GC10/110/S30/31/S130 (including S20) S15T/M Swap KIT
Installation Instructions and Components

2024/8/15

Thank you for purchasing this product.

*Please note that this product is for competition use only.
*The use of our swap kit does not mean that the S15T/M can be installed as a bolt-on without any modification.
*The L engine clutch can be used without modification. (Please select the sleeve length and size according to the product used).
*For S30/S31, if the body side is a through bolt type, the stock transmission mount can be used as is.
*For Hakoska, use the transmission mount for S15 (rubber side only) and use the optional transmission mount for the frame side. (Stock cannot be used.)
*This product does not include the special drive shaft and transmission itself.
Please Drive shaft and gear separately. (Depending on the propeller shaft to be purchased, modification may be required.)
(For Drive shafts, please refer to the separate explanation on the types of drive shafts that can be used.

*Please install this product at a repair store or garage that has expertise in the installation of this product.
*Please note that we are not responsible for any malfunctions or defects that may result from incorrect use or installation of this product.
*Please wait until the engine body and engine area are at a temperature where it is safe to touch before starting work.
*Please understand in advance that the clearance between the product and the vehicle may become tighter due to errors on the vehicle side of the installation.

List of Product Composition ①

	Product	Qty	Remark	Engine
A	Housing A	1		
B	Housing B	1		
A1				
A1	Flange bolt M10-1.5/35	1	Housing A Engine side mounting	L Engine
A1	Flange bolt M8-1.25/25	2	Housing A Engine side mounting	L Engine
A1	Nut M8	2	Housing A Engine side mounting	L Engine
AB1	Cap bolt M10-1.5/25	6	Housing A/B assembly	S20
AB1	Cap small washer M10-18φ t=2.0	6	Housing A/B assembly	S20
AB1	Locating pin 8φ-25 Class B	2	Housing B assemble	S20
B1	Locating pin 8φ-20 Class B	2	Housing B assemble	
B1	Cap bolt M10-1.5/30	1	Housing B assemble	
B1	Service hole Plug 1/2	1		
B1	Pivot spacer 20φ32mm10-1.5	1	Housing B assemble	

List of Product Composition ②

	Product	Qty	Remark	Remark 2
C	T/M mount adapter *1	2	R/L set (for 2-seater model only)	S30/S31
C1	Flange bolt M12-1.25/90	2	TM mount collar fixed	S30/S31
C1	Flange bolt M12-1.25/30	2	TM mount collar fixed	S30/S31
C1	Washer M12-25φ t=2.5	4	TM mount collar fixed	S30/S31
S	Shift Striking A70 material	1	For shift lever relocation	GC10/GC110
S1	Small head Cap bolt M8-25	1	Shift striking fixed	GC10/GC110
S1	ow head Cap bolt M8-25	2	Shift housing fixing (rear)	GC10/GC110

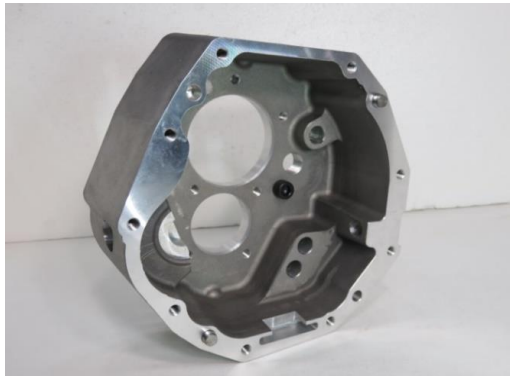
OPTIONパーツ

*2	R200(M10)-R200/R180(M8) Conversion Spacer	1set		S30/S31/Z432
*3	Welding input collar for drive shaf	1		all-purpose
*4	Speed take-out parts	1set		OEM S15T/M
*5	T/M Mount	1		GC10/GC110
*6	S15 Shift housing *2	1		GC10

*1 For TS30/31, the factory TM mounts are used as is. (For 2-seaters only).
*2 Recommended for those who want to lift the T/M with as little modification to the vehicle as possible.

