer w/gland nut	40 hp-1600

## BALANCED STOCK RODS



These are stock connecting rods that have been re-machined and balanced for use in a stock stroke motor. They are sold on an exchange basis.

1105400	Set of 4	1600
311 105 401BCO	Core (4)	1600

## STROKER STOCK RODS



These connecting rods have been remachined, clearanced and balanced for use on a 78mm crank. They are sold in sets of four on an exchange basis.

1105401	Set of 4	1600
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## PISTON PIN KEEPERS



There are two types of keepers that we like to use. One is a spiral lock keeper, which locks by overlapping itself. The other keeper is a true arch clip, which is a clip that has a square edge instead of a wire round edge. We highly recommend using either one of these keepers. It's cheap insurance against losing a clip and scarring your cylinder.

1107430	Spiral locks, 8 pcs.	1500-1600
1107431	True arch, each.	1500-1600

## PAUTER CAMSHAFT



We've had good luck with this cam and prefer it over new stock cams. This is a great cam for engines using stock carburetion or Kadrons. It has good low and mid range power. It not only gives a little more power, it lasts longer than a new stock cam. This cam comes with the three bolts for the gear but doesn't come with the gear.

1109009	Lift .394 Duration .274	1500-1600
1109001	Cam gear bolt	
1109002	Cam gear w/o bolts	
1109003	Cam gear w/bolts	

## ENGLE PERFORMANCE CAMSHAFTS



Engle cams are one of the most popular performance camshafts made for the air-cooled Volkswagen. All shafts are ground from new billet castings and there are many sizes and profiles available. The cams listed below are designed for use with stock ratio rockers on upright engines. Note: Always check for lifter boss clearance. We

do not suggest using these cams with stock carburetion. We have many years of experience with performance bus engines, so please call for advice when choosing a cam. Engle cams do not come with a gear or bolts.

1109000	Lift .420 Duration .276
1109010	Lift .430 Duration .284
1109001	Cam gear bolt
1109002	Cam gear w/o bolts
1109003	Cam gear w/bolts

## 3/8" ALUMINUM PUSH RODS



These push rods are made out of aluminum and grow at a better rate than steel. When you use aluminum push rods, you can set your valves at .006 and they won't start rattling as the motor warms up. The rods come uncut, so you'll need a lathe to cut the rods or you can call us with the measurements and we'll cut them for you. There is a labor charge for cutting the rods. You must set up your rocker geometry first, as this determines the length. If you don't know how to do this, call us and we will talk you through it. These push rods are for upright motors.

1109301	Set of 8	Upright
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## STAINLESS STEEL PUSH ROD TUBES



These stock-style tubes are made of stainless steel. They're sold in sets of 8. Use them on all 1500 to 1600cc engines. You should always replace the old tubes with new ones if you take the heads off.

1109335	Set of 8	1300-1600
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## QUICK-CHANGE NYLON PUSH ROD TUBES



be the best.

These push rod tubes are spring loaded and are great for replacing bent tubes without having to pull the head off. However, they should be used only in an emergency, as they tend to leak a little. We found the stock push rod tubes to

1109337	Set of 8, nylon	40 hp-1600
1109336	Each, nylon	40 hp-1600
11093350R	Replacement o-rings, (8)	40 hp-1600

## ADJUSTABLE PUSH ROD TUBES



These push rod tubes are spring loaded and are great for replacing bent tubes without having to pull the head off. These are better than the nylon push rod tubes, but we find they still leak a little. The stock push rod tubes are the best.

1109338	Aluminum, (8)	40 hp-1600
1109339	Aluminum, (ea)	40 hp-1600
1109340	Aluminum, SCAT brand	40 hp-1600

## SOLID SHAFT ROCKER KIT



This kit eliminates the clips and spring washer in a rocker shaft set up. It's a must on engines running heavy duty springs and big cams. We recommend using solid shaft rockers on a 2007cc engine. Note: Proper shimming, as well as, the geometry setup are very important. Rocker shafts are sold as a set.

1109400	Kit	40 hp-1600
1109400SC	Chromoly kit	40 hp-1600

## ROCKER ARM SHIMS



These shims are used with the SOLID SHAFT ROCKER KIT. Even though the rocker kit comes with shims, you may need more. When you run solid shafts, it's very important they are shimmed correctly. Shims come in sets of eight.

1109410	.010"
1109405	.015"
1109403	.030"
1109406	.060"

## ROCKER ARM STAND SHIMS



These shims are used under the rockers to set the geometry. This is a very important step, so if you need help, call and we will be happy to explain it to you. They're sold in sets of four.

1109415	.015", 4 pcs.	40 hp-1600
1109430	.030", 4 pcs.	40 hp-1600
1109460	.060", 4 pcs.	40 hp-1600
1109461	Kit of the above, 12pcs.	40 hp-1600

## SWIVEL BALL VALVE ADJUSTMENT SCREWS



This style of adjusting screw has a ball with a flat side on the end. It's the flat side that hits the valve. They're a must if you are using stainless steel valves. Some clearancing of the rocker is necessary to run these screws and the valve geometry is very important. When you get them set up correctly, they're the trick way to go. They come in a set of 8 and have 8mm screws.

1109451	Set of 8	40 hp-1700
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## HEAVY DUTY VALVE SPRING



These are single HD valve springs, which are used on engines with 110 or larger cams. Since you don't need to rev the motor on a bus past 7k RPMs, there is no need for dual springs. Besides, dual springs are too hard on the valve train.

1109623	Set of 8	40 hp-1600
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## VALVE SPRING RETAINERS



If you are going to run heavy duty springs we suggest you use these valve spring retainers as well. The chromoly retainers work fine, but if you are going all out and want to lighten up the valve train then titanium is the way to go.

1109641	Chromoly (8)	1600
1109642	Titanium (8)	1600

## HARDENED VALVE STEM KEEPERS



We have had good luck with stock keepers on single springs. These are a must for dual springs. If you are going to be running stainless steel valves, it is important that you grind the keepers. Take a stainless steel valve and wrap two keepers in their grooves. You will notice the sides of the keepers touch and you can spin the valve. Grind the sides of the keepers so they do not touch. You must make the keepers fit tight to the valve stem.

1109651	Set of 16	40hp-1600
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## OIL SUMP



A great way to increase the oil capacity of your engine is to bolt on a deep sump. This sump adds 1.5 quarts of oil to your system. An oil sump eliminates oil starvation and increases cooling. It also keeps the cycle time down on the oil, giving it a chance to cool down. Sumps are cast from aluminum for maximum heat dissipation. We highly recommend using an oil sump, it's much cheaper than a new engine. Remember, with an air cooled engine, it's the oil that transfers the heat from the parts inside to the outside of the case to be cooled. With more oil, a more uniform temperature will be maintained in your motor giving it a longer life.

1115106	1.5 Sump	40 hp-1600
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## 3.5 CAPACITY OIL SUMP



This is a great way to increase the oil capacity of your engine. Bolting on this sump will add 3.5 quarts of oil to your system. An oil sump eliminates oil starvation and increases cooling by keeping the oil cycle time down. Sumps are cast from aluminum for maximum heat dissipation. We highly recommend using an oil sump.

1115106A	3.5 Sump	40hp-1600
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## OIL THERMOSTAT



An oil thermostat goes in-line on your external oil cooler system. We don't usually run these thermostats, but if you live in a really cold climate you might consider doing so.

1115109	W/fittings & clamps	All
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## FAN THERMOSTATS



These thermostats turn your electric fan on automatically. There are two types, an in-line style that activates at 180 degrees and is made for 1/2" hose and an electronic type that has a probe which you would place in the fins of the cooler. The electronic style is adjustable from 150 degrees to 240 degrees.

1115110	In-line style	All
1115110E	Electronic style	All

## FULL FLOW OIL PUMP COVERS



This oil pump cover comes with a threaded boss. You will need to plug the outlet side of the oil pump, which will force the oil out the cover. From this cover, the oil is routed to a filter then to a cooler and back into the case. The case must be full flowed, in other words, machined for the return line. This is the optimal way to run an external cooler, while maintaining the stock cooler. We recommend using this cover with a System One oil filter and a Mesa 96 plate oil cooler. You should also use the stock 1971 doghouse internal oil cooler. For use on all upright motors.

1115141	Aluminum cover	-67
1115142	Steel cover	-67
2115142	Steel	68-71
1115141BL	Billet aluminum cover	68-71
1115142HD	Heavy duty, steel cover	68-71
1115140	Outlet plug	

## CHROME SUMP PLATES



A stock sump plate that has been chromed.

1115181	W/o plug	40 hp-1600
1115182	W/plug	40 hp-1600

## BILLET SUMP PLATE



This plate is made out of a solid piece of aluminum. It's a lot thicker than the stock sump plate.

1115183	W/plug and nuts	40 hp-1600
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## MAGNETIC OIL DRAIN PLUG



This plug for the bottom of the sump plate has a magnet in it. Some people swear by them. We feel that if you have steel in the bottom of your motor, it's already wasted. If you want good protection from debris, buy a System One filter.

1115193	Plug	40 hp-1600
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## TYPE 3 OIL FILLER BLOCK OFF



This plate will block off the type 3 oil filler hole in a universal case.

1115349	Block off	1500-1600
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## SYSTEM ONE OIL FILTERS



This is the last oil filter you will ever buy. The System One filter can be used on any motor or adapter that takes a spin on filter. It uses a stainless steel screen to filter the oil down to 60 microns. The high flow inlet will not restrict lubricant flow or contribute to a reduction of pressure. The die-cast aluminum housing is not only strong but also good looking. It's easy to clean, use soap or solvent. Tattle tale inspection, quick removal and easy to read filtration screen gives you an early warning of internal problems. High flow by-pass maintains maximum efficiency to 5 microns before activation. One of the best purchases you will ever make.

1115351	Short black	All
1115351A	Tall black	All

## ADJUSTABLE OIL PRESS REGULATOR



This is one way to adjust your oil pressure. To increase the oil pressure, just turn the screw in.

1115420	Regulator	40 hp-1600
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## OIL PRESSURE BOOST SPRINGS



These stronger springs were designed to boost the oil pressure in your motor. For use in all upright motors.

1115421	Single relief case	-70
1115422	Dual relief case	71

## CASE RELIEF PLUG



This hex drive replacement plug is for the case relief spring(s). Compared to the stock plug, these hex drive plugs are much easier to work with.

1115431	Hex size is 22mm (pr)	40hp-1600
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## VENTED OIL FILLER EXTENSIONS



The oil filler extension screws into the generator stand. It comes in a variety of colors and has a fitting to vent the crankcase.

1115450PL	Polished	40 hp-1600
1115450BL	Blue	40 hp-1600
1115450RD	Red	40 hp-1600
1115450CP	Replacement cap	40 hp-1600
1115450BC	Billet alum. replacement cap	40hp-1600

## CHROME OIL FILLER AND CAP



This stock oil filler and cap has been chromed and fits all upright motors. Never plug the draft tube! The crankcase relieves it's pressure through the draft tube. If you plug the tube, oil will just blow out somewhere else. Note: Always run a dump tube boot on the end of the tube or your engine will eat dirt.

1115452	W/cap	40 hp-1600
1115453	W/o cap	40 hp-1600

## BILLET OIL FILLER AND CAP



The smooth flow design has a nice look and comes with a knurled cross-groove or smooth billet grooved cap for a good grip when it is wet or oily. The Vertical design makes it easier to pour oil into your motor and also comes with a smooth or grooved cap. All are vented. Rubber gaskets in the cap and rubber o-rings for the base seal included.

1115455	Vertical w/groove cap	40hp-1600
1115456	Vertical w/smooth cap	40hp-1600
1115457	Smooth flow w/groove cap	40hp-1600
1115458	Smooth flow w/smooth cap	40hp-1600
1115450BC	Cap only w/grooves	40hp-1600

## OIL BREATHER FILTERS



This air filter is made to protect the crankcase. Air that builds up in the case is let out of the filter, while keeping dirt from entering the case. Remember dirt can be damaging and shortens the life of your motor. We use a hose to connect the air filter to the tube coming out of the oil filler. The hose should go around the fan shroud on the number 1-2 side and through the tin, so that the filter is next to the heater box. We prefer this setup to running the oily air down the carb(s).

