



## Installation Instructions for KPMI Part No: 30-33350

Honda • CRF 450R • 2007- '08

### Cylinder Head Service Kit

This kit is verified for the model year range listed above. Certain components in this kit may have larger coverage and are labeled accordingly. When installing KPMI Cylinder Head Service Kits it is important to maintain these highly stressed components in accordance with factory service limits. Always consult with qualified professionals suited to inspect your machine.

#### A) 30-33350 Kit Includes

Note: (Intake and Exhaust parts are **NOT** interchangeable)

| KPMI P/N | QTY    | Description                   | Specification  |
|----------|--------|-------------------------------|--|
| 30-30640 | 1 Set  | Spring Kit                    | Includes: Ti Retainers, CrSi Valve Springs, H.T. Steel Basewashers   |
| 30-30220 | 2 Pcs. | Intake, Standard Valve        | Valve • Black Diamond™ • Black Nitroreg Stems  |
| 30-30225 | 2 Pcs. | Exhaust, Standard Valve       | Valve • Black Diamond™ • Black Nitroreg Stems  |
| 30-30200 | 2 Pcs. | Intake, Standard Valve Guide  | Valve Guide • Mng. Brz. Bronze   |
| 30-30210 | 2 Pcs. | Exhaust, Standard Valve Guide | Valve Guide • Mng. Brz. Bronze   |
| 30-33351 | 1 Set  | Gasket Kit                    | Includes: 96 mm Head Gasket (1), Base Gasket (1), Exhaust Gasket (1), Cam Chain Tensioner Gasket (1), Cam Chain Tensioner O-ring (1), Exhaust Valve Seals (2), Intake Valve Seals (2), Water Pipe O-ring (1), Cam Chain Tensioner O-Ring (1) |

\*The Exhaust springs for this kit include a progressively wound Inner Spring, which should be installed with the tightly wound end seated on the HT Steel Basewashers.

#### B) Recommended Installed Height - Intake

1. Installed Height ..... **1.210" - 1.220"**
2. Seat Pressure ..... **40 #**
3. Open Pressure at .375 lift ..... **131 #**
4. Open Pressure at .440 lift ..... **147 #**
5. Max Valve Lift ..... **0.440"**

#### Recommended Installed Height - Exhaust

1. Installed Height ..... **1.360" - 1.370"**
2. Seat Pressure ..... **70 #**
3. Open Pressure at .375 lift ..... **183 #**
4. Open Pressure at .440 lift ..... **203 #**
5. Max Valve Lift ..... **0.440"**

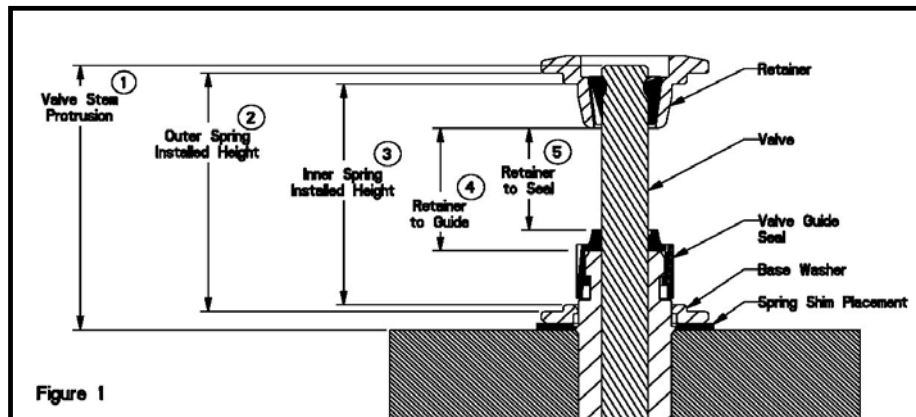
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# TECH TIPS

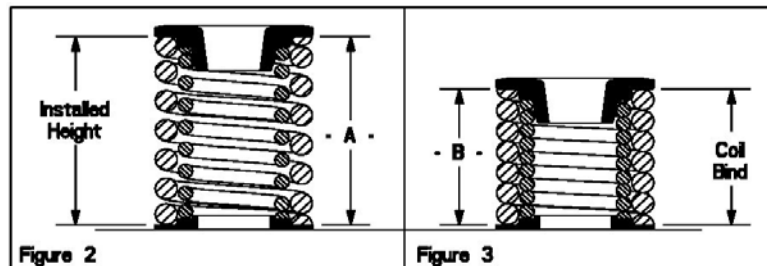
## C) Notes

1. The difference between the installed height and the coil bind height is considered “Free-Travel”  
*The coil bind height is determined by compressing the spring or springs with the retainer and basewasher in place, a vice can be used for this operation, once springs are compressed measure the distance between the retainer and basewasher where the outer spring contacts them.*
2. Free-travel should always be gross valve lift +.060” for safe operation.
3. Retainer to seal and retainer to guide clearance should also be gross valve lift +.060” for safe operation.
4. Failure to check valve train clearances can result in serious damage to an engine



## Valve Train Terminology

1. Stem Protrusion is measured from the tip of the valve stem to the cylinder head. See Figure 1.
2. Outer spring installed height is measured where the outer spring contacts the retainer and lower component when assembled. See Figure 1.
3. Inner spring installed height is measured where the inner spring contacts the retainer and lower component when assembled. See Figure 1.
4. Retainer to guide clearance is the distance between the valve guide (w/o the seal) and the bottom of the retainer, with the valve in the closed position. See Figure 1 and Notes 3 & 4.
5. Retainer to seal clearance is the distance between the valve stem seal and the bottom of the retainer, with the valve in the closed position. See Figure 1 and Notes 3 & 4.



## Installed Height

1. In Figure 2 the installed height is measured from where the outer spring contacts the retainer and the basewasher. This measurement is taken when the valve, basewasher, retainer, and keepers are assembled in the cylinder head.

## Coil Bind / Solid Height:

1. In Figure 3 the coil bind height is determined by compressing the spring or springs with the retainer and basewasher in place, a vice can be used for this operation, once springs are compressed measure the distance between the retainer and basewasher where the outer spring contacts them.

## Notes:

1. The difference between the installed height and the coil bind height is considered “Free-Travel”
2. Free-travel should always be gross valve lift +.060” for safe operation.
3. Retainer to seal and retainer to guide clearance should also be gross valve lift +.060” for safe operation.
4. Failure to check valve train clearances can result in serious damage to an engine.