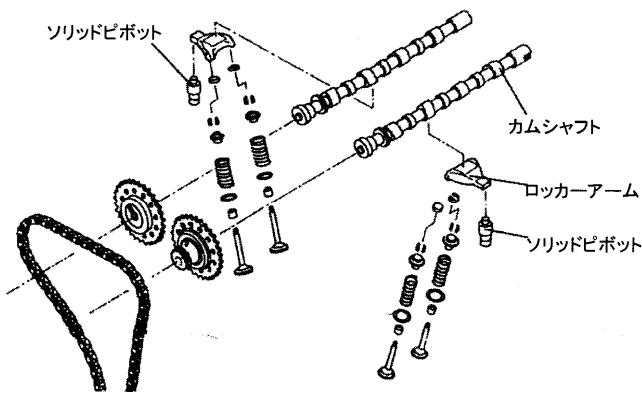


Read this manual thoroughly before installation
 Use a Nissan FSM along with this manual
 Please be safe
 After the sale and installation, please return this booklet to the customer

Changing the shim and guide thickness is necessary for cam clearance adjustments

SR20 Solid Pivot (※Not for use with N14 GTI-R)

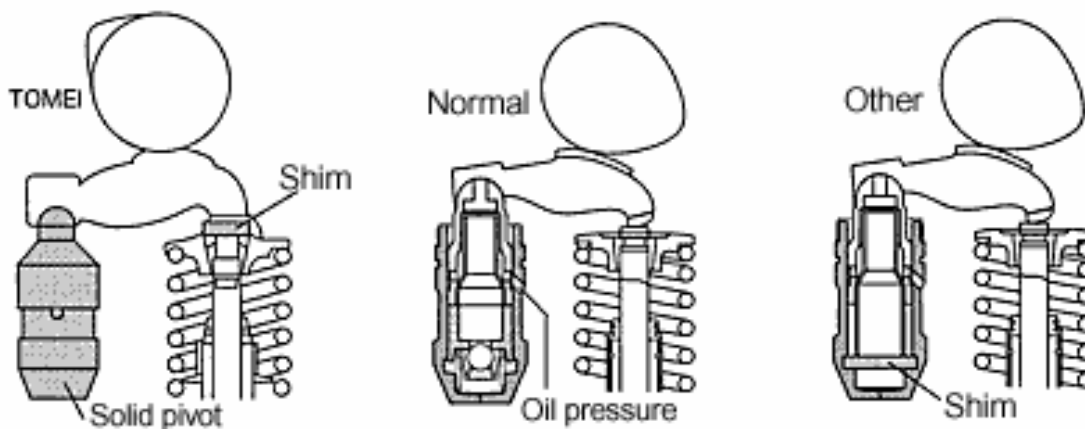
Solid Pivot Item Number: 163003



Thank you for purchasing TOMEI products.

In order to make cam clearance maintenance-free, and achieve operation sound reduction, hydraulic lash adjuster is adopted to SR20 engine. However, when aiming at high rotation and a high output by engine modification, it is important to improve the reliability of head parts and to make valve drive correctly as the cam profile. Accordingly, it is necessary to eliminate the function of lash adjuster.

TOMEI adopt solid pivot system to enable cam clearance adjustment, while keeping total height of pivot of each cylinder fixed. Thereby, it is possible to build much precise head system in shorter time compare to the others. Moreover, improvement in reliability and the low price were realized at the same time by having reduced the number of parts.



Translation by
 ILikeMy240sx (NICO)

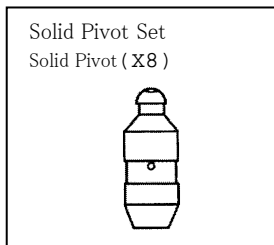


NOTE

- * This item is for off-road use only. Please only use in a circuit closed from public roads.
- * If you use this item on public roads, original vehicle safety is compromised and it is dangerous. In addition, you will be penalized for violating laws.
- * Installation for special automobile competitions should be carried out by a professional mechanic and should be done in a shop with proper equipments.
- * This item is not meant for engines other than the ones listed. When you install in other engines, you risk the chances of breaking the part or the engine.
- * You risk injury by installing without proper tools and personal protective equipments.
- * Tomei Camshafts are necessary for these solid pivots.

