

Overhauling your OS Clutch System

Always replace friction plates, pressure plate and center plates (not used in single plate system) together as a set when overhauling the clutch system. After some period of use, these plates deform slightly to fit each other. If only the friction plates are replaced, they will not fit properly to the old pressure plate and center plates, and may cause slip and excessive wear-out, and also will trigger faulty disengagement. Again, we insist replacing the friction plates, pressure plate and center plates (not used in single plate system) together as a set when overhauling.

"Overhauling A set" and "Overhauling B set" is provided for your convenience.

Set A includes... Necessary number of Clutch disks, Center plates and Cover bolts, and one Pressure plate.

Set B includes... Necessary number of Clutch disks, Center plates and Cover bolts, one Pressure plate and Clutch cover.

(Center plates are not included for single plate system)

If you have to reuse the friction plates, pressure plate and center plates for some reason, use a straight edge and feeler blade to check for taper and deformation as shown in **Figure 7**. If the taper and/or deformation at any point exceed 0.5mm, they are not to be reused. Remember that we do not take any responsibility for the accidents and damages caused by the reuse of improper, worn-out plates.

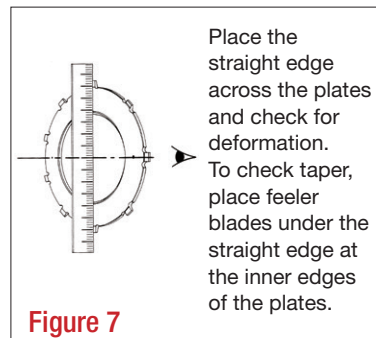


Figure 7

When you order OS overhaul parts, please notify the type, parts number and identification mark (marked on the clutch cover) of the clutch system.

Super Single series Notify model, engine type, product identification mark and overhauling set you need.

Ex. When overhauling OS clutch system of Toyota AE86 Trueno;

Let us know model (AE86), engine type (4AG), product identification mark (see below), and desired overhauling set (set "A" or "B").

Example of product identification mark on the clutch cover

SD	SC	U4C	U4B	SB440
SD480	SC440	SC480	SB250	

Multi Plate series Notify model, engine type, clutch type, product identification mark and overhauling set you need.

Ex. When overhauling OS TS2BD system of Nissan S14 Silvia;

Let us know model (S14), engine type (SR20DET), clutch type (TS2BD), product identification mark (see below), and desired overhauling set (set "A" or "B").

Example of product identification mark on the clutch cover

ASP220	BDP440	DSP440	WB480	WS460
ASP250	DSP450	CDP440	WB480N	WS450N
ADP440	DSP460	WS440	WS-B	WS450
	BSP250	WS450	WS-C	

When this clutch kit is given to someone, please give this booklet together.

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*Pictures of the products in this booklet may look different because of printing limitation.
*The specification listed in this booklet is subject to change without notice.

MULTI PLATE
OS Racing Clutch Series

INSTALLATION MANUAL



OSGIKEN
RACING POWER UNIT & PARTS DEVELOPMENT

OS High Performance Clutch

As the mechanism of engine has evolved, the performance of clutch must be improved. The highly efficient clutch can transmit the power of engine throughout the body smoothly and accurately. For this reason, OS Multi Plate Clutch is essential to the drivers who love motor sports.

OS Racing Clutch Kit

As the mechanism of engine has evolved, the performance of clutch must be improved. The highly efficient clutch can transmit the power of engine throughout the body smoothly and accurately.

For this reason, OS Multi Plate clutch is essential to the drivers who love motor sports.

Thank you for purchasing our OS Racing Clutch Kit.
Please read this manual carefully before starting the installation.

IMPORTANT PLEASE READ THE FOLLOWING



When this mark is given to an instruction, it means that there are possibilities of injury and/or damage to the products, tools and automobile, unless you do not follow the instruction.



When this mark is given to the instruction, it means that there are possibilities of fatal injury and/or major damage to the products, tools and automobile, unless you do not follow the instruction.

Please be aware of the potential risks and hazards when installing the products. We do not take any responsibilities for any loss and/or injury occurred when our products are modified, re-used and/or ill-fitted. We do not take any responsibilities for any loss and/or injury that result from the failure in following the instruction given in this manual.

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Before Installation



Checking your application

- OS Clutch Series are designed ONLY for manual transmissions. They are not to be used with any other types of transmissions.
- Each clutch system is designed for each application. Check a label of the product. The label tells applicable model, year and VIN#. Do not install the product unless information on the label matches the vehicle you are working on, even if the measured size of the product seems to fit. (If the label and the product do not match, please contact us and/or your OS dealer before installation.)



Understanding a reinforced clutch system

- When this product is installed, the clutch pedal tends to be "heavier" compared to the originally equipped one as it has a higher rate pressure plate spring.
- Please be aware that this product demands some practice to operate smoothly, since the unconventional metallic materials are used for the friction plates.
- Transmission that is equipped with this product will produce rattling sound when disengaged, due to the multi plates mechanism.
- Excessive use of half clutch may damage the clutch system.
- When used in drag racing and other severe conditions, check the clutch system periodically.