1115466	W/steel neck	All
1115465	Filter	All

## CHROME OIL CAPS



Two different styles to choose from. Fits all buses up to 1971.

1115485D	Domed	upright
1115485G	W/grooves	upright
1115485CH	Stock, chrome	upright

## CHROME DIPSTICKS



Chrome dipsticks come in different lengths and styles.

1115610	Billet	40 hp-1600
1115611	Stock length	40 hp-1600
1115612	2" longer	40 hp-1600
1115613	4" longer	40 hp-1600

## SANDWICH OIL FILTER ADAPTERS



To use this cooler adapter, replace it for the spin-on oil filter and then hook up your remote oil cooler and filter connections.

2117003	72-79
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## REMOTE OIL FILTER ADAPTERS



This adapter is used to mount an oil filter either by itself or in line with an oil cooler.

1117005	Replacement nipple	All
2117004	Adapter ports right	All
1117008	Adapter ports left	All

## OIL FILTER ADAPTER FOR HOSES



This adapter blocks off the place for the stock oil filter and allows you to run a remote oil filter and cooler. This is a great way to go for type 4 engines in buses 72-79.

2117006 Oil adapter 1700-2000

## 1/2" OIL HOSE



This is the high temp pressure hose used for routing oil to coolers and filters. It is sold by the foot.

1117007 Rubber, per foot All

## BRAIDED STAINLESS STEEL 1/2" HOSE



This is the high temp pressure hose wrapped with braided stainless steel. It can be used to route the oil to a cooler and/or a filter. It is sold by the foot. You'll need to buy the fittings that go with this hose because they're not the same as regular rubber hose.

1117007SS Per foot All

## MESA OIL COOLERS



Mesa coolers are the state of the art oil coolers. They're the strongest oil cooler on the market. Manufactured from aircraft quality aluminum, the fluxless, oven brazed construction provides excellent strength and vibration

resistance. In fact, they're so strong that you can stand on them without damaging them. The biggest problem with tube style oil coolers is that the oil passes through one tube, with a series of fins crimped onto it. Cooling is achieved by the heat transferring from the oil to the tube, then onto the fins and finally to the air. Problems occur because only a very small portion of the fin is in contact with the tube, so heat loss is minimal. In the Mesa design, depending on cooler size, oil passes within an embossed plate and travels along as many as sixteen different paths. This method spreads the oil across the whole surface area of the plate. In turn, this plate is exposed directly to the air, so the heat loss is from the oil to the air. We use this product ourselves and we recommend the Mesa 96 plate cooler for your bus.

1117024	96 plate	All
1117023	72 plate	All
1117022	48 plate	All
1117021	24 plate	All

## MESA OIL COOLER WITH FAN



This is the same as the Mesa cooler, but with a fan mounted to it. You can get this in a 72 plate cooler or a 96 plate cooler. Keep in mind, due to the fan, you will need a little more space when mounting. Make sure you leave an air gap between the cooler and any flat surface. See FAN THERMOSTATS for automatic switching of the fan.

1117023FAN	72 plate cooler with fan	All
1117024FAN	96 plate cooler with fan	All
1119031	Replacement cooler fan	All

## OIL FITTINGS



When plumbing the oil filter, oil cooler and/or case, these are the fittings you will need. Always use teflon tape on your fittings. Whatever you do, don't "muscle" them in, especially the 90 degree fitting on the case. We like to use quick fittings by the oil pump and case. If you use quick fittings, you won't have to cut hoses when you pull the engine.

1115139	Oil passage plug 3/8"
1117098	Quick male splice
1117099	Quick male 1/2" pipe
1117100	90 3/8" pipe
1117101	45 3/8" pipe
1117102	Barbed 1/2" hose 3/8" pipe
1117103	Barbed 1/2" hose 1/2" pipe
1117104	Quick male 3/8" pipe
1117105	Cap for quick male
1117106	90 1/2" pipe (pr)
1117107	Hose clamp for hose
1117108	Quick female barbed 1/2" hose (pr)
1117111	45 1/2" pipe
1117112	1/2" to 3/8" adapter

## STAINLESS STEEL OIL HOSE FITTINGS



These fittings are for the stainless steel hose. Keep in mind that there will be two fittings per connection.

1117101ALF	Hose end 45 degree
1117101ALM	Adapter end 90 degree 3/8 pipe to 8AN
1117102ALF	Hose end 90 degree
1117103ALM	Adapter end 1/2 pipe to 8AN
1117104ALM	Adapter end 3/8 pipe to 8AN
1117105ALM	Adapter end 1/4 pipe to 8AN
1117106ALM	Adapter end 90 degree 1/2 pipe to 8AN
1117108ALF	Hose end straight

## OIL COOLER BLOCK OFF



This block off plate is made to loop the oil back into the case in place of the stock oil cooler. You will have to contrive a new method of cooling the oil using a big external cooler with a big fan on it. Fits all upright motors. We do not recommend this product.

1117109	Block off	40 hp-1600
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## OIL COOLER BY PASS



This adapter replaces the stock oil cooler with two hoses, that reroute the oil to a external oil cooler. This allows you to mount an external oil cooler without machining the case. We do not recommend this method, unless you're using a big external oil cooler with a big fan attached.

1117110	By-pass	40 hp-1600
1117113	Gasket	40hp-1600

## OIL COOLER MOUNTING STUD



When mounting the oil cooler in the frame members you can use this rubber mounted stud. Using these special studs spaces the cooler off the deck and allows air to pass through the oil cooler. You will need two of these studs to mount your cooler correctly. We mount the front of the cooler flush with one of the floor frame members and the back spaced down about an inch (the thickness of this mounting stud). Note: Never mount an oil cooler flush with the deck on both sides. Doing so would not allow the air to flow through the cooler and the heat to properly dissipate.

1117699	Each
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## REMOTE COIL MOUNTS



When you want to keep the coil on the fan shroud, yet out of the way of down linkage on dual carbs, use one of these mounts.

1119024	Fan shroud mount	40 hp-1600
1119029	Block mount	40 hp-1600

## 36HP STYLE DOGHOUSE FAN SHROUDS



This style fan shroud combines the small shroud of the 36hp and the later doghouse style shroud. The doghouse shroud had the oil cooler ducting on the back and came on the 1971 bus. The nice thing, about this smaller shroud, is it gives you more room around dual carburetors and

better stock oil cooling.

1119026CH	Chrome w/o htr ducts dog house upright
119026BK	Black w/o heater ducts dog house upright
1119025CH	Chrome w/heater ducts dog house upright
1119025BK	Black w/heater ducts dog house upright

## 36HP STYLE FAN SHROUDS



This is a small fan shroud that came on the 36hp motor only. The nice thing about this shroud is it gives you more room around dual carburetors. This shroud is okay, but we prefer the doghouse shroud.

1119027CH	Chrome w/htr ducts	upright
1119027BK	Black w/htr ducts	upright
1119028CH	Chrome w/o htr ducts	upright
1119028BK	Black w/o htr ducts	upright

## FAN SHROUD HEATER HOSE PLUGS



These plugs fit into the fan shroud, plugging off the heater ducts. Either plug off the ducts or hook up the hoses to the heater boxes. If you don't seal the ducts, you'll lose valuable cooling air that's suppose to go over the cylinders.

1119100	Pair	upright
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## CYLINDER HEAD SHROUDS



These cylinder head tins sit under the fan shroud. They're not great, but they'll work with some custom fitting. They're sold in pairs.

1119302CH	Chrome, single port	1500-1600
1119302BK	Black, single port	1500-1600
1119303CH	Chrome, dual port	1500-1600
1119303BK	Black, dual port	1500-1600

## HEATER CHANNEL TINS



These three pieces of tin go from the heater boxes to the case. Yes, they are important and should be run, so don't leave them off.

1119352CH	Chrome	1500-1600
1119352BK	Black	1500-1600

## REAR DOGHOUSE ENGINE TINS



These are the two pieces of tin that attach to a doghouse style fan shroud. They duct the hot air out the back of the shroud and onto the ground. Having a doghouse shroud does you no good without these in place. A tight fit here is real important, so make sure it seals properly.

1119431CH	Exhaust & cooler cover chrome	1600
1119431BK	Exhaust & cooler cover black	1600
1119432CH	Exhaust tin chrome	1600
1119432BK	Exhaust tin black	1600
1119433CH	Cooler cover chrome	1600
1119433BK	Cooler cover black	1600

## REAR BELL HOUSING ENGINE TINS



This piece of tin goes behind the engine towards the flywheel and screws down to the cylinder tins. The doghouse tin has a hole in the back of it, so the ducting tin can fit into it.

1119516CH	Chrome	1500-1600
1119516BK	Black	1500-1600
1119517CH	Doghouse chrome	1600
1119517BK	Doghouse black	1600

## LARGE FRONT PULLEY ENGINE TINS



This tin goes from one piece of cylinder tin to the other. It mates up with the tin that is behind the crank pulley. They make two styles of crank pulley tin, so it's very important that you use the early (short) tin with one of these.

1119525CH	Chrome w/heater w/o heat riser	40 hp-1600
1119525BK	Black w/heater w/o heat riser	40 hp-1600
1119526CH	Chrome w/o heater w/heat riser	40 hp-1600
1119526BK	Black w/o heater w/heat riser	40 hp-1600
1119527CH	Chrome w/o heater w/o heat riser	40 hp-1600
1119527BK	Black w/o heater w/o heat riser	40 hp-1600
1119528CH	Chrome w/heater w/heat riser	40 hp-1600
1119528BK	Black w/heater w/heat riser	40 hp-1600

## CRANK PULLEY ENGINE TINS



This tin goes behind the crank pulley. It is the earlier style (short), so make sure the large piece matches.

1119533CH	Chrome	40 hp-1600
1119533BK	Black	40 hp-1600

## FUEL PUMP BLOCK-OFF



This block off is used in conjunction with an electric fuel pump and mounts in place of the manual fuel pump. One type comes with a threaded boss so you can put a fitting in to attach a breather vent.

1127023	W/boss	40hp-1600
1127022	Flat, w/o boss, billet	40hp-1600

## FACET ELECTRIC FUEL PUMPS



This electric pump replaces your stock pump. We are not fond of electric pumps and suggest you do not run one unless necessary. In case of an accident, unlike the manual pump, the electric pump continues to pump fuel. However, if your case doesn't have a pump boss, one of these pumps will be needed. We strongly urge you to run a fuel pressure regulator with this pump, because the needle and seat in the carburetor can only handle 3.5 lbs of pressure and it's common for electric pumps to put out much more than that.

1127025	With fittings
1127025A	W/out fittings
1127024	Mount

## FUEL PRESSURE REGULATOR



This regulator adjusts the fuel pressure for your carburetor. It prevents fuel from blowing by the needle and seat and flooding your motor with gas. This is crucial when running an electric fuel pump.

1127026	Regulator
1127027	Mount
1127111	90 degree fittings (2)
1127112	Straight fittings (2)

## STAINLESS STEEL FUEL LINE



This is stainless steel braided fuel line. We do not recommend this line unless you are using the screw in fittings everywhere. Don't use clamps because they're too loose and might come off. The hose size is 6AN.

1127101S5	5 feet
1127101ALF	Hose end #6 45 degrees
1127101ALM	Adapter 1/8 pipe #6 90 degrees
1127102ALF	Hose end #6 90 degrees
1127102ALM	Adapter 3/8 pipe #6 90 degree
1127103ALM	Adapter #6 1/8 MPT straight
1127104ALM	Adapter Weber #6 IDA straight
1127105ALM	Fitting IDF Carb
1127106ALM	Adapter tee #6
1127108ALF	Hose end #6 straight
1127109ALM	Adapter 3/8 pipe #6 straight
1127110ALM	Adapter 3/8 pipe #6 straight with 1/8NPT hole
1201511	In line fuel filter #6 end cleanable

## BRASS FUEL LINE TEE



This is a brass tee for dual carbs. We recommend you use this brass tee instead of a plastic one.

1127100	Fuel line hose clamp	All
1127109	1 1/4" tee	All
1127110	5/16" tee	All

## D/P UNIVERSAL INTAKE MANIFOLD



This is the center section of an intake manifold for dual port heads. You can run a 30PICT carb or a 34PICT carb on it. If you have a single carb set up, make sure the heat riser is working properly.

