

### Full crankshaft processing



	tufting + bending correction	single key processing	Precision balance	tufted product	wrapping	Total
*In-line 4	¥28,000	¥14,000	¥14,000	¥25,000		¥81,000
*Straight 6	¥30,000	¥14,000	¥17,000	¥36,000		¥97,000

(Tuft processing + bending correction + single key processing + precision balancing + wrapping)

\*Straight 4 ¥81,000 \*Straight 6 ¥97,000

### Crankshaft wrapping



•Journal & pin wrapping (non-tufted items)  
#320y#400yBlue bar finish!

•Journal & pin wrapping (tufted items)  
#240y#320y#400yBlue bar finish!

The crankshaft is wrapped in the smallest amount possible to minimize the effect on oil clearance.

The product is finished by carefully measuring with a micrometer to ensure that there is no deviation in cylindricity or roundness.

By wrapping the crank surface, which places a large load on the metal, with high precision,

It reduces damage, reduces friction loss, and improves engine durability.

Crankshaft Machining	unit	4 cylinder price	6 cylinder price	remarks
Key processing for one crank	One	14,000	14,000	By using only one key, pulley problems can be prevented.
Crank bend correction	One	11,000	11,000	It took time to correct the bend to within 2/100.
Crank weight lightweight processing	One	28,000	36,000	Lighter weight for improved response!
Crank tuft processing (including bending correction)	One	28,000	30,000	Heat treatment to improve wear resistance. Lapping is required after treatment.
Crank rear end shortening (L type)	One	16,500	16,500	Offsets the FW mounting surface to reduce crank vibration. Starter motor collar required.
Crank knock pin processing (1 piece)	One	16,000	16,000	Measures to prevent FW bolts from loosening. Knock pins are pressed in using the same process as the FW.
Crank knock pin processing (2 pieces)	One	24,000	24,000	γ
Crank knock pin processing (3 pieces)	One	27,000	27,000	γ
Crank pin undersize grinding	One	40,000	52,600 (child side)	Polishing and correcting undersizing of crank due to metal trouble, etc.
Crank journal undersize grinding	One	30,000	44,200 (Parent side)	Same
Crank pin & journal undersize grinding	One	47,800	67,800 (parent and child)	Same
Crank thrust surface undersize grinding	One	15,000	15,000	Polishing of damaged thrust surface. Simultaneous processing with journal polishing.
Crank journal and pin wrapping (non-tufted)	One	19,000	27,000 #320 γ #400 γ	Blue bar finish! (Wrapping amount is within 1/100)
Crank journal and pin wrapping (tufted product)	One	25,000	36,000 #240 γ #320 γ #400 γ	Blue bar finish! (Wrapping amount is within 1/100)

### Bolt O/S + Crank housing line boring



\*An essential item for absorbing crank vibrations!

Changed the stock 10mm bolt to a 12mm chromoly bolt.

Then tighten it with a tightening bolt that is approximately twice as large as the bolt.

The caps are cut into perfect circles, cylinders, and caps by line boring.

The connection has been corrected from every direction to make it even smoother.

This provides a smooth rotational motion.

L6 ¥115,000

### Dummy crank center boring for racing

Conventional cylinder boring involves centering (positioning) from a normal bore.

This is usually caused by the use of a dummy head.

Although the distortion can be corrected, the variation in bore position that occurred during manufacturing by the manufacturer.

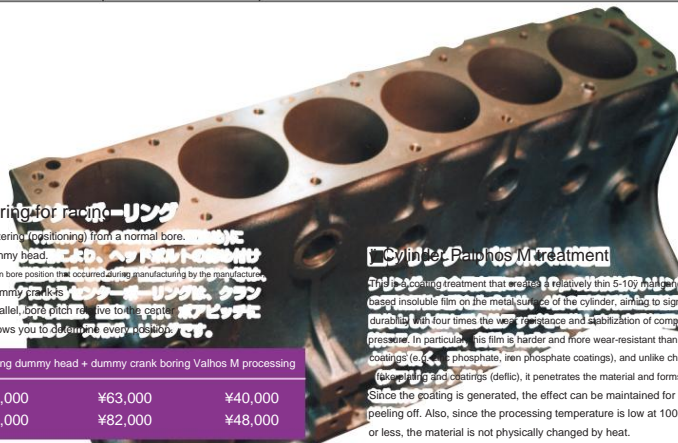
It cannot be fixed. Center boring with a dummy crank.