General warning on installation

- Installation and disassembling of this product should be done by the professional with experience in transmission. Expert knowledge and special tools will be needed in order to install this clutch system.
- Adjustment should be done by the professional as well. Some models require skill and experience.
- Use only genuine parts that are supplied from the manufacture of the vehicle you are working on unless special instruction is given in this manual.
- Follow the service manual that is supplied by the manufacture of the vehicle you are working on.
- Do not use any other parts together with this product unless so specified in this manual.
- Do not disassemble and/or modify this product unless so specified in this manual.
- Some models need specific parts to install this product. See "Parts needed for installation by application: P3~5".
- Before start working, make sure the engine, transmission and muffler are cold.
- Never combine this product with a product of the other after market parts company.
- Always use proper jack for transmission work. Have someone to help the installation.



As the products are to be used in the closed conditions such as racing circuit, raceway, and other off highway conditions, we may not accept returning of this product. The specification of this product may change without notice for the improvements.

Preparation and Parts needed for Installation



Preparation for installation

- Check for the leaks and damages of master and slave cylinder. If you find any problem, replace them before installation.
- Lay hydraulic hose as simple as possible. See the **Figure 2** on the following page.
- Check for bends and damages of input shaft, release fork and pivot. If you find any problem, replace them before installation.
- Place clutch disks to the main drive shaft before installation, and see if the disks move smoothly. Do not set them with excessive force, or it may damage the disks and main drive shaft. If it does not fit properly, clean the spline of main drive shaft with a brush.
- Never apply conventional grease to the main drive shaft and the splines on it. It may fly off on to clutch disks, and may cause slip and excessive wear of clutch disks. Aerosol lubricant will work fine.
- Check for damages and fittings of starter motor gear. If you find any problem, replace it before installation. Inferior starter motor gear will damage ring gear of flywheel. Older vehicle need extra attention on this matter.
- Clutch disks should be treated very carefully. Do not drop them. Do not get them wet, nor do not touch them if your hand is wet.
- Remove any remains of grease, oil and water from clutch disk surface. These unnecessary lubricants may cause vibration, slip and excessive wear of clutch disks.

Preparation and Parts needed for Installation

NOTE Parts needed for installation by application

NISSAN

Case of Super Single, STR, GT

Use enclosed sleeve bearing or movement alteration kit exclusively designed for each application.

Case of Multi plate system

Release sleeve bearing will be needed for any application except for Pulsar GTI-R(RNN14).

Use genuine Nissan release bearing parts # 30502-14601 or OS made equivalent parts # OS00-0011 except for Pulsar GTI-R (RNN14). Numbers given in a chart below are the thickness of the release sleeve. See Figure 1 as a reference.

- Not applicable

OP Optional Clutch release movement alteration kit is required for installation.

* Use genuine Nissan release sleeve bearing or OS made equivalent (enables to reduce pedal effort).

#1 (S15) 8 genuine Nissan flywheel bolts (part # 12315-30P01) is required for installation.

#2 (R34GTR) 6 genuine Nissan flywheel bolts (part # 12315-04U00) is required for installation.

#3 Models before Jan. '93; w/ push type clutch mechanism

#4 Models later Feb. '93; w/ pull type clutch mechanism

OS Clutch Type			TS2A(S)	TS2AD	TS2B(S)	TS2B(C/D)	TR2CD	TS3B(W)	TR3BW	TR3CW	R2CD	R3B	R4B	R3C	R4C	Super Single	STR2C	STR2CD	GT(S)2CD	GT(S)1CD
Skyline GTR	R34 #2	RB26DETT	-	-	-	-	-	-	-	-	-	-	-	OP	-	-	OP	OP	-	-
	R32 #3	RB26DETT	-	-	20	12	-	14	-	-	-	-	-	26	18	-	22	-	14	-
	R32 #4 /R33	RB26DETT	-	-	-	-	OP	-	-	-	-	-	-	OP	-	OP	-	OP	-	-
Skyline	R31/32	RB20DET	-	-	24	16	-	18	-	-	-	-	-	28	20	28	26	18	18	22
	R33	RB25DET	-	-	20	12	-	14	-	-	-	-	-	26	18	24	22	14	14	-
	R34	RB25DET	-	-	-	-	OP	-	-	-	-	-	-	OP	-	-	OP	OP	OP	-
	DR30	FJ20ET	24	16	24	16	18	-	-	-	-	-	-	-	-	32	-	-	-	-
	HR30 ~ GC10	L6	24	16	24	16	18	-	-	-	-	-	-	-	-	32	-	-	18	22
	(K)PGC10/KPGC110 S20														28	-	-	26	30	
Fairlady Z33	Z33 (without HR)	VQ35DE(NEO)	-	-	-	18	-	-	-	-	-	-	-	-	-	28	-	20	20	-
Fairlady Z32	Z32 Turbo	VG30DETT	-	-	24	16	18	-	-	-	-	-	-	28	20	-	-	18	18	-
	Z32-NA	VG30DE	-	-	24	16	18	-	-	-	-	-	-	-	-	-	-	-	-	-
Fairlady Z31	Z31-NA	VG30DE	-	-	24	16	18	-	-	-	-	-	-	-	-	-	-	-	-	-
	Z31 Turbo	VG30ET	-	-	24	16	18	-	-	-	-	-	-	-	-	-	-	-	-	-
Fairlady	S130 ~ S30	L6	24	16	24	16	18	-	-	-	-	-	-	-	-	32	-	-	18	22
	SR311	U20														28	-	-	-	-
Silvia	S15 #1	SR20DET	-	-	-	24	-	-	-	-	-	-	-	-	-	28	-	26	26	30
	(R) PS13/S14	SR20DET	-	-	20	16	18	-	-	-	26	16	-	-	-	28	-	16	16	20
	(R) S13	CA18DET	24	16	24	16	18	-	-	-	-	-	-	-	-	28	-	-	-	-
Pulsar GTI-R	RNN14	SR20DET	-	-	*	-	-	-	-	*	-	-	-	-	*	-	-	-	-	-
Bluebird	H510/P510	L4	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	-	-	22