What is included

Please make sure you have all the parts listed below. The number in parenthesis is the quantity of that part.

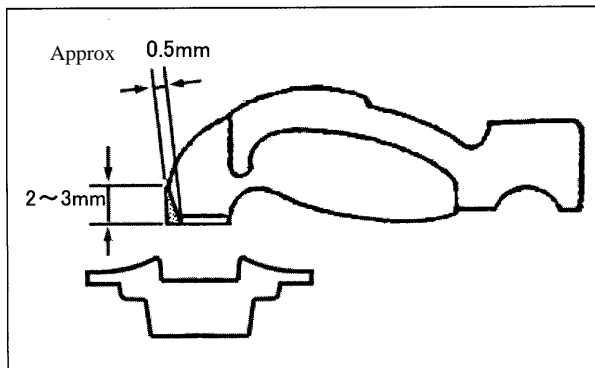


Tools necessary for installation

Below is what you need at the time of installation

Tool set for engine service	Test shim/guide kit. Necessary for calculation of proper shim/guide sizes.	
Solid pivot set, test shims, TOMEI cam shafts	Test shims	Test guide
	t=2.800(x 4)・・・IN用 t=2.700(x 4)・・・EX用	t=2.800(x 4)・・・IN用 t=2.700(x 4)・・・EX用

Installation Preparation



Please cut the rocker arm as shown in the picture

Please cut every rocker arm that will be used.

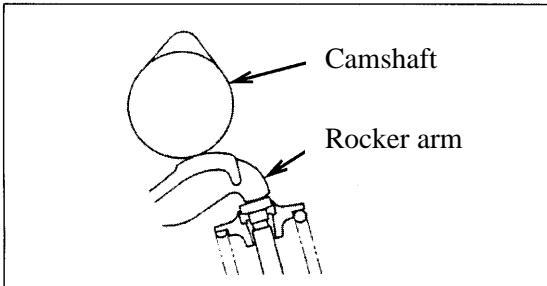
Please cut both the guide side and the shim side.

Cam Clearance Adjustments



Note

Please follow N-14 Pulsar GTI-R repair book A011018J for adjustment of cam clearance

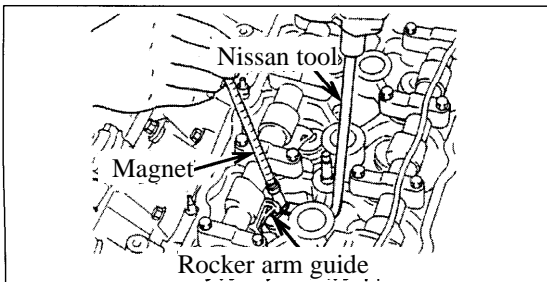


(1) As shown in the left figure, turn the camshaft so that the round part of the cam lobe is in contact with the rocker arm

(2) Remove the cam oilers



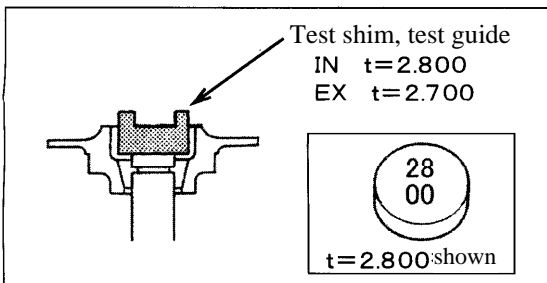
Tighten the cam brackets to specified torque



(3) As shown in the left figure, use the Nissan tool KV10115400 to compress the valve spring by pulling the tool forward