Components S30/S31/S130 GC10/GC110 (both including S20)

A Housing A



B Housing B

B1 Service hole Plug 1/2 &Pivot spacer

A1 Housing A Engine side mounting bolt

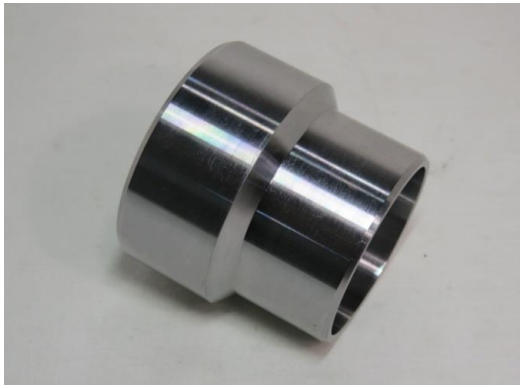
AB1 Housing AB Fixing Bolt

C/C1 T/M mount adapter S30/S31

S Shift Striking A70 material GC10/GC110

OPTIONパーツ

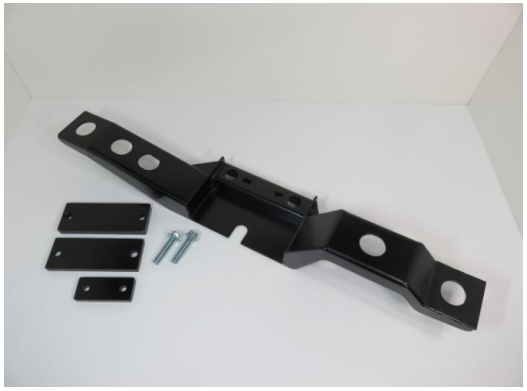
*2 R200(M10)-R200/R180(M8) Conversion Spacer



＊3 Welding input collar for drive shaft

*4 S15 Speed take-out adapter

*4 Speed take-out adapter mounting example



*5 GC10/GC110 T/M mount

*6 S15 Shift housing (GC10)

＊2 RB20/25A/T propeller shafts can be installed on S30/S31 (except 2-seaters) with R200(M10Bolts) differential (R200 for FJ20) without any modification.
However, the R200/R180(M8Bolts) differential requires modification.
By using this product, it is possible to install without modification.

＊3 If the drive shaft requires modification, use this product when welding is required in the middle of the shaft.
Not required if the pipe is made directly from the tip.

*4 If you choose NISMO or HPI for your S15T/M, you can use the wire type speed drive without any modification.
If NISMO or HPI is selected for the S15T/M, the wire-type speed drive can be used without modification.
If you use our speed take-out collar, you can use the L-type stock wire speed driven gear without any problem.
You can use the stock L-type speedometer without any problem.

*5 This T/M mount is exclusively for Hakosuka and comes with two 9mm thick spacers.
When the S15 T/M is installed on the Hakoska and the transmission body is raised, the rear of the shift housing will come in contact with the body.
If you do not want to modify the body, you can use the supplied low head bolts without using the spacers.
The rear of the shift housing will be slightly lowered, but the stock T/M is also slightly lowered, so there will be no problem in using it.

*6 If you are using the 71CT/M and have already modified the body, there is no problem, but if you want to raise the T/M a little more without modifying the body, please use the shift housing to raise the T/M.

About the propeller shaft

The drive shaft　used with the S15 T/M is as other car shafts can be used as well.
We have confirmed that the shaft for C35/R32/33/34 (RB20DE/25DET) AT can be installed on S30/31 and C34 Stagea AT (not RB26) without any modification. (Only the first shaft is used)

Drive shaft conditions for use without modification (S30/S31 both for FJ20 with R00 differential)
Shaft for RB20/25 series (DE or DET) A/T with 38φ input shaft outer diameter. (1st shaft only)
*Please note that some RB25DET A/T vehicles may have a larger input shaft diameter.
*Other VG30DE (NA) A/T can also be used with the same input shaft diameter, but they have bearings, so modification is required.