Reference: Release sleeve bearing for Nissan

Nissan Parts number (Release sleeve)

12mm 30501-A3804	20mm 30501-B6064	28mm 30501-1C104
14mm 30501-N1604	22mm 30501-S0164	32mm 30501-U8584
16mm 30501-02C74	24mm 30501-K0401	
18mm 30501-S0284	26mm 30501-K0514	

• When twin plate sprung hub system (TS2AD, TS2BD, TS2CD and TR2CD) or triple plate system (TS3A, TS3B(W), TS3C, TR3BW and TR3CW) is used, cut the part about 4mm shown in Figure 3. This part may obstruct the movement of clutch disks, causing damage. (R series are exceptions.)

• When twin plate sprung hub system (TS2AD, TS2BD, TS2CD and TR2CD) or triple plate system (TS3A, TS3B(W), TS3C, TR3BW and TR3CW) is used, check the thickness of the heads of flywheel bolts. If the thickness of the heads exceeds 8.5mm, it has to be ground to the proper thickness. The thickness should be in between 8mm and 8.5mm. See Figure 4.

NOTE Parts needed for installation by application

TOYOTA

Case of Super Single, STR, GT

Use enclosed sleeve bearing or movement alteration kit exclusively designed for each application.

ALTEZZA (SXE10) 8 genuine Nissan flywheel bolts (parts # 12315-04U00) are required for installation.

Supra (JZA80 Turbo) OS flywheel bolts or modified (see figure 5) JZA70 flywheel bolts are required for installation.

Case of Multi plate system

Starlet	EP82/92	4E	
Levin, Trueno, MR2	AE86~111, AW11	4AG	Need OS sleeve kit for AW11.
	AW11, AE92/101	4AGZ	
ALTEZZA #1	SXE10	3SG	Need 8 genuine Nissan flywheel bolts (parts #12315-04U00) and OS sleeve kit.
MR2 (NA)	SW20	3SG	Need OS sleeve kit.
MR2 (Turbo)	SW20	3SGT	Need OS sleeve kit.
Celica	ST185/205	3SGT	Need OS sleeve kit.
	ST202	3SG	Need OS sleeve kit.
Soarer, MkII, Chaser, Celica	GZ20, GX71, GX81	1GGT	OS sleeve kit (reduce pedal effort) is provided for this model.
Supra, Soarer		5MG	
		6MG	
	MA70	7MG	Need Optional Clutch release movement alteration kit (Not applicable to the system for 2JZ).
	JZA70, Z30	1JZ	Need Optional Clutch release movement alteration kit (Not applicable to the system for 2JZ).
MkII, Cresta, Chaser	JZX90/100	1JZ	Need Optional Clutch release movement alteration kit (Not applicable to the system for 2JZ).
Supra #2	JZA80 (Turbo charged model only)	2JZ Turbo	Need Optional Clutch release movement alteration kit (Not applicable to the system for 1JZ).
86 #3	DBA	FA20	Need OS sleeve kit and genuine Subaru fork kit

#1 ALTEZZA (SXE10) 8 genuine Nissan flywheel bolts (parts # 12315-04U00) are required for installation.

#2 Supra (JZA80 Turbo) OS flywheel bolts or modified (see Figure 5) JZA70 flywheel bolts are required for installation.

#3 86 (DBA) - Genuine Subaru release fork (30531-AA180) and fork pin (30534-AA001) are required for installation.

MAZDA

Case of Super Single, STR, GT

Use enclosed sleeve bearing or movement alteration kit exclusively designed for each application.

FC3S Genuine MAZDA balance weight and 6 bolts are required for installation.

Use genuine counter weight of part # N327-11-521A, and bolts of part # 8051-27-236 for Chassis No.0~200000 (before minor change).

Use genuine counter weight of part # N351-11-521, and bolts of part # 8051-27-236 for Chassis No.200001~ (after minor change).

FD3S Genuine MAZDA balance weight of part # N327-11-521 and 6 bolts of part # 8051-27-236 are required for installation.

A sealing gasket and a spring in the master cylinder has to be removed, or the clutch will not disengage properly. See Figure 6 as a reference.

RX-8 Genuine MAZDA balance weight of part # N322-11-52X and 6 bolts of part # 8051-27-236 are required for installation.

Case of Multi plate system

RX-8 #1	SE3P	13B-MSP	Need OS sleeve kit.
RX-7 #1	FD3S	13BT	Need Optional Clutch release movement alteration kit, balance weight and 6 bolts for the weight.
	FC3S	13BT	Need balance weight and 6 bolts for the weight.
	SA22C	12A	Need balance weight and 6 bolts for the weight.
Roadster	NA6CE	B6	Need OS sleeve kit.
	NA8C	BP	Need OS sleeve kit

#1 SA22C If thermal reactor and/or catalytic converter is equipped, genuine MAZDA counter weight (part # 1883-11-751A) and 6 bolts (part # 8051-27-235) are required for installation. If 6PI and/or Turbo charger is equipped, genuine MAZDA counter weight (part # N226-11-751A) and 6 bolts (part # 8051-27-235) are required for installation.