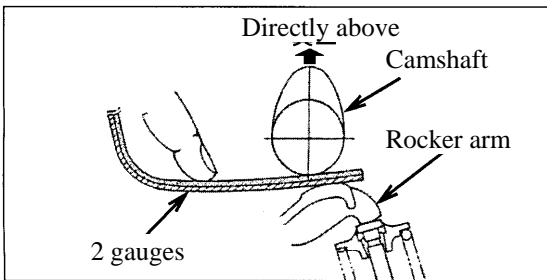
***If you do not have the Nissan tool you must remove the camshafts

With the valve spring retainer lowered, use a magnetic wand to remove the shim and the guide



(4) Install test shims and guides
Intake: 2.80mm Exhaust: 2.70mm

(Test shims and guides are not included with the solid lifter kit. Please purchase them beforehand.)



(5) Measuring Cam clearance

-As shown in the left figure, turn the camshaft so that the round part of the cam lobe is in contact

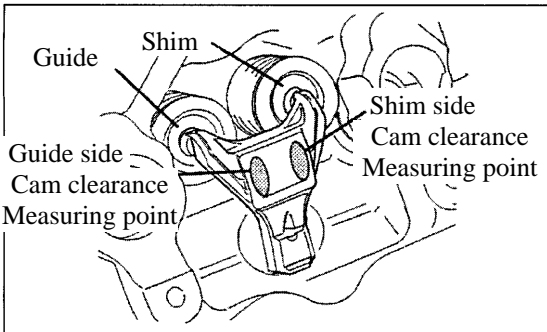
-Insert 2 gauges stacked on each other in between the cam lobe and rocker pad

-Measure the clearance at both ends of the rocker pad as shown in the left and record



Please use JIS 150A25 (special grade) feeler gauge

Cam clearance = gauge 1 + gauge 2



Reason for using 2 gauges

Gauges do not go in parallel to the structure

*Thicker gauge has high rigidity and does not bend

*When a thin gauge is used 3 or more times, error increases

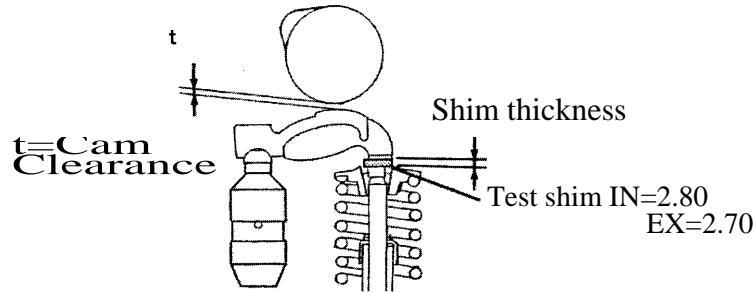
(6)Cam Clearance Adjustment

Record the difference between the clearance measured and the desired clearance

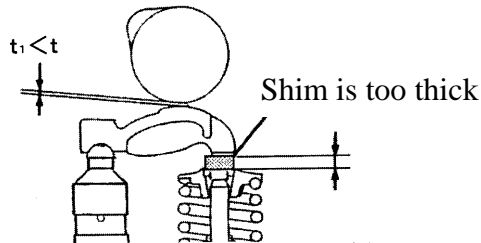
Measured clearance – Desired clearance = The difference you record

Nissan Motor Recommends clearance of: 0.14~0.17mm (when cold)

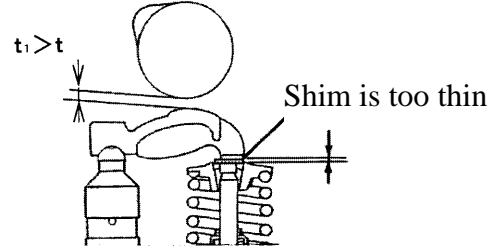
For example: Measured clearance (0.27) – Set Clearance (0.16) = 0.11 What you record



When thinner shims are needed



When thicker shims are needed



In order to adjust cam clearance to the desired level, you need to increase or decrease the shim size with consideration to lever ratio of the rocker arm (constant 1.43)