For vehicles other than S30/S31 (e.g. Hakosuka), the factory drive shaft is long, so modification is required regardless of which drive shaft is used.
*If modification is required, Z32/VG30DE (NA/AT) drive shafts can be used in addition to the above models.
The VG shaft has a bearing on the first shaft, so it cannot be installed in the S30/S31.
*VQ series drive shafts cannot be used on all vehicles.

The clutch for the L-type can be used without modification, so there is no problem in installing the clutch without modification,
especially if the clutch type is not changed.
(Pivot position/height, fork hole position, and cylinder mounting position are all designed to be the same as the L-type clutch.)

*When changing clutches, it is recommended to check the sleeve dimensions first (all vehicles).

The length of the sleeve changes with the clutch used, but if you need to check the sleeve after it is assembled to the T/M body, you will have to take it off again.
If you need to check the sleeve length after the clutch is assembled to the T/M body, you will have to remove the clutch again, which is a very difficult task.

Install the clutch to be installed on the engine body first. (Do not forget to install the plate that will be installed between the housing and the engine at this time.)
Before installing housing A/B to the transmission body, temporarily assemble housing AB (Photo A) and attach the factory front cover to housing B.
Install the pivot collar and the factory pivot.
Then, install the sleeve, bearing, and fork of the size you plan to use as shown in Photo B.
The position of the sleeve push point and fulcrum is the same for both L-type and S15 forks, and the dimensions are the same.
Then, as shown in Photo C, install the release on the engine side.

By temporarily assembling the transmission before installing the main body, the dimensions of the sleeve can be checked.
Once the main body of the transmission is assembled, it is quite heavy, so it is very difficult to remove the transmission body for confirmation.
If the sleeve dimension is too long, the flange surface will not adhere to the engine side at this point.
It is recommended that there be at least 6-8mm of space behind the sleeve when installing (more space is fine, just make sure it is wide enough).
(It is quite difficult to see, but you can check this through the fork hole.)

Photo A

Photo B

Photo C

For Hakoska, before removing the factory transmission housing, remove the shift control housing where the shift lever is mounted and remove the internal shift.

In doing so, push the shift to the back (4th gear position) to remove it.

After removing the stock, install our shift part (part photo S) and secure it with a small head bolt. (Photo ① on page 8).

Then put the gearshift back in neutral.

At this time, do not attach the shift control housing yet, and proceed directly to the housing installation.

Installation of housing B (all cars)

Remove the stock clutch housing and remove the snap rings on the main shaft and countershaft.
Remember to remove the left and right bolts securing the clutch housing.

***After removing the snap ring, never move the shift lever until the front cover is attached again! ！ ！ ！**
If you move it carelessly, the internal synchro may come off. If it comes off, the entire transmission will have to be disassembled and reassembled.

Then, do not forget to remove the bolt (photo #2 on page 8) that holds the shift arm next to the clutch housing (driver's side).
Do not forget to remove the bolt on the opposite side (passenger side).
When removing the clutch housing, be careful not to pull too hard or the internal gears will move. (It is recommended to remove it by hitting it all at once with a large plastic hammer.)

After removing the factory housing, reinsert the magnet attached to the bottom of the factory housing into our housing B.

Apply more grease to the shift arm (see photo (3) on page 8) and fix the shift arm in place (hard grease is recommended.
(If the grease is soft, it will easily fall off due to vibration during installation.)

Apply sealant to the T/M side of housing B and install.
After installation, check that the shift arm has not fallen out by looking through the service hole (see photo ④ on page 8) or the shift arm installation hole.
After installing several bolts and temporarily assembling the T/M and housing B (until they are tight), while pressing down with a screwdriver or the like from the service hole side, align the shift arm with a pick or the like from the hole on the shift arm side.
Install the shift arm bolts.
After tightening the bolts, carefully check again that the shift arm has not fallen out of the designated position.

How to check shift arm installation

Install both upper and lower bearing snap rings (if they are pulled back a little, pull them toward you by hooking them with a pick while turning the main shaft)
Temporarily attach the front cover. (Photo ⑤ on page 8)

Insert the drive shaft in the rear of the T/M and put the shift lever in the back.

