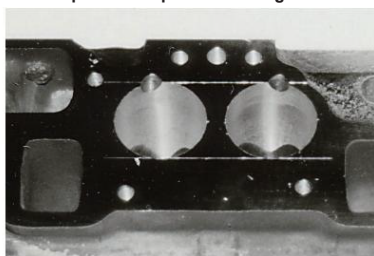


L-shaped intake port machining



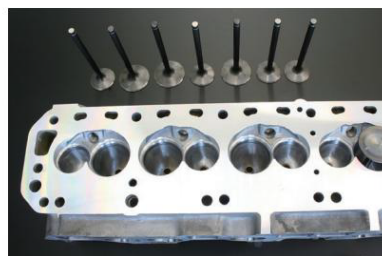
The ideal shape cutter perfected through years of experience is used to cut the area around the valve guide. The enlarged machining is performed with R finishing. The pitch, height, and diameter of each port can be manually engraved by program. This allows for a high-precision finish that would naturally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

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.

Cam 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	4cylinder price	6cylinder price	remarks
L-type combustion chamber argon welding	1	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	1	57,000	80,000	Heart-shaped for efficient combustion!
L-shaped intake port machining	1	22,000	33,000	Inlet diameter 41φ port position can be offset.
Custom valve guide production (2 valves)	1	39,600	59,400	Phosphor bronze or aluminum bronze can be specified.
Valve guide replacement (2 valves)	1	7,200	10,800	Removal only is half price, but an internal reamer is required after replacement!
Valve guide inner diameter reamer (2 valves)	1	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	1	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	1	22,000	28,800	Fixed variation in S/P seat surface.
Seat ring replacement (2 valves)	1	24,000	36,000	(excluding seat ring). Materials can be changed depending on the purpose of use.
Race seat cut (2 valve)	1	21,600	32,400	Shape and stem length can be freely specified.
Valve face correction polishing (2 valves)	1	6,400	9,600	If you reuse a used valve, the face must be modified.
Valve grinding (2 valves)	1	5,200	7,800	Improves initial fit compared to fine compound and flapper.
Valve stem end cut, cotter groove processing, and hardening	1	2,700	2,700	The stem end of a long valve is machined to the specified dimensions.
Valve head lightweight processing	1	4,000	4,000	Face polishing may be required.
Small valve diameter & stem end cut & cotter groove processing	1	5,000	5,000	Includes oil hardening of stem end. Face polishing may be required.
Valve stem end modification	1	600	600	Repairs damage such as dents caused by surging, etc.
Lifter hole O/S processing (DOHC/4 valve)	1	72,000	108,000	When using a reused lifter in a worn lifter hole (S20, etc.)
Head surface grinding: 1.0mm or less	1	13,000	15,000	If there is a lot of distortion, it is also necessary to grind the top surface!
Head surface grinding 1.1mm - 2.0mm	1	15,000	17,000	If there is a lot of distortion, it is also necessary to grind the top surface!
Head surface grinding 2.1mm - 3.0mm	1	17,000	19,000	If there is a lot of distortion, it is also necessary to grind the top surface!
Minimum head scraping surface grinding	1	10,000	11,000	Temporary minimum surface polishing for volume measurement, etc.
Argon welding head surface grinding extra charge	1	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	1	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-	4,000-	Repairs for cases such as broken bolts and damaged screw holes.
L-type head water pressure test	1	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	6,500-	6,500-	Damaged head threads are repaired using a helicosert.

Engine Machining



Piston 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.



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 10/1000-. 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	1	11,000	16,500	You can freely specify the amount of polishing.
Piston valve recess processing (2 valves)	1	18,000	27,000	Position, diameter, and depth can be freely specified.
Piston pin lightweight processing	1	3,600	3,600	Taper machining on the inside of the piston pin.
Piston ring groove width processing	1	3,000	3,000	Groove machining is done when using rings of different widths.
Piston pin shortening + circlip processing	1	4,500	4,500	Press-fit piston now a floating type!
Piston press-fit assembly	1	2,700	2,700	Press-fit type piston and connecting rod assembly.
Piston weight balancing	1	14,000	21,000	Difference between each cylinder is within 0.5g.
Connecting rod bushing with full flow processing core	1	22,000	33,000	Oil hole added, bend inspection and correction included.
Connecting rod bushing with full flow machining eccentricity	1	28,000	42,000	Oil hole added, bend inspection and correction included. Pilot hole offset (up to 1mm)
Connecting rod bushing with full flow processing and double eccentricity	1	44,000	66,000	Oil hole added, bend inspection and correction included. Pilot hole + bush inner eccentricity
Connecting rod big end lightweight machining	1	20,000	30,000	The lightweight rotating parts reduce crank vibration and enable higher rotations.
Connecting rod small end side grinding	1	12,000	18,000	When the clearance between the piston inner width and the small end width is narrow.
Connecting rod lightweight balancing	1	40,000	60,000	Upper and lower one body balance (each cylinder difference within 0.5g)