FC3S Genuine MAZDA balance weight and 6 bolts are required for installation.

Use genuine counter weight of part # N327-11-521A, and bolts of part # 8051-27-236 for Chassis No.0~200000 (before minor change). Use genuine counter weight of part # N351-11-521, and bolts of part # 8051-27-236 for Chassis No. 200001 ~ (after minor change).

FD3S Genuine MAZDA balance weight of part # N327-11-521 and 6 bolts of part # 8051-27-236 are required for installation. A sealing gasket and a spring in the master cylinder has to be removed, or the clutch will not disengage properly. See Figure 6 as a reference. When R3A is used, check the thickness of the heads of balancer weight bolts. If the thickness of the heads exceeds 7.5mm, it has to be ground to the proper thickness. The thickness should be in between 7.3mm and 7.5mm. Do not grind them excessively as it will weaken the bolts.

RX-8 Genuine MAZDA balance weight of part # N322-11-52X and 6 bolts of part # 8051-27-236 are required for installation.

Preparation and Parts needed for Installation

! Parts needed for installation by application

NOTE

MITSUBISHI

Case of Super Single, STR, GT

Use enclosed sleeve bearing or movement alteration kit exclusively designed for each application. Genuine MITSUBISHI parts (parts # MD725220), or main drive shaft of MAZDA FC3S can be used as a clutch disk center alignment tool for Lancer Evolution IV~X.

Case of Multi plate system

Galant VR-4	E38/39A	4G63	Need OS sleeve kit.
Lancer Evolution I-III	CD/CE9A	4G63	Need OS sleeve kit.
Lancer Evolution IV~X	CN9A/CP9A/CT9A/CZ4A	4G63	Need Optional Clutch release movement alteration kit.
Legnum VR-4	EC5W	6A13	Need Optional Clutch release movement alteration kit.
GTO Turbo	Z16A	6A72	Need OS sleeve kit.

Genuine MITSUBISHI parts (parts # MD725220), or main drive shaft of MAZDA FC3S can be used as a clutch disk center alignment tool for Lancer Evolution IV~X.

HONDA

Case of Super Single, STR, GT

Use enclosed sleeve bearing or movement alteration kit exclusively designed for each application.

Case of Multi plate system

NSX	NA1	C30A	Need Optional Clutch release movement alteration kit.
S2000	AP1	F20C	Need Optional Clutch release movement alteration kit.
Prelude	BB1/4	H22A	Need OS sleeve kit.
CR-X	EF8	B16A	Need OS sleeve kit.
CIVIC	EF9	B16A	Need OS sleeve kit.
	EG6	B16A	Need OS sleeve kit.
	EK4	B16B	Need OS sleeve kit.
	EK9	B16B	Need OS sleeve kit.
Integra	DC2	B18C	Need OS sleeve kit.
Beat	PP1	E07A	Need OS sleeve kit.

SUBARU

Case of Super Single, STR, GT

Use enclosed sleeve bearing or movement alteration kit exclusively designed for each application. BRZ Genuine Subaru release fork (30531-AA180) and fork pin (30534-AA001) are required for installation.

Case of Multi plate system

Impleza	GC8	EJ20	Need Optional Clutch release movement alteration kit.
	GDB/GRB	EJ20	Need Optional Clutch release movement alteration kit.
BRZ			Need OS sleeve kit and genuine Subaru fork kit

BRZ Genuine Subaru release fork (30531-AA180) and fork pin (30534-AA001) are required for installation.

SUZUKI

Case of Single Plate system for Kei car (Japanese micro vehicle).

Cappuccino	EA11R	F6A	
Alto Works		F6A/B	Need OS sleeve kit.
		F5B	
		F5A	

Case of other manufacturers / special ordered system

Use genuine manufacturer parts for installation. Otherwise specific instruction should be given for each application.

Installation and Warning



Warning on adjustment

- Use new flywheel bolts and release sleeve bearing for installation of new clutch system. Use the parts if they are provided in the kit.
- Check pilot bearing and pilot bushing. If they are worn out, replace them before installation of new clutch system.
- Balance weight and fastener bolts are needed for rotary engine models. Read "Parts needed for installation by application" in this booklet.
- Use proper clutch disk center alignment tool for installation.



1. Disassembling the transmission and clutch system

Read manufacturer's service manual. Follow the instruction.



2. Before installing OS clutch system

1. Clean the splines on main input shaft after removing O.E. clutch system. Remove all dirt and grease remains.
2. Never apply conventional grease to the main drive shaft and the splines on it. It may fly off on to clutch disks, and may cause slip and excessive wear of clutch disks. Aerosol lubricant will work fine.



3. Before refitting the transmission

1. Check if the system is installed properly. Check if all the moving parts operate smoothly as well. Check for bends and damages of input shaft, release fork and pivot. If you find any problem, replace them before installation. Take extra attention if reinforced clutch system had been used before, or the transmission is well worn.
2. Apply grease to the inside of release sleeve, and see if release fork and release sleeve operates properly.