While turning the shaft on the clutch housing side, grip the drive shaft tightly with the intention of stopping its rotation. (See photo (7) on page 8.
If the shift arm turns in the opposite direction of the shaft rotation when the shaft is turned by hand, it is installed without any problem.
If the propeller shaft stops rotating even if you grip it tightly while turning the front shaft, the shift arm is not installed correctly or has fallen off internally.

It is very important to check the shift arm installation.
If the shift arm is not installed properly, the back cannot be used.
If the shift arm is not installed properly after all the parts are installed, it will need to be reassembled, so please check carefully.

Shift control housing and shift lever installation (see page 7 for detailed instructions)

For HakosukaGC10/KemmeriGC110, replace the factory strike in the shift control housing with the supplied strike.

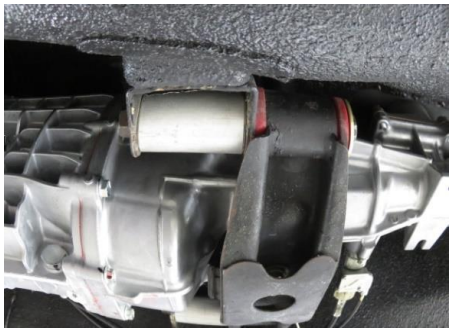
When installing, rotate the housing body forward and backward 180° and replace the two rear bolts with the supplied extra-low head cap bolts. (See photo ⑥ on page 8.)
(By reversing the housing front to back, the shift lever position will be moved forward 3 cm, exactly the same position as the factory one.)
*The shift lever direction is reversed during installation, so please reverse the shift control body 180° before installation.
*There is a rib on the top of the shift control housing.
This rib interferes with the body side, so the T/M body can be raised higher by shaving the rib (see photo on page 7).

Once you are satisfied that everything is OK, pull out the drive shaft and remove the shift control housing again. (It will come in contact with the vehicle when mounted.)
Attach the housing B and T/M bolts to secure everything in place.
Install and secure housing B and T/M bolts.
Apply sealant to the 1/2 PT provided and install in the service hole.
If there is no problem with the sleeve dimensions, apply Loctite to the supplied pivot collar and fix it in place, then install the factory pivot into it.

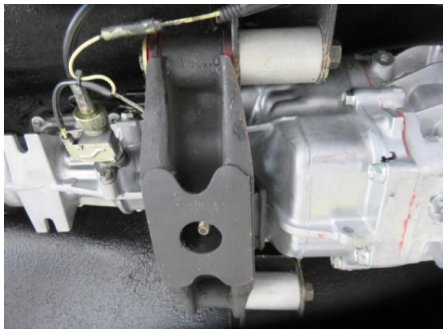
After housing A is secured to housing B with the supplied cap bolt, install the shift fork/sleeve bearing, etc. and mount it on the engine side as a T/M assembly.

S30/S31 T/M installation

S30/S31 (both 2-seater models) use S30/31 stock transmission mounts
Insert the supplied transmission mount collar into the place where the original factory mount used to be, insert a washer into the M12-1.25/100mm bolt from the rear and insert the factory mount between the washers and temporarily tighten.
Tighten the M12-1.25/25 bolts from the front as well, with washers in between, and tighten them firmly once the bolts are in each other.



Photographs of assembly



Photographs of assembly

Photographs of assembly

Hakoska GC10(including S20)/Kenmeri GC110(including S20) Shift lever body replacement work (photo on page 7)

＊S30 drivers do not need this work.

First, remove the outer boot and the middle boot.
Finally, remove the inner back boot by prying with a flat-blade screwdriver or similar tool.
At this time, the outer ring will be slightly crushed, so use a rounded tip tool or the like to correct this when installing the shift lever.
Remove the internal snap ring (the C-ring does not need to be removed) and pull out the shift lever.

The shift lever should be installed from inside the vehicle after the T/M unit has been mounted on the vehicle.

Cut the stock boot on the vehicle side to fit the S15 shift control housing.

From inside the car, insert the shift lever by flipping it 180° , and then insert the snap ring to fix it in place.
After inserting the inner boot all the way to the back, repair the crushed part by using a tugger, etc. when you remove the boot.
Reverse the process of removing the boot and install the shift control housing from the inside of the car after placing the T/M unit on the car.

