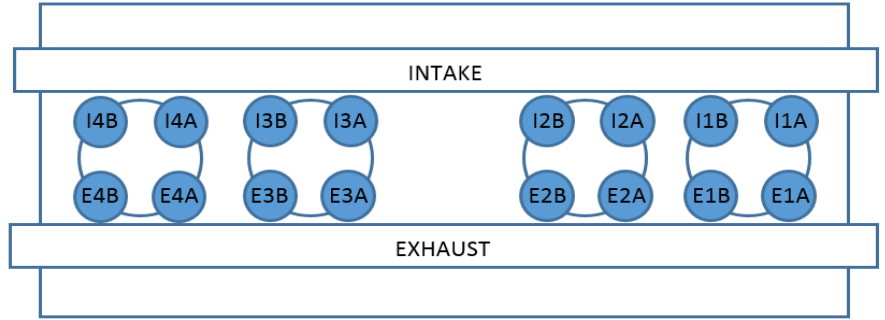


1987 Honda CBR1000F
Engine Rebuild Worksheet
July, 2017

Type: DOHC Inline Four
 Four Valves per Cylinder
 KM's: _____



Cylinder Compression (Pre-Service)

	1	2	3	4
Dry				
Wet				

Cylinder Compression (Post-Service)

	1	2	3	4
Dry				
Wet				

Valve Clearance Specifications

Intake Valve (Cold) 0.10 mm (0.004")
 Acceptable Range: 0.08 - 0.12 mm (0.003 - 0.005")
 Exhaust Valve (Cold) 0.16 mm (0.006")
 Acceptable Range: 0.14 - 0.18 mm (0.005 - 0.007")

Valve Clearance Measurement

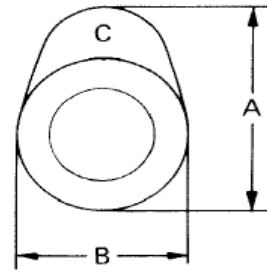
	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B
Clearance (mm)								
	E1A	E1B	E2A	E2B	E3A	E3B	E4A	E4B
Clearance (mm)								

Condition / Notes:

Intake Camshaft Specifications

Lobe Measurement "A" 35.608-35.808 mm (1.4019 - 1.4098")

Lobe Measurement "A" Limit **35.55 mm (1.400")**



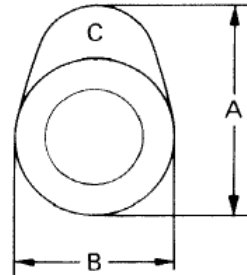
Intake Camshaft Measurements

	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B
Measurement "A"								
Measurement "B"								

Exhaust Camshaft Specifications

Lobe Measurement "A" 35.480 - 35.680 mm (1.3969 - 1.4047")

Lobe Measurement "A" Limit **35.43 mm (1.395")**



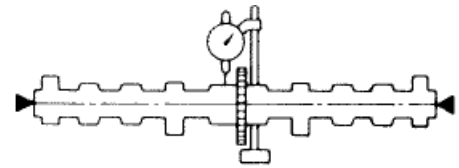
Exhaust Camshaft Measurements

	E1A	E1B	E2A	E2B	E3A	E3B	E4A	E4B
Measurement "A"								
Measurement "B"								

Camshaft Runout

Limit **0.03 mm (0.0012")**

Intake Camshaft	
Exhaust Camshaft	



Camshaft Oil Clearance Specifications

IN 1 & 4, EX 1 & 4 0.020 - 0.074 mm (0.0008 - 0.0029")

IN 1 & 4, EX 1 & 4 Limit **0.12 mm (0.005")**

IN 2 & 3, EX 2 & 3 0.050 - 0.104 mm (0.0020 - 0.0041")

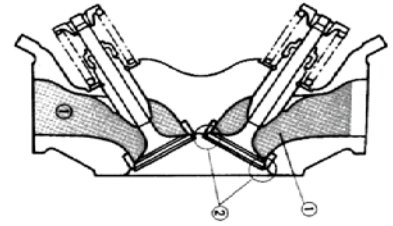
IN 2 & 3, EX 2 & 3 Limit **0.14 mm (0.006")**