1129025	1500-1600
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## CARBURETOR SPACER KIT



This raises a stock 28/30PICT carb to clear a 12 volt alternator or generator.

1129027	Kit w/studs, nuts and gaskets
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## WEBER ICT CARB KITS



We have found this kit to be a good, cheap dual carb kit for a stock motor. Throttle bushings wearing out over time is the only bad thing we can say about them. We suggest you change the fuel hose in the kit to German hose.

1129033	Single port kit	1600
1129034	Dual port kit	1600
2129034	Pancake motor	1700-2000
1129513	Hex bar linkage kit	1600

## KADRON CARB KIT



We have found this kit to be a good, cheap dual carb kit for a 1600cc motor. The only thing we don't like is the throttle bushings wear out over time and you need to change the fuel hose it comes with to German hose.

1129039	Kadron carb kit for dual port
1129511	Linkage
1129611	Air cleaner kit with housings, pair
1129611EL	Replacement air cleaner element each
1129700	Manifolds only
1129804	Carb base gaskets, pair
1129139	Replacement butterfly assembly

## WEBER DUAL CARB KITS



We've found that dual carbs work better than any single carburetor set up. We've done extensive tests on different carbs and it would take hours to explain the pros and cons of them all. Nevertheless, if you would like more information on different combinations, just give us a call

and we'll give you the details. Here are a couple of things to think about. Carbs don't care about the size of your engine. All that a carb knows is vacuum. That's it. Period! Now after saying that, we have to state we find a lot of people over carbureting big engines. We recommend 40IDF Webers on built-up 1600cc, as well as, 2007cc or for that matter on any Type 4 motor. We find that Weber carbs give the best horsepower and reliability over any other carb set up we have tried. Yes, we know they're spendy; but we feel it's the last carb set up you'll buy for your engine. Kits come with carbs, hex bar linkage, manifolds, air cleaners and fuel line. However, the fuel line and the plastic tee are two things we don't like about the kits. Never, ever run American-size fuel line on your motor unless you like engine fires. Use German hose.

1129040	40 IDF dual kit	upright
1129040E	Empi 40 IDF kit	upright
1129044	44 IDF dual kit	upright
1129044E	Empi 44 IDF kit	upright
2129040	40 IDF dual kit	pancake
2129040E	Empi 40 IDF kit	pancake
2129044	44 IDF dual kit	pancake
2129044E	Empi 44 IDF kit	pancake
1129510	Replace hex bar linkage	upright
2129510	Replace hex bar linkage	pancake
1129701	Replace manifolds (pr)	upright
2129701	Replace manifolds (pr)	pancake
1129802	Replace base gaskets (pr)	upright

## IDF CARB REBUILD KIT



This kit has the gaskets, o-rings, accelerator pump and needle and seat to rebuild an IDF carb.

1198578	For one carb
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## WEBER IDF, ICT JETS



These are some of the most common jets. We'll be happy to help you with your jetting, but we'll need to know the particulars. So before you call, get some information ready about your engine, like size, compression ratio, etc.

### ICT JETS

1129304040	Idle 040, each,	ICT
1129304045	Idle 045, each	ICT
1129304050	Idle 050, each	ICT
1129304055	Idle 055, each	ICT
1129304060	Idle 060, each	ICT
1129404150	Air 150, each	ICT
1129404160	Air 160, each	ICT
1129404170	Air 170, each	ICT
1129404175	Air 175, each	ICT
1129404180	Air 180, each	ICT
1129404185	Air 185, each	ICT
1129404190	Air 190, each	ICT
1129504115	Main 115, each	ICT
1129504120	Main 120, each	ICT
1129504125	Main 125, each	ICT
1129504130	Main 130, each	ICT
1129504135	Main 135, each	ICT
1129504140	Main 140, each	ICT
1129504145	Main 145, each	ICT
1129504150	Main 150, each	ICT

### IDF JETS

1129305040	Idle 040, pair	IDF
1129305045	Idle 045, pair	IDF
1129305050	Idle 050, pair	IDF
1129305055	Idle 055, pair	IDF
1129305060	Idle 060, pair	IDF
1129305065	Idle 065, pair	IDF
1129305070	Idle 070, pair	IDF
1129324	Acc pump jet (blank)	IDF
1129405150	Air 150, pair	IDF
1129405160	Air 160, pair	IDF
1129405170	Air 170, pair	IDF
1129405175	Air 175, pair	IDF
1129405180	Air 180, pair	IDF
1129405185	Air 185, pair	IDF
1129405190	Air 190, pair	IDF
1129405200	Air 200, pair	IDF
1129405210	Air 210, pair	IDF
1129405220	Air 220, pair	IDF
1129505115	Main 115, pair	IDF
1129505120	Main 120, pair	IDF
1129505125	Main 125, pair	IDF
1129505130	Main 130, pair	IDF
1129505135	Main 135, pair	IDF
1129505140	Main 140, pair	IDF
1129505145	Main 145, pair	IDF
1129505150	Main 150, pair	IDF
1129505155	Main 155, pair	IDF
1129505160	Main 160, pair	IDF
1129505002	Emulsion tube F2, pair	IDF
1129505007	Emulsion tube F7, pair	IDF
1129505011	Emulsion tube F11, pair	IDF
1129508	Choke block off plate	IDF

## AIR CLEANERS FOR THE 40IDF



This is a replacement air cleaner for the Weber 40 IDF. When they get dirty, just wash them in dish soap and let them drip dry. Once they're dry, reoil and pop them back on. Never use air to blow them out or you will ruin them. They are sold each.

1129601	Air cleaner assembly 3 1/2" tall
1129601HD	With aluminum top and bottom 3 1/2" tall
1129600	Element only 3 1/2" tall
1129601HD6	With aluminum top and bottom 6" tall
1129601EL6	Replacement element 6" tall

## ROUND AIR CLEANERS



This air cleaner take the place of a stock air cleaner. They flow better than the original air cleaner. If you live on a dusty road, we suggest you buy a better air cleaner than this or stay with stock and clean it frequently. Basically, these air cleaners are for street driven vehicles.

1129602	2 3/8" tall, paper	1600
1129602EL	Replacement element	1600
1129603	2 3/8" tall, gauze	1600
1129603EL	Replacement element	1600
1129604	2 1/2" tall, gauze	1600
1129604EL	Replacement element	1600
1129605	3 1/2" gauze	1600
112605EL	Replacement element	1600
1129606	2" tall, paper	1600
1129606EL	Replacement element	1600
1129607	3 5/8" gauze	1600
1129607EL	Replacement element	1600
1129608	4 7/8" gauze	1600
1129608EL	Replacement element	1600
1129609	2 3/4" foam	1600
1129609EL	Replacement element	1600
1129610	3" paper	1600
129610EL	Replacement element	1600

## UNIVERSAL NYLON BREATHER FITTING



This fitting can be used when routing your breather hose into your air cleaner. We don't like doing that because your carb will now be sucking oily air. We suggest using some kind of breather filter instead.

1129614F	Fitting
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## POD STYLE AIR CLEANER



These air cleaners are a sealed unit. The top and bottom do not come off, but they are washable. There is no tube for the crank case breather, so we suggest you buy a breather filter as well.

1129616	2" neck	40 hp-1600
1129617	2 5/8" neck	40 hp-1600

## INTAKE MANIFOLD END CASTINGS



This pair of aluminum end castings are for use with a center section manifold. They're available for single port or dual port heads. They come with boots and intake gaskets.

1129708	Dual port (pr)
1129709	Single port (pr)

## PAPER INTAKE GASKETS



These gaskets are for upright dual port engines. Never use any type of sealer on these gaskets. They are sold in pairs. The stock metal dual port gaskets are junk and only fit well in the garbage can.

1129717	Pair	1600
1129718	Large OD, pair	1600
2129707	Pair	1700-2000

## SPLIT BOOTS FOR INTAKE MANIFOLD



These boots can be put on without taking the intake manifold apart. They should be used only in an emergency. They really suck and that's an understatement. We find they don't stay on and leak air because they fit poorly.

1129729	Pair
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## URETHANE INTAKE MANIFOLD BOOTS



These boots are way better than stock. We highly recommend using them.

1129729RD	Red (pr)
1129729BK	Black (pr)

## HEAVY DUTY PRESSURE PLATE BOLTS



These are hardend bolts, 10.9 instead of the stock 8.8. If you are using a 2600 lbs pressure plate we recommend using these heavy duty bolts. The torque on these bolts is 18 ft. lbs., no more, no less.

1141024	(6pc)	1200-1600
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## HEAVY DUTY CLUTCH PRESSURE PLATE



We only offer brand new pressure plates, because so-called rebuilt pressure plates never quite come up to factory specs. We use a 1700 lbs pressure plate on most big-engine, daily drivers. Heavier ones should be used on your Friday/Saturday night race car.

1141025	1700lbs	1500-1600
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## HEAVY DUTY CLUTCH ARM KITS



This kit includes a heavy duty arm, urethane housing bushing, clutch return spring and the retaining clips. If you need a new clutch arm, this kit's a very good idea. See URETHANE CLUTCH ARM BUSHING KIT for installation. Note: Before installing try the splined arm to make sure it fits well. If it doesn't, you'll need to do a little spline clean up with a file.

1141701A	Arm only, uses 1198026	61-67
2141701A	Kit	68-70
2141701B	Kit	71-75
2141701C	Kit	76-79

## URETHANE CLUTCH ARM BUSHING KITS



This kit contains a quality urethane bushing, a clutch return spring and retaining clips to install the throw out bearing arm in the trans. The engine has to be pulled out in order to put the bushing on. Start by removing the throw out bearing. Now take the clip off the cable arm and remove the arm. Go to the backside of the bellhousing and remove

the 11mm bolt that sets the bushing. Push the arm from the inside out towards the drivers side; this will push the bushing out. Now for the fun part, grease up the arm where the bushing rides. Install the inner clip on the arm then install the arm without the bushing. Slide the new bushing from the outside over the arm, making sure that the indent hole lines up with the hole on the backside of the trans. Install the alignment bolt in the bushing and then replace your throw out bearing. Now replace the clutch return spring, the bell, and the clutch cable arm. Put on the clip. Don't try to put the spring over the arm until you have this outer clip on. Take a phillips screwdriver and wrap it around the arm; hook the spring and pry it backward. This will install the spring back on the arm without you loosing your sanity or a finger.

1198026	16mm	61-75
1198026A	20mm	76-79

## DUAL PORT HEAD STUD KITS



If you are converting a single port engine to a dual port or if you have a brand new case; these are the head studs you're looking for. We prefer using 10mm studs over the 8mm studs, because 10mm will hold it's torque, whereas the 8mm will not. Make sure your case has the appropriate case savers. These kits come with studs, nuts and washers. Torque 8mm studs at 18 ft. lbs. and the 10mm at 28 ft. lbs.

1198035	8mm kit
1198036	10mm kit

## BIG BORE PISTON AND CYLINDER KITS



All kits come complete with pistons, cylinders, rings, wrist pins and clips. Kits will require machine work to the heads and case. Before you buy these, you should have a good understanding of how to set the compression ratio. For more info, call us, because there's lots you need to know. Many people think that bigger motors are unreliable. This is just not true. When the motor is properly designed and built, it'll be very dependable. We will be happy to explain how to do this. Here is one more thing to think about. You will not realize the full potential of the bigger pistons, unless you run bigger valved heads. Note: The only thing we don't like about these kits are the rings and the wrist pin clips.

1198083	83mm slip in	40hp
1198087	87mm slip in	1600
1198088A	88mm machine in for 69 stroke	1600
1198090A	90.5mm machine in for 69 stroke	1600
1198090B	90.5mm machine in for 78 stroke	1600
1198088A	88mm machine in for 69 stroke	1600

## CAST PISTON RING SETS



These rings are cast iron. We prefer them over the chrome rings that come in the big bore kits. It's true that with chrome rings your barrels won't wear as much, but that's because they never seat. We suggest you take the rings off the piston and give them to your girlfriend for bracelets. They're a cheap gift and she won't be around much longer anyway, if you don't stop spending so much time on your motor. Be careful putting the rings on, as they can break. Always use spreader pliers.