Speed Driven (Photo 8 on page 8)

If the position of the restraining part does not fit when installing the speed driven gear, shave it off so that the plate that restrains the gear can be inserted.
The clearance between the gear and the gear inside the T/M can be adjusted by rotating the main body of the driven gear since the main body and the gear are eccentric.

Drive shaft (Photo 9 on page 8)

When using a car model other than the S15, remove the front cover as shown in Photo 9.
If an S30/S31 two-seater is equipped with the R200 differential (FJ20 is equipped with the R200), it can be used without modification depending on the drive shaft of the other car model selected. Installation is possible without modification.
(For R180 differential, please use the Option spacer because the differential flange size is different.)
(For 2-by-2 diffs, propeller shaft modification is required as there is no one that matches the length of Hakosuka.

Neutral position before replacement (housing inverted 180°)

Remove intermediate boot

Remove inner boot

Snap ring removal

Inside boot fitting

Inner boot repair

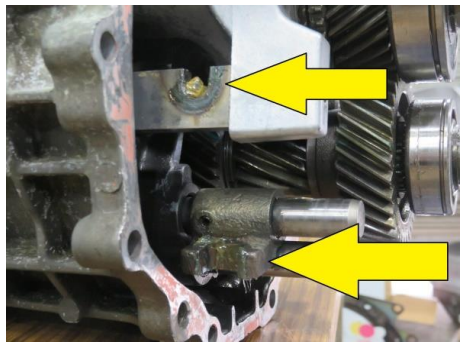
Cutting of vehicle side boot