Camshaft Oil Clearance Measurements

	1	2	3	4
Intake				
Exhaust				

Valve Sealing Check (Pre-Service)

	Intake	Exhaust
Valve 1A (Pass / Fail)		
Valve 1B (Pass / Fail)		
Valve 2A (Pass / Fail)		
Valve 2B (Pass / Fail)		
Valve 3A (Pass / Fail)		
Valve 3B (Pass / Fail)		
Valve 4A (Pass / Fail)		
Valve 4B (Pass / Fail)		

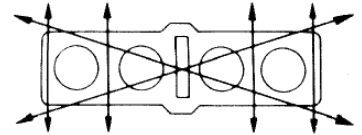


Valve Sealing Check (Post-Service)

	Intake	Exhaust
Valve 1A (Pass / Fail)		
Valve 1B (Pass / Fail)		
Valve 2A (Pass / Fail)		
Valve 2B (Pass / Fail)		
Valve 3A (Pass / Fail)		
Valve 3B (Pass / Fail)		
Valve 4A (Pass / Fail)		
Valve 4B (Pass / Fail)		

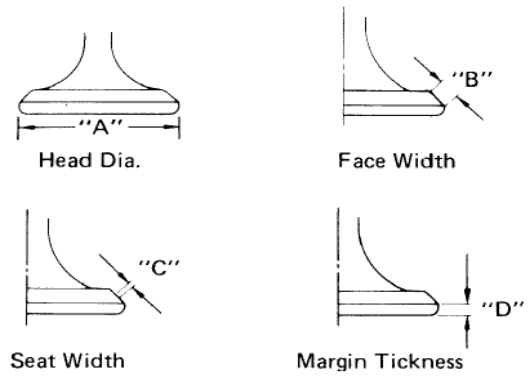
Cylinder Head Warpage

Limit	0.07 mm (0.003")
Actual (Highest Recorded)	
Condition (Pass / Fail)	



Intake Valve Specifications

Head Diameter "A"	
Face Width "B"	
Seat Width "C"	0.9 - 1.1 mm (0.035 - 0.043")
Seat Width "C" Limit, Low	0.9 mm (0.035")
Seat Width "C" Limit, High	1.5 mm (0.06")
Margin Thickness "D"	
Margin Thickness "D" Limit	
Stem Outside Diameter	5.475 - 5.490 mm (0.2156 - 0.2161")
Stem Outside Dia. Limit	5.47 mm (0.215")
Guide Inside Diameter	5.500 - 5.512 mm (0.2165 - 0.2170")
Guide Inside Dia. Limit	5.55 mm (0.219")
Stem to Guide Clearance	0.010 - 0.037 mm (0.0004 - 0.0015")
Stem to Guide Clear. Limit	0.007 mm (0.003")
Stem Runout Limit	0.02 mm (0.0008")

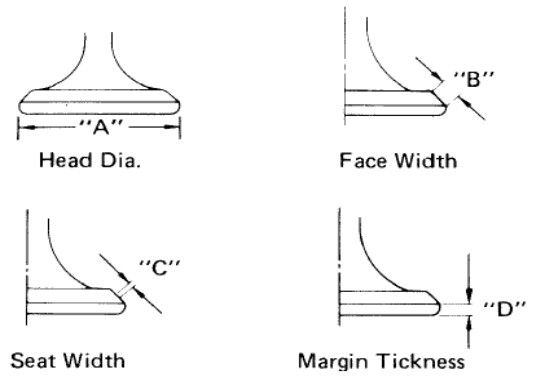


Intake Valve Measurements

	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B
Head Diameter "A"								
Face Width "B"								
Seat Width "C"								
Margin Thickness "D"								
Stem Outside Diameter								
Guide Inside Diameter								
Stem to Guide Clearance								
Stem Runout								