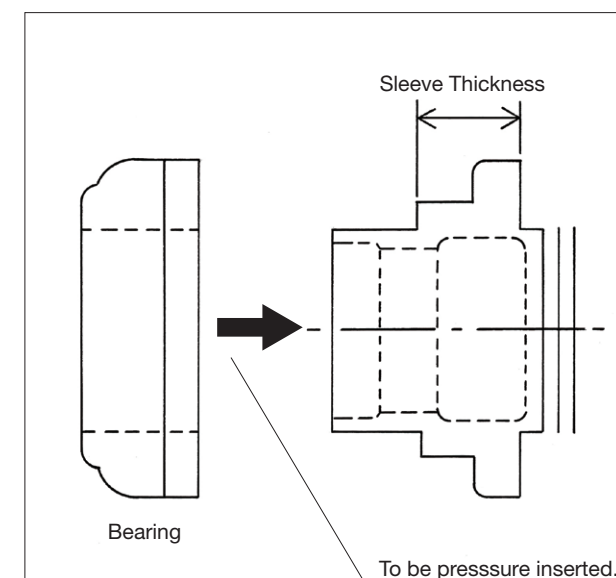


Figure 1

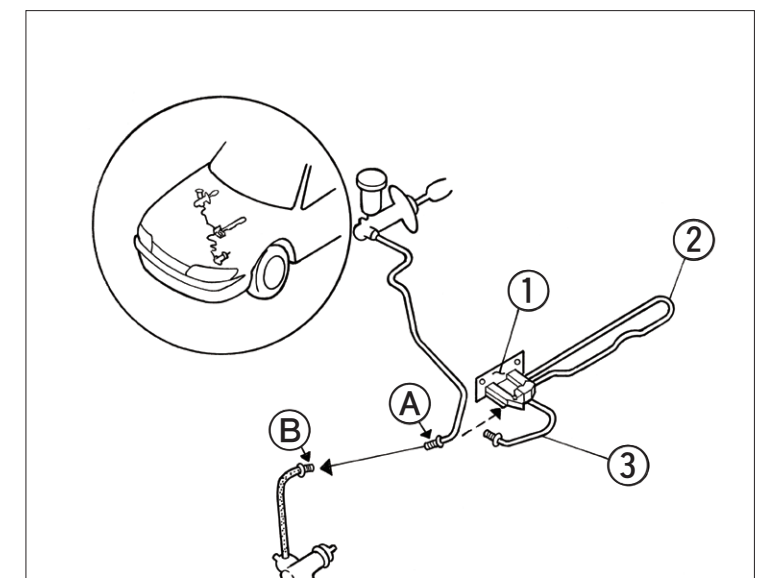


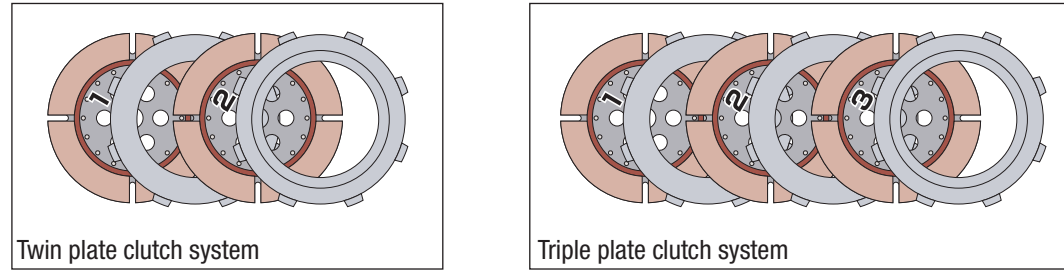
Figure 2

Installation and Warning

4. Checking the Clutch system

NOTE

The sequence of clutch disks is arranged at our factory. Do not change the sequence of the clutch disks. When the clutch cover is removed for installation, NEVER un-tighten diaphragm bolts. If the numbers are given on the disks, they should be in the sequence from the flywheel and numbered surface should be facing the cover. See illustrations below.



5. Checking the tightening torque of bolts

NOTE

Check tightening torque of the bolts of clutch housing (multi plate system) or shaft (single plate system). If they are not, tighten them to the desired torque settings shown in **Chart 1**.

6. Before the installation of flywheel

NOTE

- If pilot bushing and/or pilot bearing is used and you are planning to replace them, read manufacturer's service manual carefully.
- Flywheel bolts Use genuine flywheel bolts unless specific instruction is given in this booklet.
OS flywheel is thinner compared to originally equipped one for better engine response. For that reason, original equipped flywheel bolts may be longer than it should in some cases. When this happened, cut the bolts as following: Tighten the bolt to the crankshaft till it touches the end. Check the length of remaining thread out of crankshaft. Cut the bolt so that the length of it should be 2-2.5mm shorter than the thickness of the flywheel. See **Figure 5**.

7. Fitting the flywheel

WARNING

- Fit flywheel using a torque wrench. See **Chart 2** for proper reading. If it is not listed on the chart, see manufacturer's service manual. NEVER use air operated impact wrench.