Neutral position after replacement

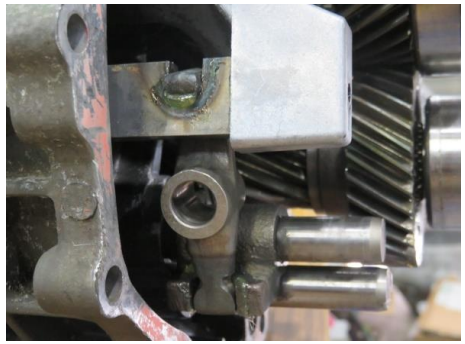
Shift control housing Rib

① Shift Striking installed

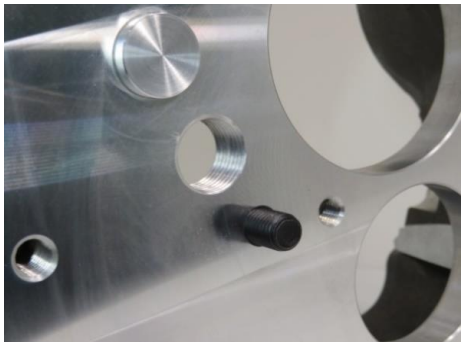
② Shift arm fixing bolt



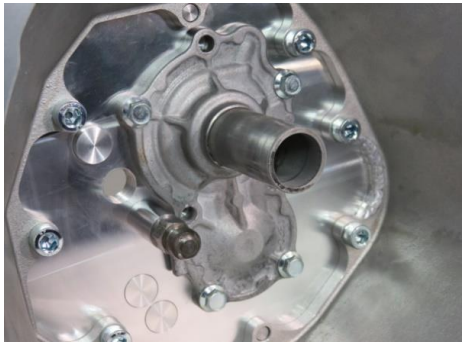
③ Location to apply grease



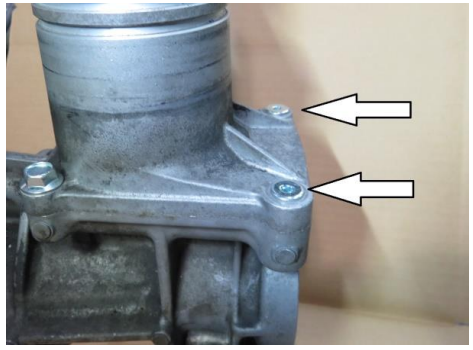
③ Shift arm assembly



④ Service hole

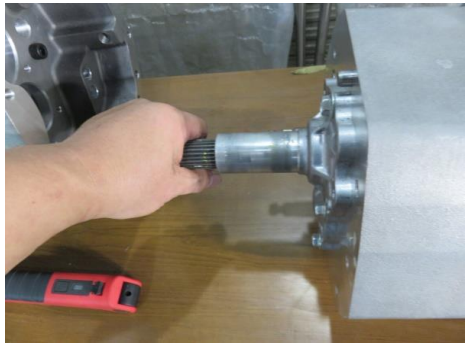


⑤ Temporary installation of front cover



⑥ GC10/GC110 shift control housing

⑦ Confirm operation of back gears



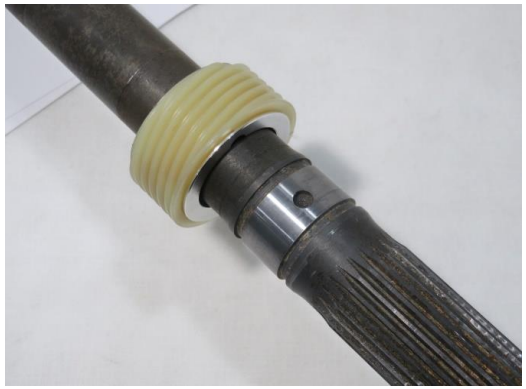
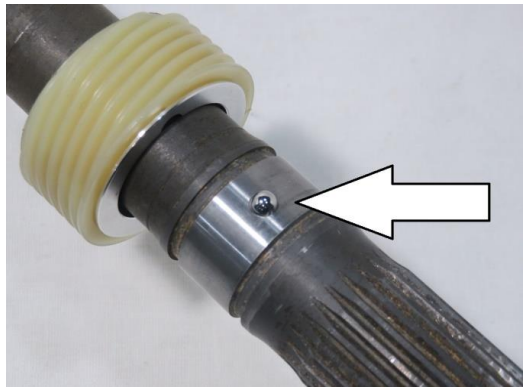
⑦ Check the back gear

⑧ Speed driven gear

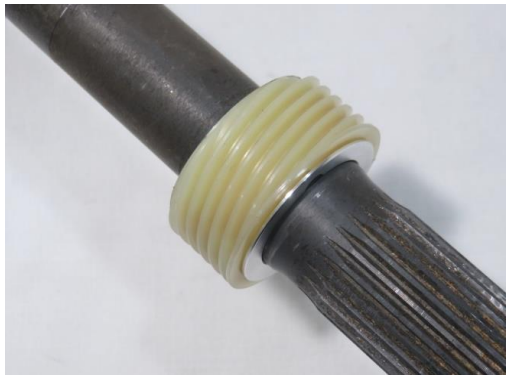
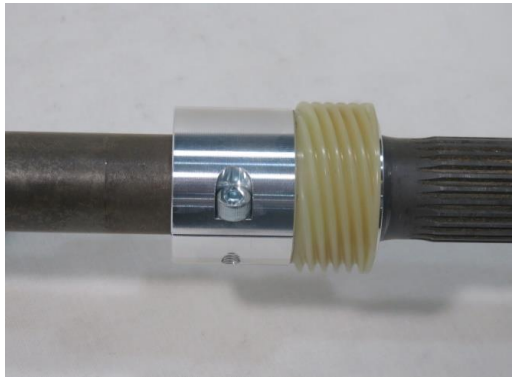
⑨ Drive shaft cover removal

Example of S30 shaft installation without machining

Installation of Option Parts *4　speed pick-up parts

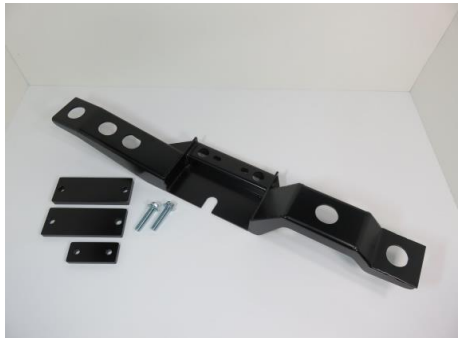




①Remove the housing at the rear of the T/M.
②First of all, insert the collar with the plastic gear of the OPTION parts into the back first.
At this time, the inside groove should be on the rear side.
③Next, insert the attached steel ball into the factory shaft.