Exhaust Valve Specifications

Head Diameter "A"	
Face Width "B"	
Seat Width "C"	0.9 - 1.1 mm (0.035 - 0.043")
Seat Width "C" Limit, Low	0.9 mm (0.035")
Seat Width "C" Limit, High	1.5 mm (0.06")
Margin Thickness "D"	
Margin Thickness "D" Limit	
Stem Outside Diameter	5.455 - 5.470 mm (0.2148 - 0.2154")
Stem Outside Dia. Limit	5.45 mm (0.2145")
Guide Inside Diameter	5.500 - 5.512 mm (0.2165 - 0.2170")
Guide Inside Dia. Limit	5.55 mm (0.2185")
Stem to Guide Clearance	0.030 - 0.057 (0.0012 - 0.0022")
Stem to Guide Clear. Limit	0.09 mm (0.004")
Stem Runout Limit	0.02 mm (0.0008")

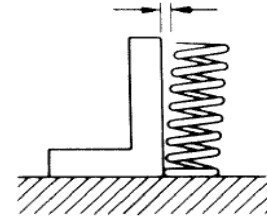


Exhaust Valve Measurements

	E1A	E1B	E2A	E2B	E3A	E3B	E4A	E4B
Head Diameter "A"								
Face Width "B"								
Seat Width "C"								
Margin Thickness "D"								
Stem Outside Diameter								
Guide Inside Diameter								
Stem to Guide Clearance								
Stem Runout								

Valve Spring Specifications

Free Length (IN, EX Outer)	47.08 mm (1.854")
Free Length Service Limit (IN, EX Outer)	45.70 mm (1.800")
Free Length (IN, EX Inner)	43.15 mm (1.699")
Free Length Service Limit (IN, EX Inner)	41.80 mm (1.650")
Compressed Length (IN, EX Outer)	28.6 mm (1.13")
Compressed Length Limit (IN, EX Outer)	28.6 mm (1.13")
Compressed Pressure, Outer	33.50 - 38.50 kg (73.85 - 84.88 lbs)
Compressed Pressure Limit, Outer	32.94 kg (72.62 lbs)
Compressed Length (IN, EX Inner)	25.1 mm (0.99")
Compressed Length Limit (IN, EX Inner)	25.1 mm (0.99")
Compressed Pressure, Inner	15.30 - 17.70 kg (33.73 - 39.02 lbs)
Compressed Pressure Limit, Inner	14.88 kg (32.80 lbs)



Note: Painted section of springs point upwards, toward camshafts

Valve Spring Measurements

	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B
Free Length, Outer								
Compressed Length								
Compressed Pressure (kg)								

	I1A	I1B	I2A	I2B	I3A	I3B	I4A	I4B
Free Length, Inner								
Compressed Length								
Compressed Pressure (kg)								

	E1A	E1B	E2A	E2B	E3A	E3B	E4A	E4B
Free Length, Outer								
Compressed Length								
Compressed Pressure (kg)								

	E1A	E1B	E2A	E2B	E3A	E3B	E4A	E4B
Free Length, Inner								
Compressed Length								
Compressed Pressure (kg)								

Condition / Notes:

Cylinder Specifications

Cylinder Bore (Standard) 77.000 - 77.010 mm (3.0315 - 3.0319")

Cylinder Bore Limit **77.10 mm (3.035)**

Cylinder Taper Limit **0.05 mm (0.002")**

Cylinder Out of Round Limit **0.05 mm (0.002")**

Cylinder Warpage Limit **0.07 mm (0.003")**

Cylinder Warpage

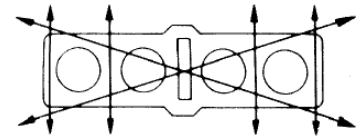
Limit **0.07 mm (0.003")**

Actual (Highest Recorded)

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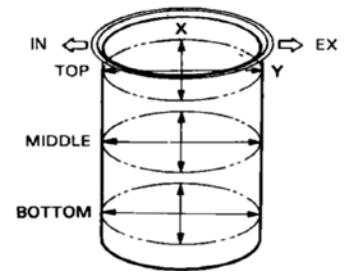
Condition (Pass / Fail)

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Cylinder Bore Measurements

	1	2	3	4
Cylinder Bore (Top X)				
Cylinder Bore (Top Y)				
Cylinder Bore (Mid X)				
Cylinder Bore (Mid Y)				
Cylinder Bore (Bottom X)				
Cylinder Bore (Bottom Y)				



Cylinder Taper Calculation

Subtract the Cylinder Bore Bottom from the Cylinder Bore Top for all four cylinders