1198159	87mm 2X2X5, set
1198160	88mm 1.5X1.5X5, set
1198161	90.5mm 1.5X2X4, set
1198161A	90.5mm 2X2X4, set

## HEADER SYSTEMS



We like to run EMPI deluxe headers because they have the best fit, as well as, a good merge on the collector. The collector is the most important part of a header. We suggest using a single quiet muffler on engines that have a stock carburetor or two, one-barrel carbs. You should run dual mufflers or one giant muffler on engines that have two, two-barrel carbs. If you're using the stock intake manifold, you'll need to drill out the heat riser stands on the header.

1251000	Header only	1500-1600
1251000CC	Header only, ceramic coated	1500-1600
2251002	w/single quiet muffler	72-74
2251010	Header only	72-74
2251005	Single muffler only	1500-1600
2251006	Dual mufflers only	1500-1600
2251006CC	Dual mufflers only, ceramic	1500-1600
2251007	Single muffler only	72-74
2251003	w/single quiet muffler	76-78
2251008	Single muffler only	76-78
2251009	Header only	76-78

## HEADER TO HEATER BOX FLANGE KIT



This kit comes with four flanges, two for the heater boxes and two for the header. We hear people complain about exhaust fumes in the bus, especially when the heater is on. This is because the stock-style clamps tend to leak. Loose heater boxes are another cause of leaking exhaust. We urge you to flange your heater boxes and header. Flanging is the best way to get rid of the leaking exhaust problem. We also suggest you use the stock metal exhaust gasket between the flanges instead of the paper gaskets.

1251200	Kit	upright
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## HEAT RISER BLOCK OFF PLATES



When you upgrade to dual carbs, these plates block off the heat risers on your headers or stock exhaust system. They are sold in pairs and we suggest that you use the stock metal gaskets instead of the paper gaskets they come with.

1251201	Pair	40 hp-1600
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## HEADER TO MUFFLER GASKETS



This is the 3-bolt gasket that goes between the muffler and the header. The bolts tend to come loose after they heat up the first time. Therefore, we suggest that after you replace the gasket, drive the car for a day and tighten the bolts again.

1251202	Small 3 bolt gasket, pair
1251202C	Small 3 bolt copper gasket, each
1251202FL	Small 3 bolt metal flange, each
1251203	Large 3 bolt gasket, pair

## EXHAUST NUTS



These are two of the different types of exhaust nuts. If you are running a larger tubing size on your exhaust, then we suggest using the 12mm or the 11mm nuts. The copper ones don't back off, but when you want to take them off, they tend to pull the stud. We prefer the steel ones.

1251210	Copper 12mm OD (8)	All
1251211	Steel 11mm OD (8)	All

## EXHAUST GASKETS



Paper ones are not our favorite gaskets. However, if you are running larger ports, then you have to use them. If you are not running larger ports, we suggest you stick with stock gaskets. We've had good luck with the copper gaskets too.

1251261	1 3/8", set of 4	40 hp-1600
1251262	1 5/8", set of 4	40 hp-1600
1251261C	1 1/2" copper set of 4	40 hp-1600

## PLASTIC FRESH AIR HOSES



These hoses are made to go from the fan shroud to the H pipes of your motor. They last longer than the paper hose, but aren't as flexible.

1255292PL	Pair	40hp-1600
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## HEATER BOX REPAIR PIPE



This repair pipe fixes the end of your heater box. You will need to cut your old pipe back, then drive this pipe into the end and weld it. This gives you a new surface for the clamp.

1255107	Repair pipe	1500-1600
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## HEATER BOX TUBES



Also called J-tubes, these fit most header systems and replace the stock heater boxes.

1256091	Pair
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## CONVERSION STARTER BUSHINGS



This bushing is made to mate mismatched bellhousing and starter combinations. When installing, be careful not to mushroom the inner diameter.

1301103	6v starter to 12v trans
1301104	12v starter to 6v trans

## SHIFT BALL



This steel shift ball replaces the factory plastic one in bus transmissions 1968-1979. It will last a lot longer. To replace it requires you to take the nose cone off your transaxle.

2301241	Shift ball	68-79
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## TRANS ADAPTER



This steel conversion mount enables you to install a later style full syncro trans in your 1959 and earlier model bus or truck. The nose cone that works with this mount must be from a 1960-1966 trans, one without a back-up light switch.

2301265	Adapter	-59
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## MAIN SHAFT BEARING THRUST PLATE



This steel thrust plate stops movement of the main shaft bearing and aids in keeping the alignment of the gears on the main and pinion shafts. We highly recommend this plate. The nose cone of your transaxle will have to be removed to install the thrust plate.

2311123 Thrust plate 68-79

## NARROWED ADJUSTABLE FRONT BEAM



This is a brand new beam that has been narrowed 2 inches and has Avis style adjusters already installed. It is made for 1955 to 1965. You can make it work on a 1966-1967 by pressing off the sleeves that come on the factory arms.

2401061F Beam only 55-65  
2411107 Narrowed spring bundle pr 55-67  
2415801F Narrowed tie rods pr 55-67

## AVIS STYLE FRONT ADJUSTER



The Avis style adjuster works in either a link pin or ball joint front end. It has a 4" adjustment.

2401021 Each -79

## URETHANE FRONT SUSPENSION STOPS



These snubbers last a lot longer than stock snubbers. To install them you will have to get the upper arm off the snubber. So if the old snubber is there, cut it off. Put some oil in the hole of the new snubber and drive it on. If that doesn't work, boil some water and set the snubber in it. This will soften up the urethane and make it easier to put on.

1405273BK Black (pr) -62  
1405273RD Red (pr) -62

## SWAY BAR KITS



These heavy duty sway bars help eliminate swaying. We find the SWAY-A-WAY bars fit and work the best. The stock bar flexes rather than transfer the lateral pressure to the other side. Combine this sway bar with a set of KYB shocks and you're set. We highly recommend these bars for those of you who live in windy areas.

2411301 Front and rear 68-79  
2511300 Rear 68-79

## KYB SHOCKS



KYB's are the best selling monotube replacement shock in the U.S.A.. The Gas-A-Just's monotube design and high pressure gas, absolutely eliminate the age old problem of performance fade. This fade is caused in two-tube style shocks, when air is allowed to mix with fluid and it producing foaming. KYB's Gas-A-Just shocks constantly push downward, seeking adhesion to the road. Stock shocks depend on gravity or springs to re-extend them, leaving you with less rubber on the road through turns or bumps. Combine KYB's with heavy duty sway bars for ultimate stability. You might be slow, but you don't have to be blown off the road. KYB have a lifetime guarantee. We highly recommend KYB shocks.

1413000 Front GR2 lowered 55-79  
1413001 Front GR-2 55-79  
1413002 Front Gas-A-Just 55-79  
1513001 Rear Gas-A-Just 55-67  
1513001 Rear Gas-A-Just lowered 68-79  
2513001 Rear Gas-A-Just 68-79  
2413002 Front GR2 Vanagon  
2513002 Rear Gas-A-Just Vanagon

## LOWERED SPINDLES



Do you have a lowered beam now? They should have come with a kidney belt and a mouth guard. Here's the answer to your prayers. Put lowered spindles on your bus and it'll ride like it did stock, plus you'll get rebuilt king pins, too! These spindles are made to match the rear swing kit, a drop of 3.5". Many people think we cut the spindle off and relocate it, but that's not true. We relocate the king pins. There's one other piece you will need to finish out this kit and that is a tie rod with ends from a 1968-1979 bus, part number 211 415 801F. This tie rod is necessary to give more frame clearance. These spindles, like the stock ones are sold on an exchange basis.

2498211A Pair 55-62  
211 498 211ASY Core, left 55-62  
211 498 210ASY Core, right 55-62  
2498211B Pair, call first 63  
211 498 211BSY Core, left 63  
211 498 210BSY Core, right 63  
2498211C Pair 64-67  
211 498 211CSY Core, left 64-67  
211 498 210CSY Core, right 64-67

## STRAIGHT SWING AXLE CONVERSION



Pre 1967 bus owners can now lower the rear of their bus 3 1/2" or more. This will remove the low-geared reduction boxes and thus obtain engine saving highway gearing. The basic, bolt-on kit comes with spring plates, axle tubes, gaskets and complete instructions. Other components that will be needed are the long axles and brake assemblies from a 1968 Bug or any swing axle Type 3. You can use your existing bus transaxle; however, you will need to flop your ring gear over. Another way to go, is to use an entire trans out of a Bug or Type 3. These kits are sold on an exchange basis for the spring plates. This kit lowers the rear at least 3 1/2" and there's no way to raise it from there; so if 3 1/2" is too low check out the IRS kit.

2501101 Kit 55-67  
2501101CO Spring plate core 55-67  
2501105 Left axle tube only 55-67  
2501106 Right axle tube only 55-67  
2501109 Spring plates only 55-67  
2501108 E. brake adapter only 55-67

## EARLY BUS IRS CONVERSION KIT



This kit converts all 1967 and earlier buses to independent rear suspension. By rotating the brackets on the torsion tube, you can raise and lower your bus without altering the wheel camber. The other components that you'll need are the whole ass end of an IRS Bug, Thing or Type 3: the control arms, drums, stub axles, CV joints, trans, metal brake lines and all the nuts and bolts for the arms. This kit comes with bolt-on control arm mounting brackets, special spring plates and proper length Wolfgang axles. Sold on an exchange basis for the spring plates. If you want stock height, you'll need "Thing" suspension. Type 1 or 3 will lower it a minimum of 1.5".

2501102 Kit 55-67  
2501102CO Spring plate core 55-67  
2501111 Pivot brackets only (pr) 55-67  
2501110 Axles only (pr) 55-67  
2501112 Spring plates only (pr) 55-67  
2501107 Upper shock mount only 55-67  
181 501 263 Thing stub axle  
181 517 283A Thing final drive

## WHEEL ADAPTERS



We make wheel adapters for some of the more common drums and wheels. A lot of people think that wheel adapters are weak and you will have problems. Well, that's only partially true. The truth is, if you go from a small pattern drum to a large pattern wheel, or a small pattern drum to a small pattern wheel, then the adapter is flat and is as strong as the drum or stronger. But if you go from a large pattern drum to a small pattern wheel, the adapters are weak because they have to flower out. Wheel adapters are sold in pairs. (4-130 pattern, Bug 68- and Type 3, 66-) (5-205 pattern, Bug-67 and Bus-70) (5-112 pattern, Bus 71-) (5-130 pattern, Porsche). The first number is your drum or rotor and the second number is your wheel.

1501602	4-130 to 5-130 Aluminum 1"
1501606	4-130 to 5-205 Steel 3/8"
1501613	5-205 to 5-205 Steel 1/2" (spacer)
2501602	5-112 to 5-205 Steel 1/2"
2501603	5-112 to 5-130 Steel 1/2"
1501608	5-130 to 5-205 Steel 1/2"
1501614	5-205 to 5-130 Aluminum 1"

## REAR CAMBER KIT



This is a type of sway bar for swing axle cars. We find they work very well. If you have KYB shocks and a heavy duty front sway bar then this is the last link. It installs onto the side plates of your transmission.

1511300	Kit	-67
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## URETHANE FINAL DRIVE SEAL



These seals fit into the CV joint flange to keep the axle from beating the transmission cups and to keep the transmission oil out of the CV joint. Sold in pairs.

2517289	Pair	68-
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## SWING AXLE BOOT KITS



Longer lasting than stock, these are great boots for your swing axle. They come in a variety of colors and are sold in pairs. Installation hardware is included. The boots will last longer, if when putting the boots on, you don't point the seam straight up. The seam should be at an angle, so when the axle goes up and down it doesn't work the seam.

1598021BL	Blue
1598021RD	Red
1598021YL	Yellow
1598021BK	Black

## EMPI 5-SPOKE WHEELS



These are the most popular mags. If you are running reduction boxes, you might have some clearance problems with the drum. 1962 and earlier buses with drums in the front will require a 1/2" spacer to clear the snout of the drum. They take a shoulder type of lug nut.

1601027BK	Black, 5 Lug
1601027PL	Polished, 5 Lug
1601027SL	Silver, 5 lug
1601150	Old version replacement cap, black
1601150CH	Old version replacement cap, chrome
1601150NRC	New Emipi wheel replacement cap

## BRM WHEELS



This is a reproduction of the BRM wheel of days past. They are made by Flat Four of Japan.