8. Fitting the disk and cover

NOTE

- Use clutch disk center alignment tool with spline. Check if the tool moves smoothly before tightening bolts of clutch cover. Tighten them in diagonal order. See **Chart 3** for proper installation. Also see **Chart 1** for desired tightening torque

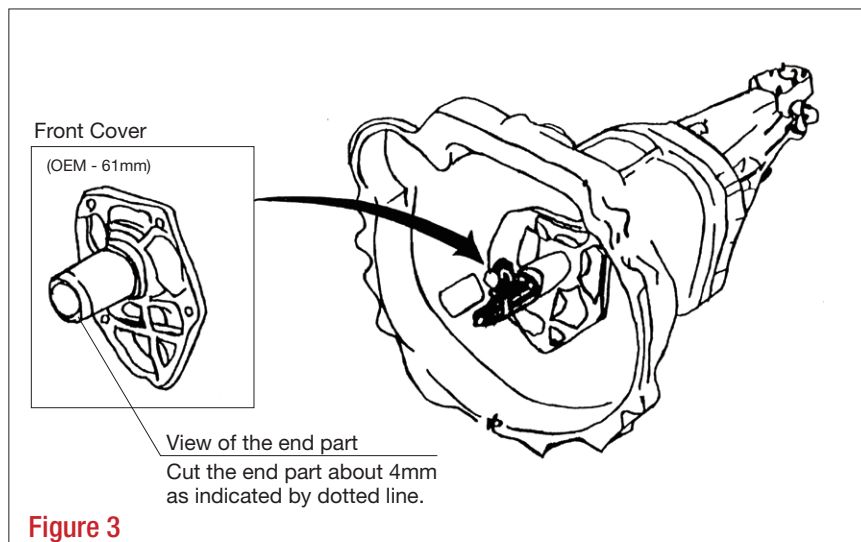


Figure 3

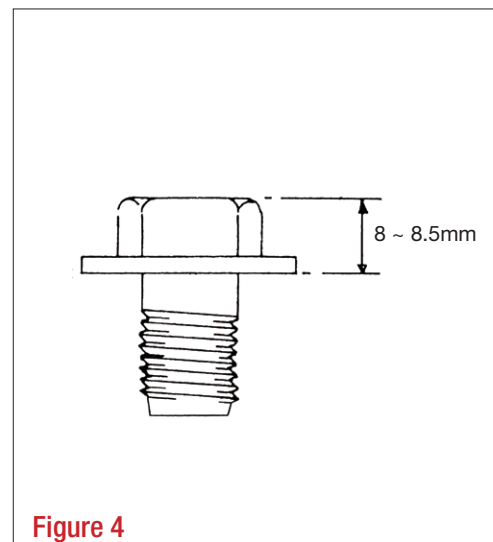


Figure 4

9. Refitting the transmissin

NOTE

When refitting the transmission back, keep it level and steady using a transmission jack. Do not give it a shake or excessive force to put it in a place. Do not tighten the transmission unless it placed properly onto the engine. Make sure that there is no opening between transmission case and the engine. Then tighten bolts or nuts to proper torque. Giving the transmission a shake or excessive force may damage the main input shaft, clutch disks, and/or synchronizer rings of transmission gears in worst case. Take extra care when refitting the transmission.

Warning on adjustment

NOTE

- Bleed the release cylinder, following the manner given in manufacturer's service manual. Remaining air in the release cylinder will cause unnecessary half-clutch, which result in slip, vibration, and excessive worn out of the clutch system.
- Adjust the clutch pedal after installation.
- Clutch release movement alteration kit does not have an automatic adjustment mechanism. For that reason, adjustment after break-in is necessary.

Warning on after-installation

NOTE

Lay hydraulic hose as simple as possible. See the **Figure 2 on previous page.**

- When this product is installed, the clutch pedal tends to be "heavier" compared to the originally equipped one as it has a higher rate pressure plate spring. Please be aware that this product demands some practice to operate smoothly, since the unconventional metallic materials are used for the friction plates.
- A clutch system needs break-in period. Surface of the plates has to contact with each other completely for maximum performance. Do not try to give hard acceleration until the break-in ends, or slip, vibration, and excessive worn out of the clutch system may occur.
- Do not use half clutch excessively as it will cause slip and vibration, and also reduce the life of the clutch system.
- Transmission that is equipped with this clutch system will produce rattling sound when disengaged, due to the multi plates mechanism.
- When this clutch system is used in an extremely severe conditions such as drag racing, please inspect the system periodically.