Cylinder bore center position, vertical, parallel, bore pitch relative to the caps.

This is the ultimate racing bowling that allows you to clean the even + 0.0001mm.

STD boring dummy head boring dummy head + dummy crank boring Valhos M processing

*In-line 4	¥34,000	¥42,000	¥63,000	¥40,000
*Straight 6	¥49,000	¥61,000	¥82,000	¥48,000



### Cylinder Pinholes M treatment

This is a special treatment that creates a relatively thin 5-10μm phospho-phosphate-based insoluble film on the metal surface of the cylinder, aiming to significantly increase durability with four times the wear resistance and stabilization of compression pressure. In particular, this film is harder and more wear-resistant than various chemical coatings (e.g., phosphate, iron phosphate coatings), and unlike chemical coatings such as (aluminum and castings (deficit), it penetrates the material and forms a uniform, even film on the surface. Since the coating is generated, the effect can be maintained for a long time without peeling off. Also, since the processing temperature is low at 100 degrees Celsius or less, the material is not physically changed by heat.

Cylinder block processing	unit	4-cylinder price	6-cylinder price	remarks
Cylinder boring	One	34,000	49,000	Optimal piston clearance and high-precision honing finish according to the intended use.
Dummy head use surcharge	One	8,000	12,000	By using a dummy head, the tightening distortion of the head bolt can be canceled.
L-type dummy crank center boring	One	55,000	70,000	The crank center and bore pitch can be corrected by centering from a dummy crank.
Cylinder block top surface minimum grinding	One	17,000	19,000	Repaired scratches and corrosion on the top surface of the block (to prevent head gasket from coming loose).
Cylinder block bottom surface minimum grinding	One	17,000	19,000	Fixed the step caused by line boring.
Sleeve insertion boring (sleeve manufacturing)	One	132,000	198,000	For repairing holes etc., the top surface needs to be ground.
Sleeve insert boring (sleeve production)	1 location	35,000	35,000	γ
Cylinder Palphos M treatment	One	40,000	48,000	A 5 to 10μm hard film is applied to the metal surface, improving wear resistance by four times.
L-type crank cap bolt O/S processing	One	35,000	45,000	M12 chrome-moly bolts included/tightening torque 10k. Line boring required!
L-type crank housing line boring	One	50,000	70,000	Crank housing modification. (affects friction loss and metal durability)
Metal knock groove processing	1 location	3,800	3,800	Re-cutting the knock groove when using metal from another model.
L-type block water pressure testing	One	20,000	20,000	Check for cracks and pinholes using water pressure of about 3K to 5K to check for leaks.
L-head bolt thread reinforcement	One	33,600	47,000	The damaged head bolt holes were repaired by inserting helical inserts.
L-shaped chain guide O/S processing (M6 to M8)	1 location	3,300	3,300	The chain guide is secured in place by increasing the size of the mounting bolts. (Bolts not included)
Oil clearance measurement (metal alignment)	One	23,000	30,000	Measure your housing and crank size and select the best metal size!
L-shaped oil strainer processing (FyR)	One		35,000	Block processing when using a Skyline engine in a Fairlady Z.
L-shaped oil strainer processing (RyF)	One		25,000	Block processing when using a Fairlady Z engine in a Skyline.
Cylinder Honing	1 location	5,000	5,000	Fine-tuning the clearance when replacing pistons of the same size.

\*Please contact us for the setting of dummy head and dummy crank. Prices for V-type and horizontally opposed engines are different, so please contact us.