

18R-G ENGINE TUNING PARTS



18RG Engine Parts

18RG 2200cc forged high compression piston (φ92 φ92.5)



Piston specifications

•Type	High compression
•Manufacturing method	Forged and machined
•Pistondiameter	φ92 φ92.5
•Displacement	φ92=2,126cc φ92.5=2,149cc
•Pin height	39.75mm
•Pin diameter x length	φ22×52mm
•Piston ring thickness	φ92 1.5-1.5-2.8mm φ92.5 1.5-1.5-3.0mm
•Piston weight	φ92-373g φ92.5- g
•Valve recess	Compatible with big valves
•Compression ratio	10.5:1
•Crank/connecting rod used	18RG STD

Price ¥105,000 (Updated 2026.01.01)

18RG 2012cc forged street piston (φ89.5)



Piston specifications

•Type	Street type
•Manufacturing method	Forged and machined
•Piston diameter	φ89.5 (1.0mm oversize)
•Displacement	2012cc
•Pin height	39.75mm
•Pin diameter x length	φ22×52mm
•Piston ring thickness	1.5-1.5-2.8mm
•Piston weight	337 g
•Valve recess	Compatible with STD valve
•Compression ratio	8.5:1 (compatible with regular gasoline)
•Connecting rod used	18RG STD
•Crank used	18RG STD

Price ¥105,000 (Updated 2026.01.01)

18RG Stainless steel octopus legs (FGK)



All-stainless steel restacco feet molded from the RA25 Celica. Mounting bolt holes are compatible with both early model M8 bolts and later model M10 bolts by using the included collars.

Price: ¥135,000 (Updated 2026.01.19)

•Type 4-2 All Stainless Steel
•Pipe diameter 42.7mm
•Compatible with RA25 Celica
•Year 1973.4-1975.9

18RG Idler Gear (Secondary Side) Type-2



With the OEM chain guide, the use of high cams and reinforced valve springs creates a heavy load on the chain, which attacks the chain guide with a large amount of friction. This causes problems such as friction loss, wear on the chain guide, and delayed valve timing, resulting in horsepower loss. This idler gear replaces the chain guide and uses a reinforced needle roller bearing sprocket that is resistant to high loads and high revolutions, maintaining good valve timing and friction loss and improving high power and high revolutions.

Price: ¥22,000

18RG metal head gasket



This bead-type head gasket secures surface pressure by providing press-formed beads around the combustion chamber and water and oil holes, which require high sealing performance. The layout is appropriately distributed by the width and height of the beads, making it an indispensable part for tuning engines.

G/K Bore diameter	Thickness	Price
φ92 φ92.5	1.0mm	¥22,000
φ90φ92φ92.5	1.2mm	¥23,000
φ92 φ92.5	1.5mm	¥24,000
φ92 φ92.5	2.0mm	¥27,000
φ92 φ92.5	2.5mm	¥30,000
φ92	3.0mm	¥32,000

18RG reinforced timing chain



This reinforced chain has a relatively thin 5-10μ manganese phosphor-based insoluble film formed on the metal surface, which is evenly and evenly permeated into the material surface. This achieves four times the wear resistance! It keeps the chain in the best condition for a long time by suppressing valve timing delays caused by chain elongation. It is also resistant to seizure and galling that often occur in the sliding parts of the chain, and helps maintain smooth movement and reduce friction loss.

- Stronger timing chain, primary side:¥8,000
- Stronger timing chain, secondary side: ¥16,000

*The sprocket gear in the image is not included in the chain.

18RG Flywheel & Flywheel Bolt



The most effective way to make the 18RG engine more responsive is to reduce the weight of the flywheel. We have adopted the highly durable SCM material and designed it to be thin while maintaining high strength.

