



IPD TECH BULLETIN

3114, 3116 & 3126 Piston Clearance

MAY 2021

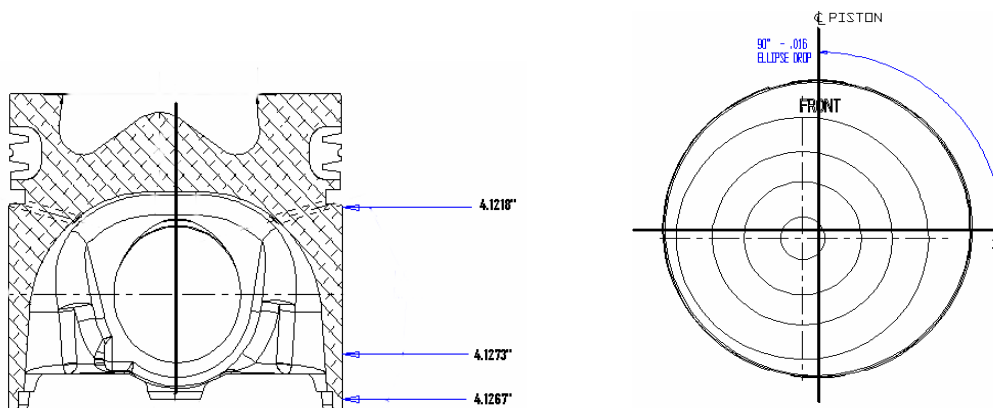
IPDTB-0010

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.

IPD
Torrance CA USA 90501
www.ipdparts.com

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.

All manufacturers’ names, numbers, symbols and descriptions are for reference only. It is not implied that any part is the product of the manufacturer. Caterpillar ® and Cat® are registered trademarks of Caterpillar, Inc

IPD produces many of the 3114, 3116 & 3126 pistons in both standard and .50MM 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	PK1334983	PISTON KIT, STD
PK1014495B	PISTON KIT, .50MM	PK1334983B	PISTON KIT, .50MM
PK1051710	PISTON KIT, STD	PK1335044	PISTON KIT, STD
PK1051720	PISTON KIT, STD	PK1335044B	PISTON KIT, .50MM
PK1051720B	PISTON KIT, .50MM	PK1646556	PISTON KIT, STD
PK1077545	PISTON KIT	PK1723282	PISTON KIT, STD
PK1077545B	PISTON KIT, .50MM	PK2382729	PISTON KIT, STD
PK1077553	PISTON KIT	PK2382729B	PISTON KIT, .50MM
PK1077553B	PISTON KIT, .50MM	PK3938988	PISTON KIT, STD
PK1077563	PISTON KIT, STD	PK3938988B	PISTON KIT, .50MM
PK1077563B	PISTON KIT, .50MM		
PK1154124	PISTON KIT		
PK1154124B	PISTON KIT, .50MM		
PK4P2990	PISTON KIT		
PK6I1144	PISTON KIT		
PK6I1144B	PISTON KIT, .50MM		
PK6I1210	PISTON KIT		
PK6I1210B	PISTON KIT, .50MM		
PK6I4248/13	PISTON KIT, STD		
PK6I4248/14	PISTON KIT, STD		
PK7C5668	PISTON KIT		
PK7C5668B	PISTON KIT, .50MM		
PK7E3428	PISTON KIT		
PK9Y7452	PISTON KIT		

IPD

Torrance CA USA 90501

www.ipdparts.com

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.

All manufacturers' names, numbers, symbols and descriptions are for reference only. It is not implied that any part is the product of the manufacturer. Caterpillar ® and Cat® are registered trademarks of Caterpillar, Inc