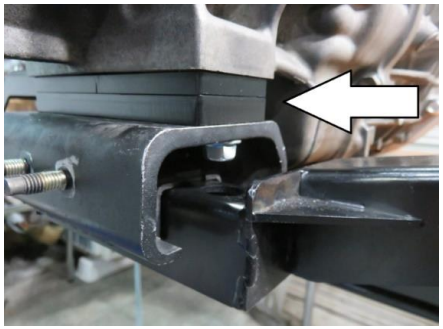




④After inserting the steel ball, slide the speed gear and insert it.
⑤Fix the front end with the attached adapter to prevent rattling in the front-back direction.

Option Parts　Hakosuka GC10/Kenmeri GC110 Transmission Mount （Both include S20-equipped vehicles）



Transmission mount Accessories t=9mm 2 steel plates



Steel plate installation example

Transmission mount installation (Kemmeri GC110) *include S20-equipped vehicles

Spacers are included but do not necessarily need to be installed.
Use the spacers while checking the angle of the T/M body and the interference with the body.

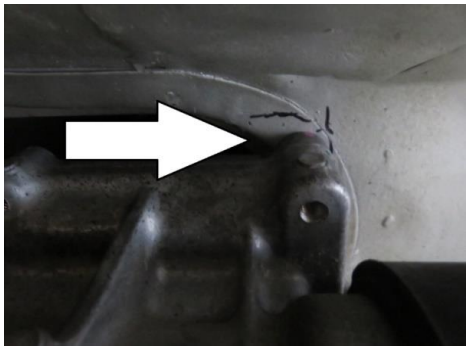
Transmission mount installation (Hakosuka GC10) *include S20-equipped vehicles

The 6mm spacer is used when re-using the Hakosuka stock transmission mount (side with rubber). (Photo ②) ***This spacer is not included at this moment.**
*Since the stock mount is thinner than the S15, it is placed between the steel mount and the rubber side to match the height.
*If you have the S15 stock rubber side mount, do not use it.

However, if you want to make the T/M perfectly horizontal, it is necessary to dent the rear part of the shift hole on the body side by about 20-25mm. (Photo ①)
In the case of Hakoska, as shown in the photo, there is an uneven area around the back side of the shift hole,
and if the T/M is raised as usual, it will interfere with the body.
If the vehicle side has already been modified, use the provided spacers to raise the T/M position.
*Replace the two M8 bolts on the rear side of the shift housing from stock to the supplied ultra-low head. (Photo ⑥ on page 8)
If you originally used 71CT/M, it has already been machined, so you can raise the T/M by inserting the supplied spacers.
Two 12mm-thick spacers are included, so please select the spacers according to the height you wish to raise.
Also included are special bolts and nuts for mounting the two spacers on top of each other.
*Without the spacer, the rear of the T/M will be lowered. The rear of the T/M will be lowered, but there will be no problem when driving.

Photo①

Photo①

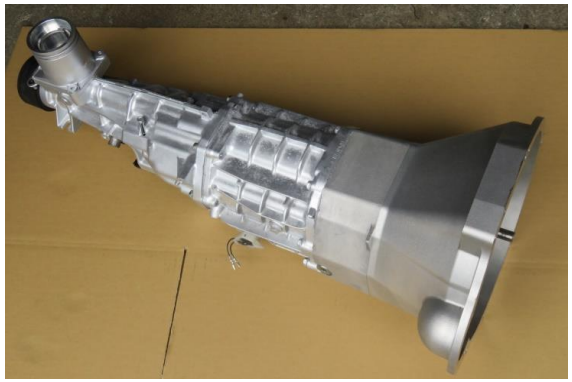


Photo①

Photo②

In the case of a vehicle without body modification, when the T/M is raised, it will contact the area marked with magic markings.