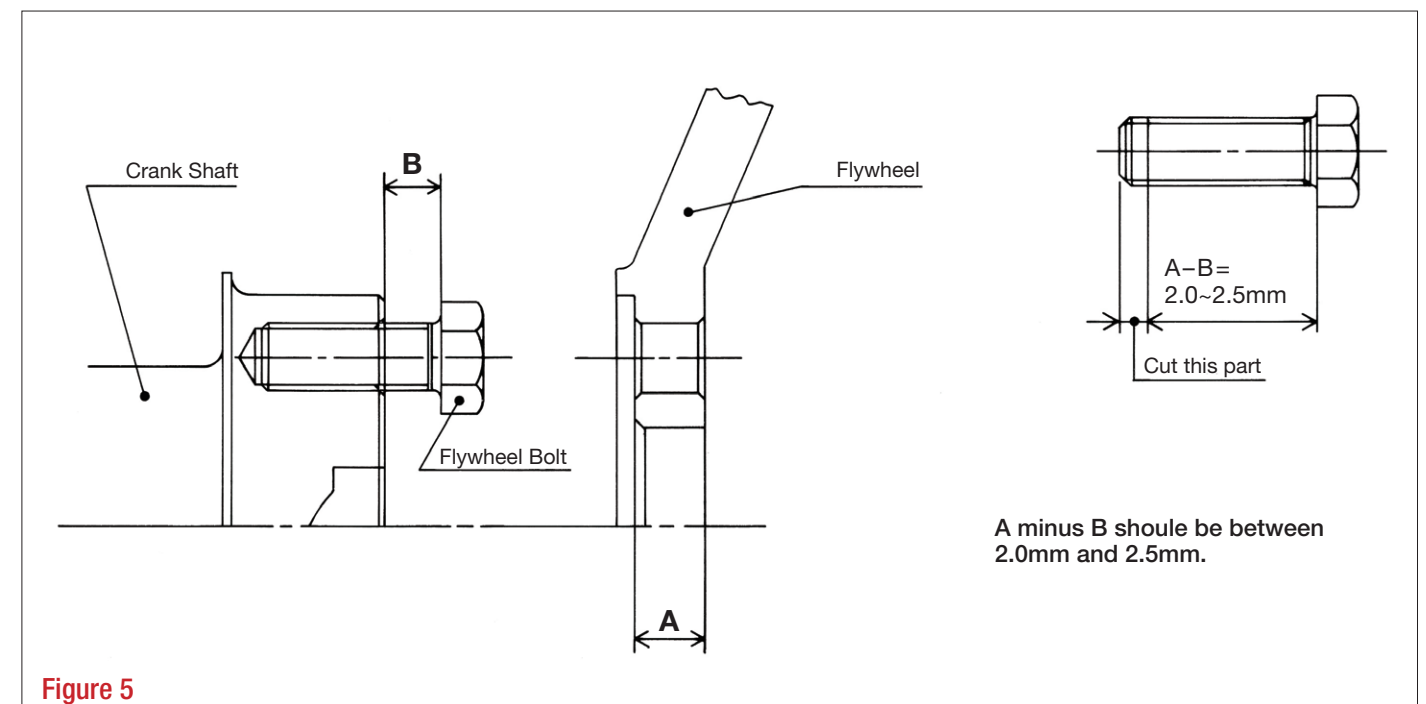


Figure 5

Chart 1 Bolt Tightening Torque Specifications

360° Housing Type Clutch (Single, Twin, Triple, Quadruple, Pressed Steel and Aluminum Cover)	Housing Bolt (M6)	Cover Bolt (M6)	Diaphragm Bolt
Refer to Pic. 1	1.8kg-m (13 lb-ft)	1.8kg-m (13 lb-ft)	Do not tighten nor loosen.
Shaft Type Clutch (Super Single Only, Pressed Steel and Aluminum Cover)	Shaft Bolt (M8)	Cover Bolt (M8)	Diaphragm Bolt
Refer to Pic. 2	3.0~3.5kg-m (22~25 lb-ft)	3.0kg-m (22 lb-ft)	Do not tighten nor loosen.