1601029	Black, 15x5.5, 5 lug	-67
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## POLISHED PORSCHE FUCHS WHEELS



One of the most popular wheels people put on their VW's. This is a reproduction wheel made by Flat Four of Japan. They do not come with caps. The wheel pattern is 5x130.

1601030	Polished, 15x4.5, 5 lug
1601031	Polished, 15x5.5, 5 lug

## EMPI ALUMINUM WHEEL CENTER CAPS



This is a really nice cap for your Emipi 5-spoke wheel. They come polished with an Emipi logo.

1601150AL	Short, (4)
1601150ALT	Tall, (4)

## CHROME KNOCK-OFFS



These are dress up caps for mag wheels. They are sold in sets of 4.

1601151	2-spoke
1601152	3-spoke

## WHEEL STUDS AND NUTS



These are studs and nuts for different types of wheels.

1601099	14X1.5 concave nuts only 3/4" long (5)
1601100	Press in stud 14X1.5 1.855 long (5)
1601101	Press in stud 14X1.5 2.20 long (5)
1601102	14X1.5 concave nuts (5)
1601103	14X1.5/1/2-20 studs only (4)
1601104	12X1.5 studs only (5)
1601105	1/2-20 chrome nuts only concave (4)
1601106	1/2-20 chrome nuts only shoulder (4)
1601107	12X1.5 chrome nuts only concave (5)
1601108	12X1.5 chrome nuts only shoulder (5)
1601109	12X1.5 chrome nuts and studs concave (5)
1601110	14X1.5/1/2-20 chrome nuts and studs shoulder (4)
1601111	14X1.5/1/2-20 chrome nuts and studs concave (4)
1601112	12mmX1.5 chrome nuts and studs shoulder (5)
1601123	Replacement flat washers for shoulder nuts (5)
1601124	Porsche style lug nut, aluminum, 14X1.5 (5)
1601125	Porsche style lug nut, black, 14X1.5 (5)

## CHROME LUG BOLTS



This is just a stock style bolt that is chromed. They're handy if you have any kind of mag that takes a concave style bolt.

1601113	Chrome stock lug bolts 12mm (5)
1601115	Chrome stock lug bolts 14mm (4)

## CHROME WHEEL LOCKS



These protect your mags from theft. They are sold in sets of four.

1601116	Wheel locks nuts shoulder 1/2-20 (4)
1601117	Wheel locks nuts concave 1/2-20 (4)
1601118	Wheel locks nuts concave 12X1.5 (4)
1601119	Wheel locks nuts shoulder 12X1.5 (4)
1601120	Wheel locks bolt concave 14X1.5 (4)
1601121	Wheel locks bolt concave 12X1.5 (4)

## EMPI WHEEL CAP BADGE



These decals have the Empi logo on them. They are used on knock-offs or as a replacement for the decals on your center caps. They have an adhesive back for easy application.

1601154 Set of 4

## CHROME HUB CAPS WITH EMBLEM



These are the most popular hub caps for chrome rims. They're also known as nipple caps.

1601157 5 lug wheel w/Empi logo -67  
1601158 5 lug wheel w/Stuttgart logo -67

## MASTER CYLINDER ADAPTER KIT



This kit allows you to run a 71-79 bus master cylinder on a pre 66 bus. You will need this kit for any disc brake conversion. It also allows people with 67 buses to replace their hard to find, expensive master cylinder with the cheaper 71-79 cylinder. To complete your master cylinder change, you will need the brake fluid reservoir from a VW Rabbit.

2611011 Adapter kit 55-67  
867 611 301B Rabbit reservoir  
211 611 021AA Master cylinder

## BILLET MASTER CYLINDER RESERVOIR WITH CAP



If you're tired of replacing the plastic reservoir this is the item for you. This polished aluminum reservoir should be the last one you have to purchase.

2611012 For 211 611 011J

## STAINLESS STEEL BRAKE LINES



These stainless steel braided flex lines don't swell like the original rubber hoses and they make the undercarriage look a lot nicer. Don't forget to buy some brake fluid when purchasing these lines. See BRAKE MASTER CYLINDERS

for a hint on bleeding your brake system.

1611701A Front (pr) 55-67  
1611775A Rear (pr) 55-67  
1611750A Kit (4) 55-67

## FRONT DISC BRAKE CONVERSIONS KITS



This kit allows you to bolt on disc brakes to your bus king and link pin front end. The parts needed to complete the job are the rotors, calipers, lug nuts and caliper mounting bolts off of a 73-79 bus. This kit comes with hubs, caliper brackets, seals, lock tabs, and bolts to mount the caliper bracket. If your bus is a 66 or earlier, you'll also need the

master cylinder kit. We suggest you use a 15" rim with this kit, since the kit allows you to use the flat steel adapter. If your bus is a 1963 please call.

2615107A Kit 55-62  
2615107B Kit 64-67

## EMPI BUMPER STEP



This is a nice repro of the original front bumper step. It mounts to the front doglegs of your early bus.

2707291 Pair 55-67

## SHIFTER LOCK FOR STOCK SHIFTER



This is a great theft deterrent; it locks up your stock shifter. To install this product, you will need to buy a quick shift kit part number 1711110A.

1711099 Shifter lock -67

## GEAR SHIFT EXTENSIONS



Gear shift extensions angle back and add about 5" of length to your stock shifter. This allows you to reach the shifter without leaning forward.

2711098 L Bend 55-67  
2711098PL L Bend polished 55-67  
2711099 S Bend 55-67  
2711099PL S Bend polished 55-67

## CUSTOM SHIFTERS



Both aftermarket shifters listed here, shorten the shift pattern considerably. This gives you a sensation of performance and it gets rid of that sloppy feel of the stock unit. Both shifters have reverse lockout.

2711102 Empi trigger shifter 60-79  
2711103 Scat Drag Fast shifter 60-67  
2711104 Scat Drag Fast shifter 67-79

## QUICK SHIFT KITS



This kit mounts under your stock shifter to shorten the throw. They're easy to install. Note: Use some white grease on all moving parts.

1711110A Aluminum -79  
1711110P Plastic -79

## SHIFT KNOBS WITH SHIFT PATTERN



These knobs are made to fit all stock shifters and come with the shift pattern logo. They're stepped threaded and will accept 7,10, or 12mm threaded shifters.

1711142BK Black leather All  
1711142BR Brown leather All

## SHIFT KNOBS WITH EMPI LOGO



These knobs with the Empi logo are made to fit all stock shifters. They come stepped threaded so they'll accept 7,10, or 12mm threaded shifters.

1711143BK Black leather All  
1711143BR Brown leather All

## BILLET SHIFT KNOBS



These knobs come stepped threaded so they'll fit all stock 7,10, or 12mm shifters. They're made from aluminum and don't have a logo.

1711144B Billet knob All  
1711144BR Billet round knob All

## URETHANE SHIFT ROD COUPLERS



This coupler joins the shift rods. The nice thing about this coupler is it lasts a lot longer than stock. The only draw back is they transmit more noise than the stock coupler. Note: Make sure you safety wire the set screws after you've tightened them up.

1711175	Rear	-67
1711175	Front	-61
1711176	Rear	68-79

## BILLET E. BRAKE HANDLE COVER



This aluminum cover slips over your stock emergency brake handle for that "customized" look.

1711301	Cover	All
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## THROTTLE CABLE EXTENSION



Oops, I missed it by that much! This will add an inch to your cable length.

1721556	Extension	All
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## EMPI LICENSE PLATE FRAME



This is a copy of the original EMPI license plate frame made years ago. They are chrome and blue.

1800100	Front	All
1800100R	Rear	All

## CHROME LICENSE PLATE FRAME



This is a plain chrome license plate frame.

1800101	Chrome frame	All
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## "D" ORIGIN PLATE W/BACKET



This is the "D", for Deutschland or Germany, plate of origin for that Euro look. They were originally used to show other motorists what country you were from.

1800103	W/bracket	
1800103B	Bracket only	

## SPARE TIRE MOUNT AND COVERS



This mounts the tire on the front of the bus and gets it out of the interior. Exchanges your cool look for the baja bomber look. It can increase wind resistance. Fits 55-79

2805001	Mount	55-79
2805002BK	Cover black	55-79
2805002WH	Cover white	55-79

## BRAS



These bras are made of the highest quality material available for their use. Bras for buses up to 67 are made by Wolfgang and bras 68 on are made by Empi.

2805012	W/o turn signal holes	-67
2805013	W/bullet turn signals	56-61
2805014	W/large turn signals	62-67
2805015	Bottom turn signals	68-72
2805016	Top turn signals	73-79
2805017	Vanagon, air cooled	80-83

## BUS COVERS



This is a deluxe cover. Not a cheapo cover. It consists of four materials offering the highest level of protection against all weather conditions. The three, thick water resistant outer layers provide protection from the sun and rain and yet maintains a high level of breathability.

The inner layer is diaper soft and protects against scratches. They're custom tailored and have mirror pockets.

2817021	Bus	50-72
2817022	Bus	73-79
2817023	Camper	68-92

## MUD FLAPS



These mud flaps come with an Empi logo. They come black with a white logo or white with a black logo.

2817805BK	Black with white logo (pr)	-79
2817805WH	White with black logo (pr)	-79

## SIDE SCOOPS



These air scoops are made of plastic and sold in pairs. This is a sure way to increase the air flow to the engine. They should be painted to make them last longer.

2821200	Pair	-67
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## FRONT DOOR VENT SHADES



They are chrome plated and sold in pairs

2831000	Pair	68-79
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## DOOR LOCK PULLS



If your original door lock pulls are broken or faded, these are really nice replacements. They come either chrome with black knobs, chrome with a wood knobs or billet style.

1837187	Chrome and black, pair	68, 74-79
1837188	Billet, pair	68, 74-79

## BILLET STYLE WINDOW CRANKS



These window cranks are made of aluminum. This is a great way to dress up the interior of your bus.

1837581	Pair	68-79
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## SPORT STYLE WINDOW CRANKS



These window cranks are a nice way to give the interior of your car a sporty look. They're much stronger than the stock window cranks and door handles. They come chrome with black knobs. Sold in pairs.

1837581B	Window crank, black	68-
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## HD STOCK STYLE WINDOW CRANKS



These window cranks look just like the original stock ones but are much more durable.

1837581HD	Pair	68-
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## UNIVERSAL VENT WING LOCK



This aftermarket lock secures your vent wing and helps to keep it from being opened.

1837639	Pair	68-
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## SAFARI WINDOWS



Safaris let those warm, balmy breezes blow through your bus. Kits come complete with glass, seals and all the necessary mounting hardware. The latch tabs and frames easily screw in, but we suggest you weld in the three brackets that hold the slides. Easy to follow instructions allows for installation in under two hours with basic hand tools with the exception of the brackets that have to be welded in. They come powder coated white or polished stainless steel.

2847100WH	White Safari kit	55-67
2847100SS	Stainless Steel Safari kit	55-67
2847100HW	Hardware kit	55-67

## REAR SAFARI WINDOWS



This kit allows the rear window to pop out like the front windows. There are two tabs to be welded in and then the rest of the kit screws in. On the truck rear window there is no welding required. We don't recommend you open this window, unless you have the front windows open because it will suck exhaust into the bus. They come powder coated white or polished stainless steel.

2847104WH	Small, white	50-54
2847104SS	Small, stainless steel	50-54
2847104HW	Hardware kit for small	50-54
2847101WH	Small, white	55-63
2847101SS	Small, stainless steel	55-63
2847101HW	Hardware kit for med.	55-63
2847102WH	Deluxe, medium, white	55-63
2847102SS	Deluxe, medium, s/steel	55-63
2847103WH	Large, white	64-79
2847103SS	Large, stainless steel	64-79
2847104HW	Hardware kit for large	64-79
2847104WH	Truck, white	55-66
2847104SS	Truck, stainless steel	55-66
2847104HW	Hardware kit for small	55-66

## POPOUT WINDOW KIT FOR LATE TRUCK



This popout window kit is a vintage style assembly replacement for the 68-79 double cab rear passenger window. A proper factory like installation will require some welding.

