



3114, 3116 & 3126 Piston Clearance

MAY 2021

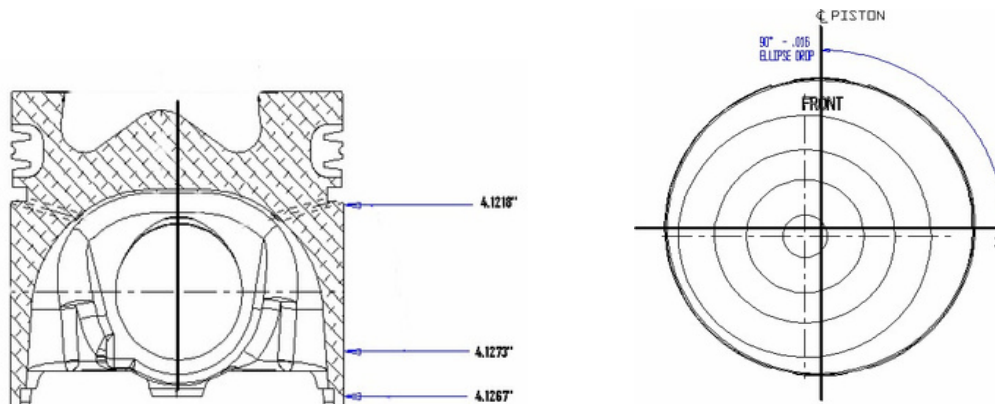
IPDTB-0010

Piston clearance between the piston and cylinder wall on a 3114, 3116 or 3126 engines is a question commonly asked. Most commonly the question is “what is the diameter of your piston”? This is so the technician can calculate the clearance by subtracting the piston diameter from the bore size to get the amount of clearance the piston will have. While this seems to be a straightforward question, the answer is not that simple. Pistons used in today’s heavy-duty engine are elliptical, and not truly round.

The ellipse of the piston is by design to allow for additional thermal expansion in the heavier areas on the piston.

These elliptical designs make it much harder to determine the clearance since the measurement depends on the location where it is measured on the piston.

In the examples below you can see that the dimensions vary depending on the distance up from the bottom of the skirt, as well as in rotation compared to the pin bore. Directly at the pin bore the piston measures 0.016” smaller than at 90° on “X” axis. This forms the elliptical profile around the circumference of the piston and a barrel profile from top to bottom of the piston skirt.



(Dimensions & scale shown are reference only for this example and are not actual)

Piston technology and manufacturing techniques have become considerably more sophisticated in advanced engines. IPD prides itself in producing state of the art pistons, and if the cylinder bore is correct you can install them with confidence.

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All information is believed to be accurate at time of printing. No guarantee of accuracy is made by IPD llc. Please consult your service and parts manual for detailed information. This is intended as a warning only, not a specification.

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oversize. Often a block can be bored oversized much more economically than being sleeved back to standard. Finish bore specifications for these engines are:

| ENGINE MODEL | STANDARD BORE SIZE | .50MM O/S BORE |
|--------------|---------------------|---------------------|
| 3114/ 3116 | 105.025 +/- 0.025mm | 105.525 +/- 0.025mm |
| | 4.1348 +/- 0.001" | 4.1545 +/- 0.001" |
| 3126 | 110.025 +/- 0.025mm | 110.525 +/- 0.025mm |
| | 4.3317 +/- 0.001" | 4.3513 +/- 0.001" |

IPD currently offers the following piston kits for these engines. Kits indicated with a "B" suffix are .50mm oversized. *Please check availability before boring your block!*

| 3114 & 3116 | | 3126 | |
|-------------|---------------------|-------------|-------------------|
| Item Number | Item Description | Item Number | Item Description |
| PK1014495 | PISTON KIT PISTON | PK1334983 | PISTON KIT, STD |
| PK1014495B | KIT, .50MM PISTON | PK1334983 | PISTON KIT, .50MM |
| PK1051710 | KIT, STD | B | PISTON KIT, STD |
| PK1051720 | PISTON KIT, STD | PK1335044 | PISTON KIT, .50MM |
| PK1051720B | PISTON KIT, .50MM | PK1335044 | PISTON KIT, STD |
| PK1077545 | PISTON KIT | B | PISTON KIT, STD |
| PK1077545B | PISTON KIT, .50MM | PK1646556 | PISTON KIT, STD |
| PK1077553 | PISTON KIT | PK1723282 | PISTON KIT, .50MM |
| PK1077553B | PISTON KIT, .50MM | PK2382729 | PISTON KIT, STD |
| PK1077563 | PISTON KIT, STD | PK2382729 | PISTON KIT, .50MM |
| PK1077563B | PISTON KIT, .50MM | B | |
| PK1154124 | PISTON KIT PISTON | PK3938988 | |
| PK1154124B | KIT, .50MM PISTON | PK3938988 | |
| PK4P2990 | KIT PISTON KIT | B | |
| PK6I1144 | PISTON KIT, .50MM | | |
| PK6I1144B | PISTON KIT PISTON | | |
| PK6I1210 | KIT, .50MM PISTON | | |
| PK6I1210B | KIT, STD PISTON | | |
| PK6I4248/1 | KIT, STD PISTON KIT | | |
| 3 | PISTON KIT, .50MM | | |
| PK6I4248/1 | PISTON KIT PISTON | | |
| 4 PK7C5668 | KIT | | |
| PK7C5668B | | | |
| PK7E3428 | | | |
| PK9Y7452 | | | |

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