Cylinder Taper Service Limit **0.10 mm (0.004")**

	1	2	3	4
Cylinder Taper X				
Cylinder Taper Y				

Cylinder Out-of-Round Calculation

Subtract the Cylinder Bore X from the Cylinder Bore Y for all four cylinders

Cylinder Out-of-Round Limit **0.05 mm (0.002")**

	1	2	3	4
Top				
Middle				
Bottom				

Piston Specifications

Piston O.D.	76.960 - 76.990 mm (3.0299-3.0311")
Piston O.D. Limit	76.86 mm (3.026")
Piston Pin Hole Bore	20.002-20.008 mm (0.7875-0.7877")
Piston Pin Bore Limit	20.06 mm (0.790")
Piston Pin O.D.	19.994-20.000 mm (0.7872-0.7874")
Piston Pin O.D. Limit	19.98 mm (0.787")

Piston Measurements

	1	2	3	4
Piston O.D.				
Piston Pin Hole Bore				
Piston Pin O.D.				

Piston Pin-to-Piston Clearance Calculation

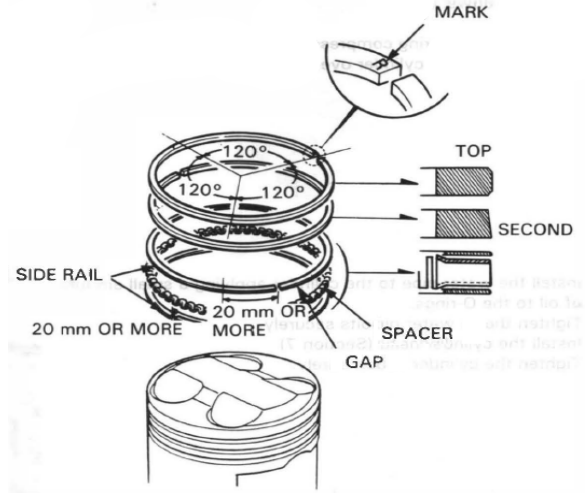
Subtract the Piston Pin O.D. from the Piston Pin Hole Bore for all four cylinders

Piston Pin-to-Piston Clearance Limit **0.04 mm (0.0016")**

	1	2	3	4
Piston Pin-to-Piston Clearance				

Piston Ring Specifications

Piston Ring End Gap Limit (Top)	0.65 mm (0.026")
Piston Ring End Gap Limit (Second)	0.65 mm (0.026")
Piston Ring End Gap Limit (Oil Side Rail)	1.10 mm (0.043")
Piston Ring-to-Groove Clearance Limit	0.10 mm (0.004")



Piston Ring End Gap Measurements

	1	2	3	4
Piston Ring End Gap (Top)				
Piston Ring End Gap (Second)				
Piston Ring End Gap (Oil Side Rail)				

Piston Ring-to-Groove Clearance Measurement

	1	2	3	4
Top Ring				
Second Ring				

Con Rod Small End Specifications

Con Rod Small End I.D. 20.016 - 20.034 mm (0.7880 - 0.7887")

Con Rod Small End I.D. Limit **20.08 mm (0.791")**

Con Rod Small-End Measurements

	1	2	3	4
Con Rod Small End I.D.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Con Rod-to-Piston Clearance Calculation

Subtract the Piston Pin O.D. from the Con Rod Small-End Measurements for all four cylinders

Piston Pin-to-Con Rod Clearance Limit **0.06 mm (0.002")**

	1	2	3	4
Piston Pin-to-Con Rod Clearance	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Con Rod Big End Side Clearance Specifications

Con Rod Big-End Side Clearance 0.05 - 0.25 mm (0.002 - 0.010")

Con Rod Big-End Side Clearance Limit **0.3 mm (0.01")**

Con Rod Big End Side Clearance Measurement

	1	2	3	4
Con Rod Big-End Side Clearance	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Con Rod Weight Code

	1	2	3	4
Con Rod Weight Code*	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

*Marked on Con Rod Big End. Will be a letter from A-E

Crankpin Oil Clearance Specifications

Crankpin Oil Clearance 0.028-0.052 mm (0.0011 -0.0020")