2847105	Kit	68-79
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## SAFARI SEAL BODY TO FRAME



This seal, that the safari window closes against, goes on the body of the bus. They're not like the original style seals. We've had better luck with this seal and it's cheaper.

2847121A	Front (pr)	55-67
2847521A	Small rear	55-63
2847521B	Deluxe, medium rear	55-63
2847521C	Large rear	64-79

## CHROME SCRIPTS



These aftermarket scripts easily attach to your hood or anywhere else you choose to put them.

1853601	Cal-Look	All
1853602	Street Machine	All
1853603	Hot Rod	All
1853604	Street Rod	All
1853605	Empi	All
1853606	Empi GTV	All

## PLASTIC GLOVE BOX



Replace that stock cardboard glove box with a durable plastic box. These easy to install glove boxes fit buses 1968-1979.

2857100	Plastic	68-79
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## EMPI MINI SPYDER MIRRORS



These mirrors come in either black with blue or clear non-glare glass. They have a universal mount and are easy to install.

1857512	W/blue glass	All
1857519	W/clear glass	All

## EMPI MINI SPRINT MIRRORS



Mirrors come in a black housing with either blue or clear, non-glare glass, have universal mounting and are easy to install.

1857513	Lt, w/blue glass	All
1857514	Rt, w/blue glass	All
1857517	Lt, w/clear glass	All
1857518	Rt, w/clear glass	All

## EMPI SPYDER RACE MIRRORS



These mirrors come in black with blue non-glare glass. They have a universal mount and are easy to install. Sold in pairs.

1857515	Black w/blue glass pr	All
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## EMPI BRAVA MIRRORS



These mirrors come in black with blue non-glare glass. They have a universal mount and are easy to install. Sold in pairs.

1857516	Black w/blue glass pr	All
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## CUSTOM SEAT COVER SETS



Like the custom door panels these car seat covers are a great way to customize the interior of your bus. The part numbers are the basic numbers and we will ask you for the color and material you want when you order. We personally like the quality of these

TMI car seat covers.

2881402CU	Front buckets	62-67
2881404CU	Front 1/3-2/3	62-67
2881405CU	Front 1/3-2/3	68-73
2881406CU	Front 1/3-2/3	74-79
2885804CU	Rear	59-64
2885805CU	Rear	65-73

## BATTERY MAT KIT



This mat goes under the battery to help prevent corrosion if you don't have a dry cell battery. Comes with terminal pads.

1900010	3 pc kit	All
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## ALT. OR GENERATOR BACKING PLATE



Of the three-piece Alt/Gen tin set, this is the large flat piece that shows. This backing plate fits an alternator or the 30 amp generator.

1903031CH Chrome 1600

## ALTERNATOR OR GENERATOR TIN



These are the three pieces of tin that go on the back of the generator or alternator. Install the flat backing plate on first with the hole down. Then place the small ring on top of that and then the last piece with the vent facing down. When you install the generator into the fan shroud, the wiring posts should be at 2 o'clock.

1903032 3pc (12v) 1600

## FINNED ALT OR GEN BACKING PLATE COVERS



This transparent cover fits over the stock or chrome backing plate to dress it up.

1903031BL	Blue	1600
1903031CL	Clear	1600
1903031RD	Red	1600
1903031GL	Gold	1600
1903031SM	Smoke	1600

## CHROME 12V ALT. OR GENERATOR PULLEY



This is a stock generator pulley that has been chromed. It only comes in 12v and fits all upright motors. Make sure that you use eight shims on all pulleys. If you don't, you will likely destroy the pulley and generator. See stock GENERATOR PULLEY for installation.

1903109CH Chrome upright

## "SPIN TRU" 12V ALT/GEN PULLEY



The best quality pulleys available. As the name implies they spin true. See stock GENERATOR PULLEY for installation.

1903109BHD	Black	12v
1903109CHD	Chrome	12v

## TRANSPARENT PULLEY COVERS



This plastic finned cover fits on the generator pulley. It comes in five different colors and fits all upright motors. It's sole purpose is for looks.

1903110BL	Blue pulley cover	1600
1903110CL	Clear pulley cover	1600
1903110GL	Gold pulley cover	1600
1903110RD	Red pulley cover	1600
1903110SM	Smoke pulley cover	1600

## CHROME ALT. OR GENERATOR STRAP



This chrome strap holds the alternator or generator to the stand.

1903141 12v 1600

## HEAVY DUTY ALT. OR GEN. STRAP



This strap is much stronger than the stock strap, not that you need a super strap to hold the alternator or generator. We like them because they're easier to put on and tighten.

1903141B 12v 1600

## CHROME GENERATOR NUT AND SPACER



This aftermarket chrome cap nut and spacer hold the generator pulley on. It can be used on any upright motor. Make sure you use 8 shims or you will destroy the pulley and generator. See stock GENERATOR PULLEY for

installation.

1903183 Two pieces 1200-1600

## GENERATOR BRUSH COVER



On all upright motors, this plastic cover goes over the top opening of the generator to keep dirt out. If you are going to use this, be sure to use only one so the generator can vent. If you cover both openings, the generator will overheat.

1903531 12v upright

## STAINLESS STEEL GENERATOR COVER



This is just a cover that fits around a 30 amp generator to give it that chrome look.

1903532 12v upright

## CHROME COIL COVER AND BRACKET



This chrome cover with bracket goes over a coil to dress it up.

1905115 Cover and bracket All

## CHROME DISTRIBUTOR CLAMP



This chrome clamp holds the distributor in time, as well as, holding it onto the case. When it's bolted down it should sit flat on the case.

1905250 Chrome clamp 1200-1600

## BILLET DISTRIBUTOR CLAMP



This machined aluminum clamp holds the distributor in time, as well as holding it onto the case. When it's bolted down it should sit flat to the case. This adds a "hi-tech" look to your engine.

1905250B Billet clamp 40hp-1600

## WIRE SEPARATORS



This is a good way to keep your spark plug wires separated. Never tie-strap plug wires together. Separators come in five different colors and work on all bus years. If you have an aftermarket fan shroud that doesn't have the stock plug wire holders in it, you should use these.

1905451BK	Black	All
1905451BL	Blue	All
1905451CH	Chrome	All
1905451RD	Red	All
1905451YL	Yellow	All

## COMPUFIRE ELECTRONIC IGNITION



The points we get today, aren't what they used to be, so the Compufire is the best way to go. Wearing points gradually and constantly will untune your engine. With the Compufire, your timing remains constant and your motor always runs like it's been freshly tuned. You don't have to

do anything else, except replace the cap and rotor and set the valves. The Compufire easily installs under the distributor cap. Just remove the points and condensor and follow the instructions. I was skeptical, so I kept my points and condensor in the glove box. They've been there eight years and I've only checked the timing once. After installation, make sure you time the motor. We've had really good luck with the Compufire and highly recommend it. The only problem with the Compufire that we've seen is when you hook one up backwards or you leave the key on without starting the motor. Doing either one of these things will burn them up. This unit fits the 009 distributor.

1905530	For 009 distributors
1905530VA	For vacuum advance distributors

## COMPUFIRE DISIGNITION SYSTEMS



This ignition system eliminates points, rotor, condenser and even the cap. It has a high energy coil which fires directly to the plugs. It's water, dust and dirt proof and fires alternate cylinders simultaneously for a cleaner, more efficient fuel burn. This system only works with 009 distributors.

1905531BL	Ignition system with blue wires
1905531YL	Ignition system with yellow wires
1905531RO	Replacement rotor
1905531WR	Extension wire loom
1905531TA	Tach adaptor

## ACCU-FIRE ELECTRONIC IGNITION KIT



This is a cheap knock off of the Compufire Electronic Ignition. It'll work with the late model vacuum advance or the 009 distributors.

1905532	Kit
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## HARD START



This relay fits next to the starter and shortens the travel of amperage needed to engage the starter. Normally, 30 amps travel from the battery, up to the front and then back to the starter. Amperage is commonly lost going this long distance. With a relay, a shorter loop is created with the necessary 15 amps to kick in the starter. If you are having starting problems call us. We'll tell you how to determine if this is what you need or whether it's another problem.

1911021	12v	All
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## ROSSI STYLE HEADLIGHT BUCKETS



The Rossi-style buckets are made to replace your stock headlight bucket assemblies on buses up to 1967. These buckets have no glass in front of the headlight bulb.

1941000	Pair	-79
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## H4 HEADLIGHTS



These are way brighter than the stock headlight and the bulb is removable from the lens, too. This 7" round headlamp replaces your stock headlight.

1941001	Headlight with blub
1941002	Replacement blub

## HEADLIGHT EYEBROWS



This little cover goes between the glass and the chrome ring on your headlight bucket making the bus look like it has eyebrows. They're not the best fitting item and some bending is usually needed to get them to fit correctly. They come chrome plated and are sold in pairs.

1941100	Smooth	-79
1941101	Louvered	-79
1941103	Smooth, black	-79
1941104	Smooth, stainless steel	-79
1941105	Smooth, louvered	-79

## CAT EYES



These chrome pieces go over your headlights giving the illusion of cat eyes.

1941102	Pair	-79
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## FLUTED HEADLIGHT GLASS



These are a copy of the European fluted headlight glass. We suggest you buy new seals when putting them on.

2941115	Pair	-67
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## BLACK HEADLIGHT RINGS



These rings go around the headlights on later cars. If you are going for the Euro look, then this is the way to go. The rings come in black, so just sand lightly and paint them the color of your car. This is much better than painting over chrome.

1941177	Pair	68-79
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## BLUE DOTS



Blue dots were popular back in the 50's. Just drill a hole in your stock tail light lens and put in this blue dot. It makes your red tail lights appear purple.

1945246	Pair	All
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## VOLTAGE DROP



Most people changing their bus to 12 volts use this to drop the voltage on their wiper motor. It does work and will get you by for awhile but your're better off finding a 12 volt wiper motor.

1955113	Voltage drop
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## ELECTRIC WINDSHIELD WASHER KIT



This windshield washer kit has a 12v motor and all mounting hardware and wiring is included.

1955400	Kit	All
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## POS. AND NEG. TERMINAL COVERS



These covers go over the terminals on your battery. We highly recommend using the positive cover as it keeps things from hitting the terminal and possibly shorting out the battery.

1971225	Red positive cover
1971226	Black negative cover

## ROOF RACK



This great looking rack fits on the roof of your bus and clamps down in the rain gutter. Most people like the look of wood slats and we have to admit, they do look good. These racks can be shipped by UPS.

2070274	Wood	-79
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## TRANSPARENT DISTRIBUTOR CAPS



These caps look cool and come in different colors, but that's the only good thing we can say about them. They fit most late model distributors and the 009. If you're going to run this cap, put it on for the car show and then take it off and put your Bosch cap back on for daily driving.

1B03010BL	Blue
1B03010CL	Clear
1B03010RD	Red
1B03010YL	Yellow
1B03010SM	Smoke

## COLORED SPARK PLUG WIRES



These are like the transparent caps, not that great but they look cool. We've found no improvement in power over a good set of Bosch wires. The one thing we did notice and didn't like is they tend to fall off the spark plugs.

1B09001BL	Blue copper
1B09001BLS	Blue suppressed
1B09001OR	Orange copper
1B09001ORS	Orange suppressed
1B09001RD	Red copper
1B09001RDS	Red suppressed
1B09001YL	Yellow copper
1B09001YLS	Yellow suppressed

## HIGH TORQUE STARTERS



These high torque starters work great on performance engines but because they're self-supporting they'll work on a stock engine if the bushing area is wallowed out or if the bushing is gone.

SR15HT	12v, new	67-75
SR87HT	12v, new	76-83?

## VDO PERFORMANCE INSTRUMENTS

Gauges monitor your engine and let you know what's really happening. We highly recommend an oil temp, an oil pressure and a tach. Air-cooled engines like to run between 3200 and 3800 RPMs for any extended time. Normal operating oil temperature should be between 180 and 210.

### COCKPIT



These are VDO's most popular gauges and the ones that made VDO famous. They have a black background with white numbers, and a red pointer. \*Means you need a sending unit.