(1)Shim thickness calculation guide

Difference * (constant) 1.43 = Adjustment value

For example, difference 0.11 * 1.43 = 0.1573

*When making the clearance smaller

Thickness of present shim + adjustment value = Shim needed

For example, 2.8+0.16=2.96

*When making the clearance larger

Thickness of present shim - adjustment value = Shim needed

For example, 2.8-0.16=2.64

(2) Selection of shim and guide size

The closest thickness to 2.96mm is selected

2.92 2.94 **2.96** 2.98 3.00

Shim sizes

2.60	3.00
2.62	3.02
2.64	3.04
2.66	3.06
2.68	3.08
2.70	3.10
2.72	3.12
2.74	3.14
2.76	3.16
2.78	3.18
2.80	3.20
2.82	
2.84	
2.86	
2.88	
2.90	
2.92	
2.94	
2.96	
2.98	

Guide sizes

2.60
2.62
2.64
2.66
2.68
2.70
2.72
2.74
2.76
2.78
2.80
2.82
2.84
2.86
2.88
2.90
2.92
2.94
2.96
2.98
3.00

※Shim and guides have different scale

Please order the necessary thickness determined from calculation above. Please turn to the next page for item numbers.

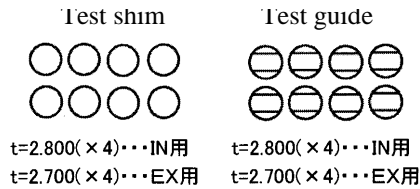
(7) Verification of Cam Clearance

Please install the shim that you ordered and measure the cam clearance for the second time. Adjust cam clearance again if necessary. As for shim or guide sizes that are not listed in the chart, use a grindstone to adjust the thickness

【Sold Separately】

Test shims, test guide set

Item number: 163004



Repair parts	Shim			Shim			Guide					
	Size	Part No.	Price	Size	Part No.	Price	Size	Part No.	Price			
	2.600	161 0092600	\$1 0.00	3.000	161 0093000	\$1 0.00	2.600	161 01 02600	\$1 0.00			
	2.620	161 0092620		(3.025)	13229-53J09			2.620		161 01 02620		
	2.640	161 0092640		(3.050)	13229-53J10			2.640		161 01 02640		
	2.660	161 0092660		(3.075)	13229-53J11			2.660		161 01 02660		
	2.680	161 0092680		3.100	161 00931 00			2.680		161 01 02680		
	2.700	161 0092700	\$1 0.00	(3.125)	13229-53J1 3	\$1 0.00	2.700	161 01 02700	\$1 0.00			
	2.720	161 0092720		(3.150)	13229-53J1 4			2.720		161 01 02720		
	2.740	161 0092740		(3.175)	13229-53J1 5			2.740		161 01 02740		
	2.760	161 0092760		(3.200)	13229-53J1 6			2.760		161 01 02760		
	2.780	161 0092780						2.780		161 01 02780		
	2.800	161 0092800	\$1 0.00	Ⓞ NISSAN genuine			2.800	161 01 02800	\$1 0.00			
	2.820	161 0092820					2.820	161 01 02820				
	(2.825)	13229-53J01					2.840	161 01 02840				
	2.840	161 0092840					2.860	161 01 02860				
	(2.850)	13229-53J02					2.880	161 01 02880				
	2.860	161 0092860					2.900	161 01 02900				
	(2.875)	13229-53J03					2.920	161 01 02920				
	2.880	161 0092880					2.940	161 01 02940				
	2.900	161 0092900	\$1 0.00				2.960	161 01 02960	\$1 0.00			
	2.920	161 0092920									2.980	161 01 02980
	2.940	161 0092940									(3.000)	13218-53J00
	(2.925)	13229-53J06										
	(2.950)	13229-53J06										
	2.960	161 0092960										
	(2.975)	13229-53J07										
	2.980	161 0092980										

※Please contact us for the special size