Crankpin Oil Clearance Limit **0.08 mm (0.003")**

Crankpin Oil Clearance Measurement

	1	2	3	4
Crankpin Oil Clearance	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Main Journal Oil Clearance Specifications

Main Journal Oil Clearance 0.021-0.045 mm (0.0008-0.0018")

Main Journal Oil Clearance Limit **0.08 mm (0.003")**

Main Journal Oil Clearance Measurement

	1	2	3	4
Main Journal Oil Clearance	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Crankshaft Runout

Limit **0.03 mm (0.0012")**
 Measured

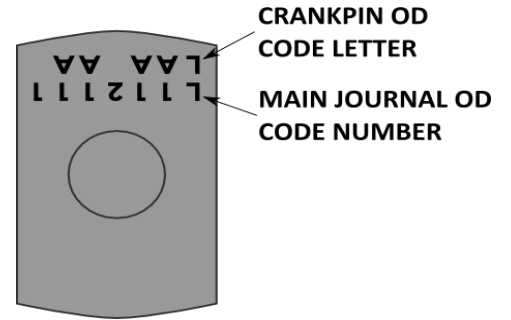
Crankpin Bearing Selection

Con Rod I.D. Code Number* 1 2 3 4

*Marked on con rod big end. Will either be 1 or 2

Crankpin O.D. Code* 1 2 3 4

* Marked on crankshaft weight. Will either be A or B



Crankpin Bearing Selection Table

			Crankpin O.D. Code Letter	
			A	B
			39.995 - 40.003 mm (1.57460 - 1.57492")	39.987 - 39.994 mm (1.57429 - 1.57456")
Connecting Rod I.D. Code Number	1	43.000 - 43.007 mm (1.69291 - 1.69318")	YELLOW	GREEN
	2	43.008 - 43.015 mm (1.69322 - 1.69354")	GREEN	BROWN

Crankpin Bearing Insert Thickness Specifications

Brown 1.492 - 1.496 mm (0.05874 - 0.05890")
 Green 1.488 - 1.491 mm (0.05858 - 0.05870")
 Yellow 1.484 - 1.487 mm (0.05843 - 0.05854")

Crankpin Bearing Color Codes

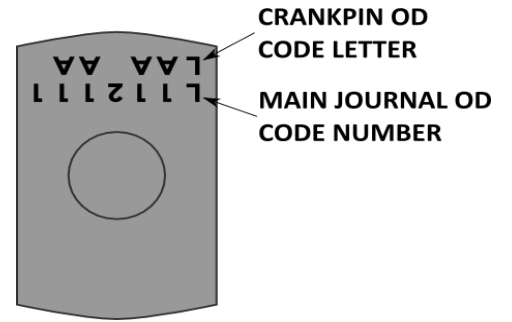
Crankpin Bearing Color Codes 1 2 3 4

Crankpin Visual Inspection / Notes:

Main Bearing Selection

Crankcase I.D. Code Letter*

1	2	3	4



*Marked on upper crankcase. Will be a letter from A-C

Main Journal O.D. Code Number*

1	2	3	4	5	6

* Marked on crankshaft weight. Will be a number from 1-2

Main Bearing Selection Table

		Crankcase I.D. Code Letter		
		A	B	C
		39.000 - 39.007 mm (1.5354 - 1.5357")	39.008 - 39.015 mm (1.53574 - 1.53602")	39.016 - 39.024 mm (1.53606 - 1.53638")
Crankshaft O.D. Code 1	35.984 - 35.991 mm (1.41669 - 1.41697")	PINK	YELLOW	GREEN
Crankshaft O.D. Code 2	35.992 - 36.000 mm (1.41700 - 1.41732")	YELLOW	GREEN	BROWN

Main Bearing Insert Thickness Specifications

Brown	1.508 - 1.512 mm (0.05937 - 0.05953")
Green	1.504 - 1.507 mm (0.05921 - 0.05933")
Yellow	1.500 - 1.503 mm (0.05906 - 0.05917")
Pink	1.496 - 1.499 mm (0.05890 - 0.05902")

Main Bearing Visual Inspection / Notes:

Condition / Notes:
