

Applicable part	Functional classification	Application example
Part which accommodates a particularly wide gap, or a moving part which requires a gap Part which accommodates a wide gap to facilitate assembly Part which requires an appropriate gap even at high temperatures	Part which for functional reasons requires a large gap Expands. Large positional error. Long fitting length Cost needs to be reduced. Manufacturing cost Maintenance cost	Piston ring and piston ring groove Fitting by means of a loose set pin Crank web and pin bearing (side) Exhaust valve box and spring bearing sliding part Piston ring and piston ring groove
Part which accommodates a wide gap, or which requires a wide gap	Regular rotating or sliding part (Must be well lubricated.) Regular fitting part (is often disassembled)	Fitting of exhaust valve seat Main bearing for crankshaft Regular sliding part stripper bolt MSS (e9) Part where a cooled exhaust valve box is inserted Regular shaft and bushing Link device lever and bushing
Part which accommodates a fairly wide gap, or a moving part which requires a gap Fairly wide gap and well lubricated bearing Bearing subjected to high temperature, high speed, and high load (high-degree forced lubrication)	Part requiring precision motion with almost no gap	Link device pin and lever Key and key groove Precision control valve rod Guide lifter pin (g6)
Fitting which provides an appropriate clearance and permits movement (high-quality fitting). Regular normal-temperature bearing lubricated with grease or oil		Fitting of rim and boss Fitting of gears in a precision gear device Dowel pin MSTH (h7)
Continuously rotating part of a precision machine under light load Fitting with a narrow gap and which permits movement (spigot, positioning) High-precision sliding part		Fitting two coupling flanges Governor path and pin Fitting of gear rim and boss
Fitting which allows movement by hand when a lubricant is used (high-quality positioning) Special high-precision sliding part Unimportant stationary part		Fitting of gear pump shaft and casing Reamer bolt
Installation part which is compatible with a very small tightening interference High-precision positioning which locks both parts in place while unit is in use Fitting which can be assembled/disassembled using a wooden or lead hammer Fitting which requires an iron hammer or hand press for assembly/disassembly (A key or other device is required in order to prevent inter-part shaft rotation.) Precision positioning	Difficult to disassemble without damaging the part.	Reamer bolt Dowel pin MSTM (m6) Fastening of hydraulic device pistons and shafts Fitting of coupling flange and shaft
Assembly/disassembly are the same as the above. Precision positioning which permits no gap at all		Fitting of flexible shaft coupling and gear (passive side) Precision fitting Punch SPAS, etc. (m5) Insertion of suction valve and valve guide Die MHD, etc. (m5)
Fitting which requires considerable force for assembly/disassembly Precision stationary fitting (A key or other device is required for high-torque transmission purposes.)	Fitting force alone is insufficient for transmitting force	Insertion of suction valve and valve guide Straight die MSD, etc. (r6) Fixing a gear and shaft together (small torque) Dowel pin MST (p6) Flexible coupling shaft and gear (drive side)
Fitting which requires large force for assembly/disassembly (A key or other device is required for high-torque transmission purposes.) However, only light press-fitting force is required for press-fitting when both parts are non-ferrous parts. Fastened using the standard press-fitting for fastening a ferrous part to a ferrous, bronze, or copper part	Fitting force along is sufficient for transmitting small force	Coupling and shaft
Assembly/disassembly are the same as the above. Shrinkage press fitting, cold press fitting or forced press fitting is required for large parts	Difficult to disassemble without damaging the part.	Fitting and fixing a bearing bushing
Permanent assembly in which parts are both tightly fastened together and will not be disassembled, and which requires shrinkage press fitting, cold press fitting, or forced press fitting. For light alloys, only ordinary press fitting is required.	Fitting force is capable of transmitting considerable force	Insertion of suction valve and valve seat Fixing a coupling flange and shaft together (large torque) Fixing a drive gear rim and boss together Fitting and fixing a bearing bushing

⚠ The items printed in red in the Application example are press die parts presented in this catalogue.

1.1 Fitting with regularly used hole adopted as reference

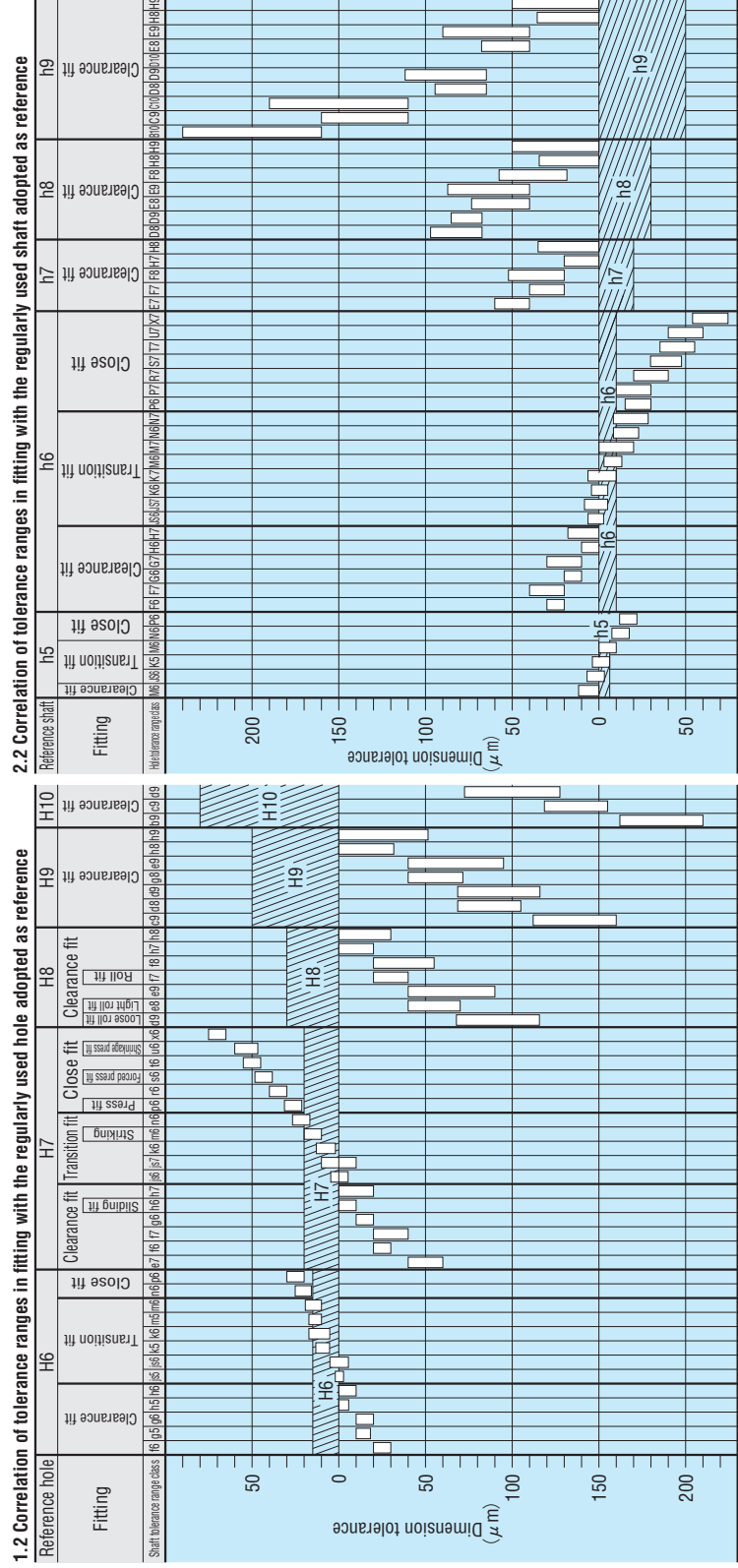
Reference hole	Shaft tolerance range class		
	Clearance fit	Transition fit	Close fit
H6	f6, g6, h5, js5, k5, m5	js6, js5, k6, m6	p6*
H7	f7, g7, h6, js6, k6, m6	js7, js6, k7, m7	p7*
H8	f8, g8, h7, js7, k7, m7	js8, js7, k8, m8	p8*
H9	f9, g9, h8, js8, k8, m8	js9, js8, k9, m9	p9*
H10	f10, g10, h9, js9, k9, m9	js10, js9, k10, m10	p10*

1.2 Fitting with regularly used shaft adopted as reference

Reference shaft	Hole tolerance range class		
	Clearance fit	Transition fit	Close fit
h5	F6, G6, H6, JS6, K6, M6	N6, P6*	P6*
h6	F7, G7, H7, JS7, K7, M7	N7, P7*	P7*
h7	F8, G8, H8, JS8, K8, M8	N8, P8*	P8*
h8	F9, G9, H9, JS9, K9, M9	N9, P9*	P9*
h9	F10, G10, H10, JS10, K10, M10	N10, P10*	P10*

Note: * Exceptions for these fittings may arise depending on the dimensional sectioning scheme.

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* Cases in which the measurement exceeds the reference dimension in the above table (18mm) but does not exceed 30mm.

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