Lightweight Chromoly Flywheel

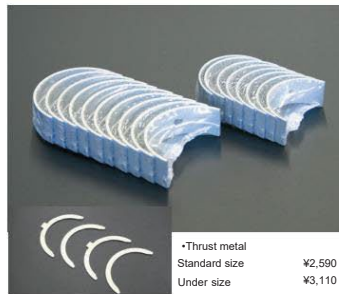
•STD type (5.0kg)	¥50,000
•R type (4.7kg) Lightweight	¥54,000

ARP reinforced flywheel bolts

While the lightening torque of the genuine bolts is 6.6kg/m, the ARP reinforced bolts have a tightening strength of 13.5kg/m, preventing the bolts from loosening at high revolutions.

¥8,000

18RG F770-WPC Molybdenum metal



F770 WPC Molybdenum Metal (STD size)

•Main metal set (without center flange)	¥18,940
(with center flange)	¥22,800
•Connecting rod metal set	¥14,510

F770 WPC Molybdenum Metal (Undersize)

•Main metal set (without center flange)	¥21,170
(with center flange)	¥24,310
•Connecting rod metal set	¥16,160

•Undersize type 0.25 0.50 0.75 1.00

•Thrust metal
Standard size ¥2,590
Under size ¥3,110
*The thrust metal is not WPC treated.

18RG Head Parts

■Racing valve spring Type-R3



This is a racing valve spring designed to support engine specifications that aim for high lift cams and high revolutions. In addition to strengthening the set and full load, the spring is designed to aim for high power and high revolutions at the same time, such as by closely fitting the inner and outer springs to cancel out resonance and combining springs with different natural frequencies with unequal pitches to prevent surging at high revolutions.

¥26,000

■Lightweight long lifter



The valve lifter plays a major role in reducing the weight of the valve train. By using chromium-molybdenum steel, which has sufficient strength, the thickness is reduced, resulting in a significant reduction in weight. In addition, by designing the outer circumference to be long, the lifter's swing is suppressed, allowing it to accurately follow the cam profile, and the camshaft's original performance can be fully demonstrated.

¥40,000

■Lightweight 45/40.5φ valve



This valve is made from a strong metal material and has passed strict inspection standards, including forging, precision machining, heat treatment, and quality control. This racing valve is designed based on the three concepts of "efficiency, strength, and light weight," with a thin umbrella shape for light weight and a narrow stem diameter inside the port.

IN 45φ Lightweight valve (standard size)

Weight 84 g	¥4,000
Total length 106.2mm	

EX 40.5φ Lightweight big valve

Weight 78 g	¥4,000
Total length 105.1mm	

■Lightweight titanium retainer



Lightweight titanium retainer (weight: titanium 10g / genuine 21.6g)

1 set ¥28,000

Lightweight chromoly retainer (weight: chromoly 18.8g / genuine 21.6g)

1 set ¥18,000

■ Valve guide



Racing valve guide 1 set ¥18,000

STD valve guide 1 set ¥12,000

■ Valve spring flat washer



0.5mm/0.8mm/1.0mm ¥400 each / 1 piece

When installing a camshaft with a high angle or lift, the valve projection is increased to prevent interference between the valves. This lengthens the installation length of the valve spring, weakening the load. This spring washer is used to compensate for the loosened set load.

■ Reinforced tappet shim



1 piece ¥1000

To prevent variation in valve clearance, heat-treated chromium-molybdenum parts with excellent wear resistance are used. There are 111 thickness settings available, ranging from 1.5mm to 7.0mm in 0.05mm increments.
•1.3mm to 7.0mm (0.05mm increments, tolerance +0.03-0)

■ Valve spring stepped washer



¥8,000/SET

stepped spring seat is machined from chromoly for double type valve springs. It fits perfectly on double springs and stabilizes the center of the spring.

■45/38.5 STD valve



¥3,000 / 1 piece For

users who want to overhaul their valves without tuning them, we have reproduced a standard valve that is no longer manufactured. The shape and dimensions are the same as the original, and the material and heat treatment specifications have been reinforced to emphasize durability.

■Sliding cam sprocket gear



¥18,000 / 1 piece

The slide type has an adjustment scale of 2 degrees per scale, making it easy and accurate to set the valve lift. Also, the knock pin is press-fitted into the gear side, so there is no need to replace the pin and there is no risk of dropping the pin into the engine.