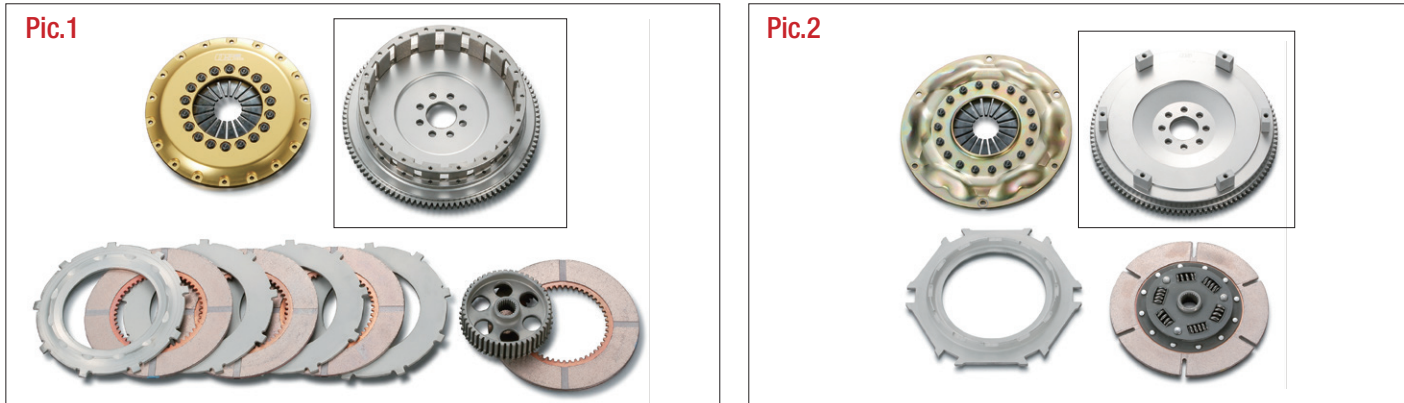


Chart 2 Flywheel Bolt Tightening Torque

Manufacturer	Engine Type	Tightening torque (kg-m)
Nissan	VG30DET, VG30DE, VG30ET, SR20DET	8.5~9.5
	SR20DET on RNN14 (Pulsar)	13~14
	RB26DETT, RB25DET, RB20DET	14.5~15.5
	L28, L20, FJ20ET	14~16
	CA18DET, CA18DE	10~11
Toyota	7M-GTEU, 6M-G, 5M-G, 1G-GTE, 4A-GTE, 4A-GE	7.5~8.5
	2JZ-GTE, 1JZ-GTE	8.5~9.0
	3S-GTE	11
Mazda	FC3S, SA22C	Flywheel center nut 40~50 / Counter weight bolt 8.5~10
	FD3S	Flywheel center nut 40~50 / Counter weight bolt 8.5~10
Mitsubishi	6G72T	7.3~7.7
	4G63T, CD9A	13~14
	3G81T	7~8
Subaru	EJ20-G	7.6
Suzuki	F5A, F5B, F6A, F6B	4~4.5
Daihatsu	L200, L500	4~5
Honda	ZC (All Vehicle)	12
	B16A (All Vehicle)	10.5

•When the clutch system is used for engine not listed above, please follow the instruction of each manufacturer's service manual.

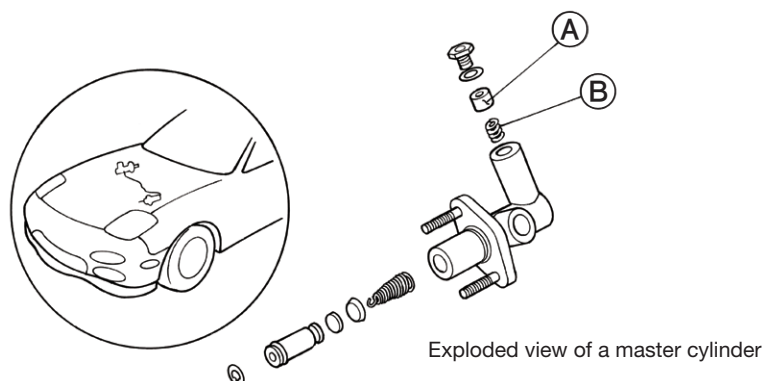


Figure 6

Chart 3 How to Tighten Clutch Cover Bolts

Step 1. Temporarily tighten the clutch cover bolts by hand. At this time, tighten the bolts in order following the order shown on **Chart 3**. After temporarily tightening by hand, insert center alignment tool and make sure friction discs are aligned.

If you can not move the alignment tool smoothly, you need to loosen all the cover bolts and repeat from the beginning.

Step 2. Temporarily tighten the clutch cover bolts using a tool in the same order as Step 1. At this time, do not fully tighten to the torque spec shown on **Chart 1**. After temporarily tightening with the tool, insert center alignment tool and make sure friction discs are aligned. If you can not move the alignment tool smoothly, you need to loosen all the cover bolts and repeat from Step 1.

Step 3. Tighten the clutch cover bolts with a torque-wrench at the torque spec shown on **Chart 1** in the same order as Step 1. Afterwards, insert center alignment tool and make sure friction discs are aligned. If you can not move the alignment tool smoothly, you need to loosen all the cover bolts and repeat from Step 1.

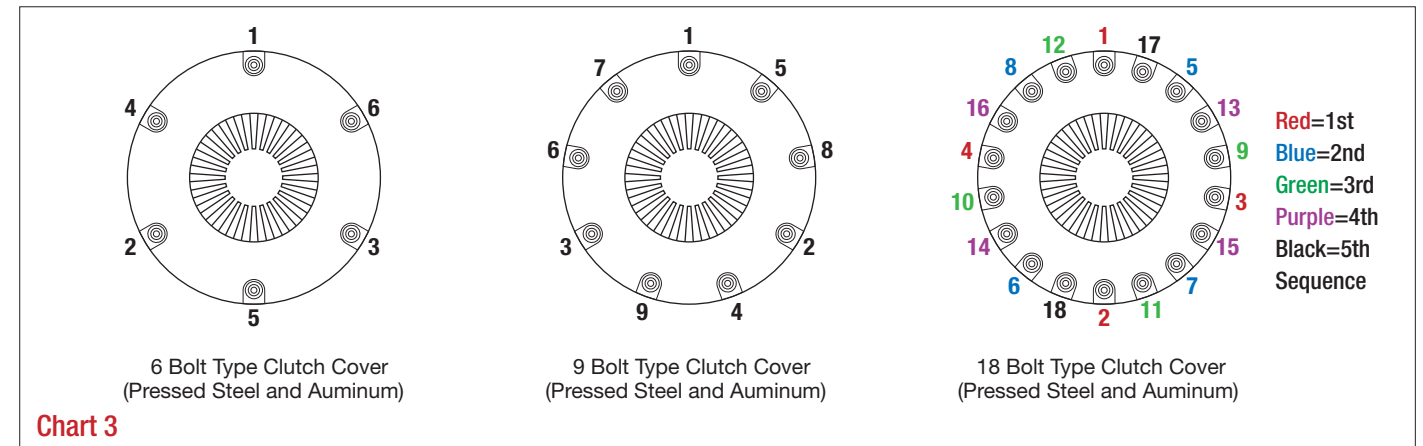


Chart 3

•Remarks: Some clutch kits come with OS GIKEN Flywheel Bolts. If this is the case, you must to tighten them to OEM torque specs as listed in the manufacturer's service manual.

OS Multi Plate Clutch reference