VDO301020	*Fuel 2 1/16"
VDO310012	*Oil temperature 300 Degree 2 1/16"
VDO310039	Water temp 2 1/16"
VDO310901	Cyl head temp 600 Degree (Kit) 2 1/16"
VDO331020	Hour meter 2 1/16"
VDO332041	Voltmeter 2 1/16"
VDO333051	7K RPM 3 1/8"
VDO333055	7K RPM 3 3/8"
VDO333959	8K RPM 2 1/16"
VDO350040	*Oil pressure 80 PSI 2 1/16"
VDO350041	*Oil pressure 150 PSI 2 1/16"

### VISION



VDO has taken it's "through-the-dial" lighting technology and added it to the red pointer by using fiber optics, it's now possible to illuminate the pointer. In addition, the mounting system has been completely redesigned to offer maximum flexibility and installation ease. Gone are the metal brackets, nuts, and washers. The new VDO Spin-lok 360 degree mounting system consists of a spin-on clamp that actually holds the instrument with 360 degree of force, preventing panel warping or gauge rotation. \*Means you need a sending unit.

VDO301104	Fuel 2 1/16"*
VDO310106	Oil temperature 300 Degree 2 1/16"*
VDO332103	Voltmeter 2 1/16"
VDO333151	7K RPM 3 1/8"
VDO333159	8K RPM 2 1/16"
VDO350104	Oil pressure 80 PSI 2 1/16"*

### COCKPIT WHITE



These are just like the cockpit but have a white face with black numbers and red pointer. \*Means you will need a sending unit.

VDO301216	*Fuel 2 1/16"
VDO310902	Cylinder head temp kit 2 1/16"
VDO332241	Voltmeter 2 1/16"
VDO333251	Tachometer 7K RPM 3 1/8"
VDO333255	Tachometer 7K RPM 3 3/8"
VDO350240	*Oil pressure 80 PSI 2 1/16"

### SERIES 1



These gauges are the best match to the stock gauges. They have a chrome bezel, black background and the numbers and needle are white. \*Means you will need a sending unit.

VDO310312	Oil temperature 300 Degree 2 1/16"*
VDO332341	Voltmeter 2 1/16"
VDO333301	Tachometer 7K RPM 3 3/8"
VDO350303	Oil pressure 80 PSI 2 1/16"

## COCKPIT ROYALE



These gauges have a chrome ring, white background and black needle and numbers. They have a 30's look to them. \*Means you will need a sending unit.

VDO301736	Fuel 2 1/16"*
VDO310709	Oil temperature 300 Degree 2 1/16"*
VDO332702	Voltmeter 2 1/16"
VDO333707	Tachometer 7K RPM 3 1/8"
VDO350702	Oil pressure 80 PSI 2 1/16"*

## ADAPTER



This adapter is needed to hook up the oil pressure and oil temperature gauges for upright motors.

VDO240850	Adapter	-71
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## SENDING UNITS



These are the most common sending units. If you have question about where they go, just call us.

VDO240701	Cylinder head temp wire only, 15 feet long)
VDO323057	Oil temperature 300 1/8-27 NPT adapters
VDO323701	Cylinder head temp sender only, 14mm ID
VDO323705	Cylinder head temp sender only, 12mm ID
VDO360001	Oil pressure 0-80PSI w/o light, 10mmX1.0
VDO360006	Oil pressure 0-80PSI w/light, 10mmX1.0
VDO360021	Oil pressure 0-150 PSI w/o light, 10mmX1.0
VDO360023	Oil pressure 0-150 w/light, 10mmx1.0

## MOUNTING BRACKETS



VDO offers a variety of mounting brackets to choose from.

VDO240027	Metal 1 Gauge 2 1/16" Black
VDO240028	Metal 2 Gauge 2 1/16" Black
VDO240029	Metal 3 Gauge 2 1/16" Black
VDO240100	Cup 2 1/16" short
VDO240101	Cup 2 1/16" long
VDO240102	Cup 3 1/8"
VDO240802	Rubber 1 Gauge 2 1/16"
VDO240803	Rubber 2 Gauge 2 1/16"
VDO240804	Rubber 3 Gauge 2 1/16"

## TOOLS

The following are some of the specialty tools you may need to work on your VW.

### ENGINE STAND



If you're going to rebuild your own motor, it's a good idea to get an engine stand. It makes your life a lot easier. If you buy the bench mount stand, make sure the bench you're mounting it to is also mounted to a wall. These stands are light duty.

T1101024	Bench mount
T1101026	Floor stand
T1101027	Floor stand tray.

### ENGINE DOLLY



If you're like us and have a few motors laying around, these dollies come in real handy when you have to move them around. The front side is open so you can get your floor jack under the motor.

T1101025	Dolly	1200-1600
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### OIL FILLER NUT TOOL



This tool takes off the oil filler. Use a small screw driver and clean out the grooves this tool fits into. We normally use a small 1/2" extention and impact while pushing down hard to get it off. Hint: Push down really hard when turning.

T1101211	1/2" drive
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### VALVE GUIDE DRILL



This drill is used to thin out the wall of the valve guide, so that it will come out without cracking the head. We suggest you leave this up to the machine shop because replacing a head is expensive.

T1101401	Drill
----------	-------

### CRANKSHAFT GEAR PULLER



This tool gets the crank gears off. It's the only tool that will take the gears off without destroying them. Don't forget to take off the snap ring first or you could damage the tool or crank or both.

T1105209	Gear puller	1200-2000
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### FLYWHEEL SEAL INSTALLER



If you're putting more than one engine together we highly recommend getting this installer. Set the seal in place then tighten the bolt until it stops and that's it. Note: The seal sits farther than flush into the case.

T1105245	Seal installer
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### CRANKSHAFT PULLEY PULLER



This is a light duty puller for removing the crank shaft pulley.

T1105253	Pulley puller
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### 36MM SOCKET



This socket fits the flywheel, fan nut, and some rear axles nuts. A very handy socket to have. They come with a 1/2" drive.

T1105272	Socket
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## FLYWHEEL LOCK



This lock works on both 6v and 12v flywheels. It's the right way to lock up the flywheel when setting end play or torquing the flywheel. A screwdriver wedged against one of the bottom studs does not work.

T1105274 Lock

## END PLAY TOOL



This tool can be used to measure the end play of your crankshaft. You bolt it to the case and use a feeler gauge to check how much end play you have. We prefer using a dial indicator instead of this tool.

T1105281 End play tool

## LIFTER CLIPS



These clips hold the lifters in place when putting the case half together. They're worth the money.

T1109309 Pair 1200-1600

## .006 FEELER GAUGE LONG



This tool is a must for anyone who adjusts their own valves.

T1109606 .006 thick 12" long

## VALVE ADJUSTING TOOL



This is a 13mm wrench screw driver combo for adjusting your valves.

T1109612 Valve adjusting tool

## VALVE SPRING REMOVAL TOOL



This tool will allow you to change the valve spring with the head still on the car.

T1109623 Valve spring removal tool 1200-1600

## OIL PUMP PULLER



This tool pulls out the oil pump. We suggest using this puller because it keeps you from marring up the case if you try to pull the pump out with pry bars.

T1115107 Oil pump puller

## OIL PISTON PULLER



This is a tool for getting out stuck oil pressure pistons out.

T1115411 Oil piston puller 1200-1600

## CARB AIR FLOW METER



This meter is used for synchronizing your dual carbs. Set the meter in one of the carb throats and take a reading and then set it in the throat of the other carb. If they do not read the same, then you will want to adjust the idle screws and linkage arms until they do.

T1129026 Air flow meter

## JET SIZERS AND REAMS



This is a great way to enlarge your jets without having to buy a lot of new jets. When reaming, go slow. It's easy to get too big, too fast. The sizers are to check the size of your jets and your progress as you ream them.

T1129305 Reams  
T1129306 Sizer .45 to 1.5  
T1129307 Sizer 1.5 to 3.0

## CLUTCH ALIGNMENT TOOL



This tool is like a small main shaft. Stick the tool through the clutch disc and slide the disc and the tool into the end of the gland nut. Then install the pressure plate and torque the bolts in a star pattern. This tool keeps the disc centered. Once the pressure plate is torqued pull the tool out. Don't forget to take off the flywheel lock at this time.

T1141031 Alignment tool

## RING COMPRESSOR



This cheap tool allows you to get the cylinder barrels over the pistons. Make sure the ring gaps do not line up on the piston. Get your oiling can and squirt some oil on the rings and into the bore of the cylinder barrel, smearing it around the whole inside surface. Put some oil on the inside of this tool and place it around the piston rings, squeezing them together with vise grips or channel locks. Not too tight now, just enough to compress the rings. Slide the cylinder barrel on over the piston. Once the cylinder barrel has gone past the rings you can let go and remove the band.

T1198083 83mm to 87mm  
T1198088 88mm to 94mm

## DECK HEIGHT TOOL



This is a tool for checking deck height. It's made to use with a feeler gauge, but we prefer to use a depth mic, which is much more accurate. Note: We can not stress how important this step is. This is part of calculating your compression ratio and that which will prolong the life of your motor.

T1198101 Deck height tool

## TRANSAXLE DRAIN AND FILLER TOOL



This is a "must" for your toolbox. They come in two different styles; a big Allen wrench or a socket. We use both and have no preference.

T1301141 Socket  
T1301142 Allen wrench

## STARTER BUSHING PULLER



This is a slick tool for getting your starter bushing out with the engine still in the bus.

T1301155 12v

## TIE ROD END PULLER



This is really a slick tool. It works great for getting tie rod ends out. Unlike a pickle fork, it will not ruin the boot. If you find you can't tighten the bolt on this tool any further and the end still isn't free, use a hammer and hit the side of the arm where the end goes through it. This works every time.

T1415811

## CENTER PIN REAM



This tool is needed to repair the center pin in your bus. On buses 1967 and earlier, the center pin bushings need to be reamed after they are installed. This reamer will ream the bushings to the right size even with the beam still in the bus. On buses 1968-1979, the bushings do not have to be reamed.

T2498171

55-67

## CV JOINT SOCKET



If you plan to take off your CV joints, you will need this socket. We suggest you take a small screwdriver and dig the grease out of the head of the bolts before using this tool; it'll keep the bolts from stripping.

T1501331

12 point socket

68-99

T1501332

6 point socket

68-99

## REAR AXLE NUT HAMMER TOOL



This is a great little tool for getting the rear axle nut off. Just place it over the nut and hammer on it. It will take off nuts that an impact gun can't. Another "must" for your toolbox.

T1501615

Rear axle nut 36mm

T2501615

Rear axle nut 46mm

## HELPER BAR



This replaces Fred. It will hold the drum for you so you can get the axle nut off and it also works on the flywheel.

T1501616

## ANGLE FINDER



This is a must for setting your spring plates. The biggest problem we have had with this tool is people borrowing it and forgetting where to return it. Before you use the angle finder, make sure your bus is level front-to-rear and side-to-side. Set the angle finder on the top flat edge or your spring plate and read the degrees. Keep playing with your

inner and outer splines on the torsion bar until you get the desired angle on the spring plates. One degree makes a difference.

T1511205

## CLUTCH WING NUT TOOL



This tool that grabs the ears of your clutch wing nut making it easier to adjust. Proper adjustment is when you have 1 1/2" to 2" of free play at the pedal. If you are spinning the nut and the cable is spinning too, put a pair of vise grips on the cable where the adjustment sleeve is crimped on.

T1721349

## WINDOW SEAL INSTALLATION TOOL



This is a slick tool for putting in windows. If you're planning to put in more than one window, we advise you to purchase this tool. The way it works is once you have the rubber on the glass; you place the tip of the tool in the groove that the body lip sits in. Leave a few inches of string, so that it hangs out of the groove. Then run around the seal with the tip of the tool in the bottom of the groove, letting the string pass through the tool as you go. Go all the way around and overlap the string when you come to the other end. Now hang onto the overlapped area and pull the tool back. That's it. Now you're ready to install the window. For more instruction read, FRONT WINDOW SEAL.

T1845121

Window seal tool

## HOG RING TOOL



This is a tool you will need when putting on seat covers. It comes with the pliers and 100 hog rings.

T1881012

## DISTRIBUTOR DRIVE PULLER



This puller removes the distributor drive shaft. You will need to take the fuel pump, fuel pump push rod and the stand out in order to remove the drive. Be careful, there are two shims under the drive; don't loose them.