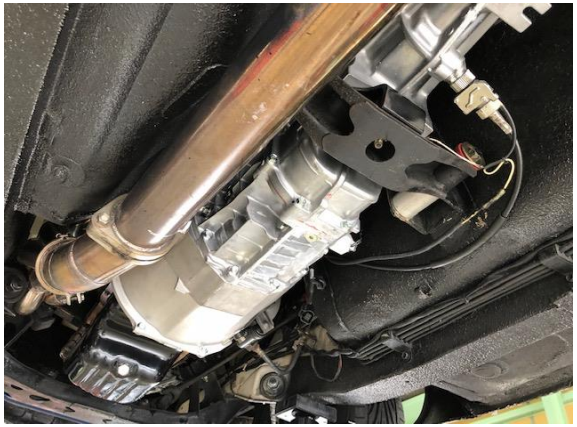
Example of each installation Photo



S30

S30

S30



S30

GC10

GC10

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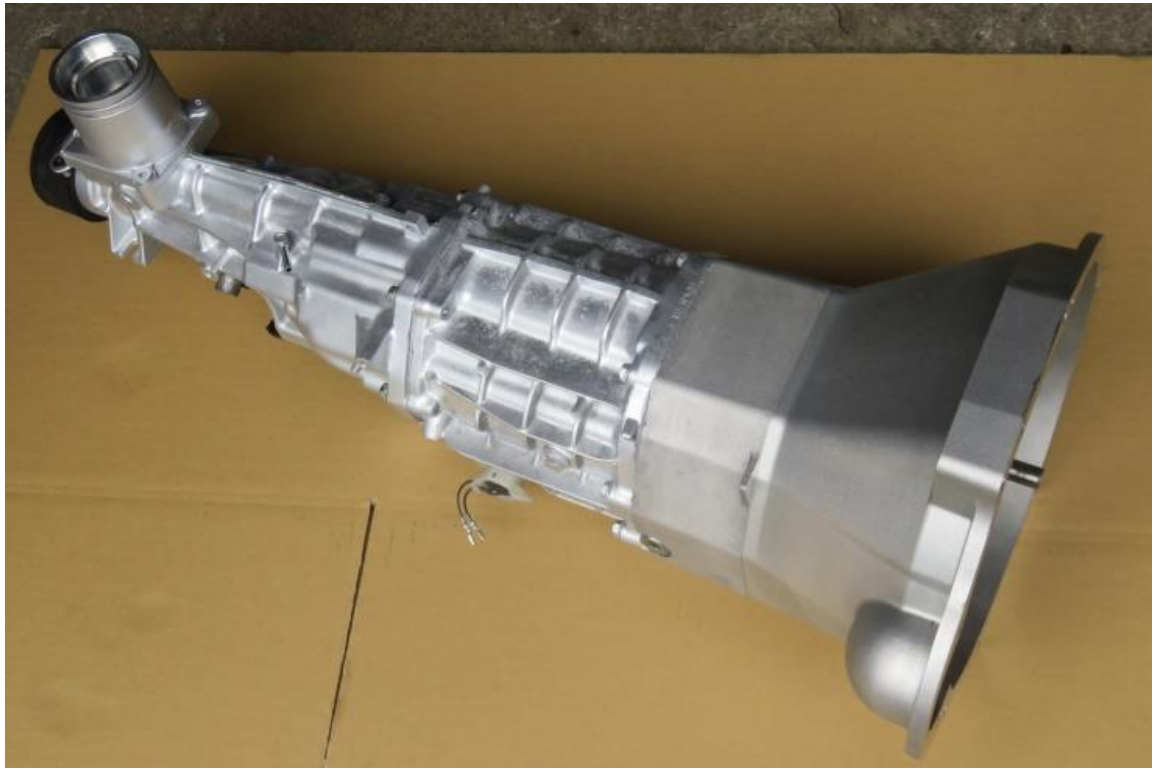
GC10/110/S30/31/S130 (including S20) S15T/M Swap KIT

Installation Instructions and Components



This instruction manual has been automatically translated into English.
Please note that some parts may be difficult to understand.