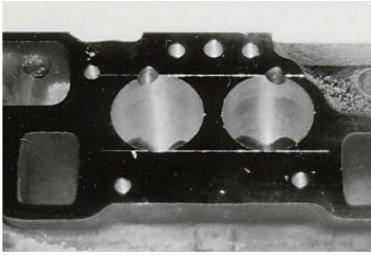


γ L-shaped intake port machining



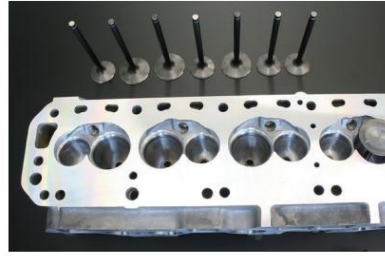
The ideal shape cutter perfected through years of experience is used to cut the area around the valve guide. The enlarged machining is performed with R finishing. The pitch, height, and diameter of each port can be manually engraved by program. This allows for a high-precision finish that would naturally be impossible to achieve. (Manual work is required from the throat area to the seat ring.)

γ L-type combustion chamber argon welding



The biggest drawback of argon welding is thermal distortion. Install the head in the cylinder block in the opposite direction. By bending and tightening it, distortion is minimized. This reduces the distortion and improves the perfection of the head.

γCam center race seat cut



Unlike normal seat cuts, the reference point for protruding is the camshaft, not the spring seat surface. High-precision seat cutting based on the center (top of head for L-type). Valve stem height is by aligning it in a straight line with the camshaft, the combustion chamber volume and the lever ratio and valve ratio of the L type are. It also reduces the variation in the quality of the product. (Cam center compatible models: L type, FJ20, 2TG, 4AG, RB, SR, 2JZ, etc.)

Cylinder head processing	unit	4 cylinder price	6 cylinder price	remarks
L-type combustion chamber argon welding	One	33,000	38,000	Minimum welding distortion. Seat ring needs to be replaced and top and bottom surfaces ground.
Changed L-shaped combustion chamber shape	One	57,000	80,000	Heart-shaped for efficient combustion!
L-shaped intake port machining	One	22,000	33,000	Inlet diameter 41γ port position can be offset.
Custom valve guide production (2 valves)	One	39,600	59,400	Phosphor bronze or aluminum bronze can be specified.
Valve guide replacement (2 valves)	One	7,200	10,800	Removal only is half price, but an internal reamer is required after replacement!
Valve guide inner diameter reamer (2 valves)	One	4,800	7,200	Measure the stem diameter and use a straight reamer to achieve the best clearance!
Valve guide pilot hole O/S processing	One	25,080	37,620	Required when using O/S guides due to roughness in the guide holes.
L-type valve S/P seat base polishing	One	22,000	28,800	Fixed variation in S/P seat surface.
Seat ring replacement (2 valves)	One	24,000	36,000 (excluding seat ring).	Materials can be changed depending on the purpose of use.
Race seat cut (2 valve)	One	21,600	32,400	Shape and stem length can be freely specified.
Valve face correction polishing (2 valves)	One	6,400	9,600	If you reuse a used valve, the face must be modified.
Valve grinding (2 valves)	One	5,200	7,800	Improves initial fit compared to fine compound and flapper.
Valve stem end cut, cotter groove processing, and hardening	One	2,700	2,700	The stem end of a long valve is machined to the specified dimensions.
Valve head lightweight processing	One	4,000	4,000	Face polishing may be required.
Small valve diameter & stem end cut & cotter groove processing	One	5,000	5,000	Includes oil hardening of stem end. Face polishing may be required.
Valve stem end modification	One	600	600	Repairs damage such as dents caused by surging, etc.
Lifter hole O/S processing (DOHC/4 valve)	One	72,000	108,000	When using a reused lifter in a worn lifter hole (S20, etc.)
Head surface grinding: 1.0mm or less	One	13,000	15,000 γ	If there is a lot of distortion, it is also necessary to grind the top surface!
Head surface grinding 1.1mm to 2.0mm	One	15,000	17,000 γ	
Head surface grinding 2.1mm to 3.0mm	One	17,000	19,000 γ	
Minimum head scraping surface grinding	One	10,000	11,000	Temporary minimum surface polishing for volume measurement, etc.
Argon welding head surface grinding extra charge	One	5,000	5,000	Surface grinding after argon welding will be charged at the above mentioned surcharge over the regular price.
Volume-specified surface grinding surcharge	One	5,000	5,000	The surface is ground while measuring the volume to achieve the specified head volume.
L-type cam holder mounting screw part reinforced with helical insert	All locations	20,000	24,000	By inserting a helical insert into a damaged bolt hole, torque can be reliably controlled.
Bolt hole helical insert processing (M6, M8)	1 location	4,000 and up	4,000 and up	Repairs for cases such as broken bolts and damaged screw holes.
L-type head water pressure test	One	15,000	17,000	It is possible to check for the presence or absence of pinholes after port polishing.
Spark plug hole thread repair	1 location	6,500γ	6,500 and up	Damaged head threads are repaired using a helicosert.



γPiston valve recess processing

When high cams or big valves are installed, the valves and pistons. This is done to eliminate interference from the tons. Recess diameter and depth can be adjusted according to engine specifications and driving purpose. We can advise on dimensional relationships. In addition, a cutter with a 1R angle was used to remove stress from the piston crown surface. Considering the concentration of over-revving and knocking. Also pay attention to piston cracks caused by the piston.



γ Full flow connecting rod bushing

Full flow piston pin for press-fit connecting rod. This is a process to change the small end to a phosphorus blue type. Copper bush is pressed in to the pin diameter 10/1000γ. With 12/1000 oil clearance, there is no rattle. It has a precision finish with minimal friction. It is also possible to change the center distance by offsetting the. However, because the thickness of the bush is increased. The balance between the remaining thickness and the bush thickness is important. It will depend on the purpose of use, so please consult us.

Piston and connecting rod processing	unit	4-cylinder price	6-cylinder price	remarks
Piston round polishing	One	11,000	16,500	You can freely specify the amount of polishing.
Piston valve recess processing (2 valves)	One	18,000	27,000	Position, diameter, and depth can be freely specified.
Piston pin lightweight processing	One	3,600	3,600	Taper machining on the inside of the piston pin.
Piston ring groove width processing	One	3,000	3,000	Groove machining is done when using rings of different widths.
Piston pin shortening + circlip processing	1 piece	4,500	4,500	Press-fit piston now a floating type!
Piston press-fit assembly	One	2,700	2,700	Press-fit type piston and connecting rod assembly.
Piston weight balancing	One	14,000	21,000	Difference between each cylinder is within 0.5g.
Connecting rod bushing with full flow processing core	One	22,000	33,000	Oil hole added, bend inspection and correction included.
Connecting rod bushing with full flow machining eccentricity	One	28,000	42,000 γ	Pilot hole offset (up to 1mm)
Connecting rod bushing with full flow processing and double eccentricity	One	44,000	66,000 γ	Pilot hole + bush inner eccentricity
Connecting rod big end lightweight machining	One	20,000	30,000	The lightweight rotating parts reduce crank vibration and enable higher rotations.
Connecting rod small end side grinding	One	12,000	18,000	When the clearance between the piston inner width and the small end width is narrow.
Connecting rod lightweight balancing	One	40,000	60,000	Upper and lower one body balance (each cylinder difference within 0.5g)