T1905200

40 hp-1600

## ELECTRICAL END PLIERS



This tool attaches the factory style electrical ends onto the wire. We prefer this method to using the crimp on connectors.

T1971940

All

## PROMOTIONAL

### STICKERS



Stickers for your car or toolbox .

ST1004	Small
ST1005	Large
ST1110000	Shift pattern sticker
ST1110007	12 volt sticker

### PARKING SIGNS



Use these signs to express your affection for your Bus and to let others know where not to park.

AP241100YL	Bus, Yellow
AP261100BL	Single cab, Blue
AP261100GY	Single cab, Gray
AP261100RD	Single cab, Red
AP261100YL	Single cab, Yellow

### T-SHIRTS WITH WOLFGANG LOGO

Standard issue uniform around here.\*



APWG100	W/red-yellow logo, white	Small
APWG101	W/red-yellow logo, white	Medium
APWG102	W/red-yellow logo, white	Large
APWG103	W/red-yellow logo, white	X Large
APWG104	W/red-yellow logo, white	2X Large
APWG105	W/red-yellow logo, white	3X Large
APWG110BK	W/logo, black	Small
APWG110BL	W/logo, blue	Small
APWG111BK	W/logo, black	Medium
APWG111BL	W/logo, blue	Medium
APWG112BK	W/logo, black	Large
APWG112BL	W/logo, blue	Large
APWG113BK	W/logo, black	X Large
APWG113BL	W/logo, blue	X Large
APWG114BK	W/logo, black	2X Large
APWG114BL	W/logo, blue	2X Large
APWG115BK	W/logo, black	3X Large
APWG115BL	W/logo, blue	3X Large

\*Back of shirt shown.

### WOMENS T-SHIRTS W/WOLFGANG LOGO



Ok , you got a shirt for yourself, better get one for the Mrs. It has a nice scooped neck and capped sleeves for her.

APWG500BK	W/logo, black	Small
APWG510	W/red-yellow logo, white	Small
APWG501BK	W/logo, black	Medium
APWG511	W/red-yellow logo, white	Medium
APWG502BK	W/logo, black	Large
APWG512	W/red-yellow logo, white	Large
APWG503BK	W/logo, black	X Large
APWG513	W/red-yellow logo, white	X Large
APWG504BK	W/logo, black	2X Large
APWG514	W/red-yellow logo, white	2X Large

\*Front of shirt shown.

### WOLFGANG RACING SHIRTS



Cool shirts that we wear to the track. Black with white logo.\*

APWG130	Small
APWG131	Medium
APWG132	Large
APWG133	X Large
APWG134	2X Large
APWG135	3X Large

\*Back of shirt shown.

### LONG SLEEVED SHIRTS WITH LOGO



Good looking shirts with the Wolfgang logo for those cooler nights. They glow in the dark so your friends can find you when you're working late in the garage. All black with logo.\*

APWG170	Small
APWG171	Medium
APWG172	Large
APWG173	X Large
APWG174	2X Large
APWG175	3X Large

\*Front of shirt shown.

### TANK TOPS WITH WOLFGANG LOGO

Standard 100 degree summer wear.\*



APWG150	W/red-yellow logo, white	Small
APWG151	W/red-yellow logo, white	Medium
APWG152	W/red-yellow logo, white	Large
APWG153	W/red-yellow logo, white	X Large
APWG154	W/red-yellow logo, white	2X Large
APWG155	W/red-yellow logo, white	3X Large
APWG161BK	W/logo, black	Medium
APWG161BL	W/logo, blue	Medium
APWG162BK	W/logo, black	Large
APWG162BL	W/logo, blue	Large
APWG163BK	W/logo, black	X Large
APWG163BL	W/logo, blue	X Large
APWG164BK	W/logo, black	2X Large
APWG164BL	W/logo, blue	2X Large
APWG165BK	W/logo, black	3X Large
APWG165BL	W/logo, blue	3X Large

Women's tank tops with Wolfgang Logo.

APWG520	W/red-yellow logo, white	Small
APWG521	W/red-yellow logo, white	Medium
APWG522	W/red-yellow logo, white	Large
APWG523	W/red-yellow logo, white	X Large
APWG524	W/red-yellow logo, white	2X Large

\*Back of shirt shown.

### WOLFGANG RACING TANK TOPS



Standard 100 degree summer track wear. Black with white logo.\*

APWG141	Medium
APWG142	Large
APWG143	X Large
APWG144	2X Large
APWG145	3X Large

\*Back of shirt shown.

### SWEATSHIRTS



A hooded sweatshirt for those really chilly days. They glow in the dark. Black with white logo.\*

APWG190	Small pullover
APWG190Z	Small zippered
APWG191	Medium pullover
APWG191Z	Medium zippered
APWG192	Large pullover
APWG192Z	Large zippered
APWG193	X Large pullover
APWG193Z	X Large zippered
APWG194	2X Large pullover
APWG194Z	2X Large zippered
APWG195	3X Large pullover
APWG195Z	3X Large zippered

\*Back of shirt shown.



## WOLFGANG BEANIES



Keep your head and ears warm in style with this Wolfgang beanie. Black with white embroidered name.

APWGBEANIE One size fits most

## WOLFGANG HATS



Cover that bald spot with a stylish Wolfgang hat. Black with white embroidered logo.

APWG HAT One size fits most

## BOOKS



These are some of the books that might help you repair your bus. We find the Bentley books to be superior to anything else on the market.

B1090110	Idiot book	
B2090110	Bentley	63-67
B2090111	Bentley	68-79
B2090112	Bentley	80-91
B2090113	Bentley	92-99

## FLUIDS & SEALERS



These are the glues, oils and sealers we use. Our theory on oil is to use straight grade 30 weight under 90 degrees outside temperature and straight grade 40 weight over 90 degrees.

F1001	3M super weatherstrip glue
F1002	Gasgacinch 4 oz can
F1008	Teflon tape roll
F1010	Hand cleanser
F1101	White grease
F1102	Engine degreaser
F1129032	Fuel injector cleaner, 12 oz.
F1129600	Oil for gauze air cleaners, 12.25 oz.
F1129601	Cleaner for gauze air cleaner elements
F1129602	Oil for gauze air cleaners, 6.5 oz.
F1129610	Carburetor cleaner, 16 oz.
F1130	30W oil
F1140	40W oil
F1380	80-90W oil, pint
F1405	High temp disc brake grease
F1415049	Steering box lube, 16 oz.
F1501	CV joint grease
F1610	Brake cleaner, 12 oz.
F1611	Brake fluid, 12 oz.
F1612	Brake fluid, 32 oz.
F1837	Liquid wrench, 11 oz.



# BUS BUG OFF-ROAD CATALOGS! COLLECT ALL 3 NOW!





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We at Wolfgang try to be as fair as possible to all customers. Our markup on parts is as competitive as possible. If you see someone offering the same part for less, let us know as we will try to match it if we can. In some cases, if we can't compete, we will tell you where to get the best part at the best price. We have built this business on honesty, and feel it is the best policy.

On orders, if you pay with a credit card we will not bill your card until the day we ship. It's your money not ours, until we get a product(s) coming your way. On COD fees, we charge you what UPS charges us to collect the money. All COD's are money order only, as we can not chase bounced checks all over the country. We hope you understand.

## ORDERING INFORMATION

If you could order by part number it will speed things up a great deal and is a big help to us. If you're not sure of the number or need help, we will gladly help you with this. Sorry, no collect calls will be accepted. All orders are shipped by UPS unless you would like another carrier. All orders are shipped at UPS's cheapest rate. If you want your order sent air, please let us know. If you want your order insured, you must let us know. Again, we try to get your product to you as cheap as possible, as paying freight doesn't make your car run any better. If your package is lost or damaged, you will have to take it up with UPS. We will provide you with all the necessary information to take care of the problem. COD orders are shipped out money order only. Please be ready for delivery. Please provide daytime phone number and address where someone will be able to accept a COD delivery during UPS delivery hours (9am to 6pm). No COD's on used parts or special ordered parts. All truck orders must be prepaid for total of parts ordered. Wolfgang ships out all truck orders COD for the freight charges only...no exceptions. Customer is responsible for all truck freight bills. Wolfgang usually makes all shipping arrangements with the freight companies. All truck companies have a 100 pound minimum weight charge. Wolfgang is happy to ship by truck; but we do not accept any responsibility for the length of time of delivery or pick up & delivery charges. Allow at least 10-14 days for truck delivery.

## FOREIGN ORDERS

Foreign customers please request information on overseas shipments, current prices, payment, and best shipping methods. Please provide full address and day time phone number with your order. Wolfgang ships orders via parcel post or UPS. Please request information on freight charges for your order. Please be sure to request which means of shipment you desire. No COD orders can be shipped internationally. Freight must be prepaid. All duties and freight charges are paid by the customer. All APO/FPO orders must be shipped via parcel post.

## ORDER PROCESSING

We try to process orders as promptly as possible. Most UPS orders are processed the same day. UPS can not be shipped to a P.O. Box, so please provide a physical street address for UPS delivery. Cut off time for UPS Air service (1 and 2 day Air Service) is 12:00 noon Monday-Friday. Air shipments require payment by credit card; No COD air shipments. UPS usually provides fast service at reasonable freight charges. Parcel post orders are shipped once a week. Truck orders are bulked together for pick up to save single pick up charges. Please allow time for "Used Parts" orders to be pulled & inspected to guarantee top quality used parts.

## DAMAGED MERCHANDISE & SHORTAGES

Damaged merchandise or shortages must be reported to Wolfgang immediately upon arrival of shipment. When an order leaves our shipping dock the responsibility is covered by the carrier. If damage occurs during shipment, it is the customers responsibility to handle the damaged merchandise in the following manner.

UPS Shipments: If there is visible damage to a box or package, be sure to note it on the UPS delivery persons ledger when you sign for delivery. Call your local UPS office immediately to report the damage or loss. UPS will send a UPS representative to inspect your package right away. Be sure to retain all shipping containers and all packing materials for UPS inspection. Only after the carrier has been made aware of the damage claim; contact Wolfgang to report what item was damaged or shorted. Please provide invoice number. Only after these steps have been taken can Wolfgang help you with your claim.

Truck shipments: If you receive a truck shipment with damage or shortage, have the truck driver note the damage and sign the truck delivery bill at the time of delivery. Call carrier to report claim immediately. Retain all copies of bill of lading and invoice.

## RETURNS

Please call us if you have a problem with an order or a product. We value every customer and would like you to stay happy with us. We work on a very low profit margin and often the freight charges exceed our profit. Therefore we cannot afford to pay the charges for returns. A raise of 5 or 10% in our prices would make free returns possible, but our customers would rather have lower prices and chance an occasional return. If the part is under warranty, we will pay the freight back to you but you are responsible for the freight to us. It's unfortunate that you may have to pay shipping charges for something that isn't your fault, but please keep in mind that without this policy, prices would have to be increased.

## WOLFGANG INTERNATIONAL WARRANTY POLICY

All parts are guaranteed against defects in material and workmanship by the original equipment manufacturer or by Wolfgang International for a period of 90 days. The warranty period starts from the date of purchase, not the date of installation. If a part fails within this time period, Wolfgang will be happy to replace this part. Warranty does not cover labor, failure to related components, failure resulting from faulty installation, nor would the liability of Wolfgang International exceed the cost of the original part. If you have a problem with any item from Wolfgang International please call or write to us with a full explanation. Please provide a copy of the original invoice and include your daytime phone number. We will be happy to contact you and advise you on how to handle the warranty. No returns on any electrical part or "used" parts. No COD's will be accepted on returned parts. Wolfgang does not pay freight charges for returns.

## CATALOG CONTENT

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## PRODUCTS & PRICE CHANGES

Wolfgang International is constantly adding new items to our line of Volkswagon parts and accessories. Wolfgang reserves the right to change the design, materials, specifications, or supplier of any product advertised in this catalog. Wolfgang strives to provide you with the best quality parts at the best possible price. Prices are subject to change without notice. All efforts are made to keep prices current. Price lists are printed several times a year, due to the huge inventory that Wolfgang stocks, it is impossible to keep each item priced monthly. If you need price information or quotes please call us. Wolfgang's sale staff is more than happy to quote current prices.

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