

## Table of Contents

<b>MiscRes: Magazine Articles</b> .....	3
<b>"Total Power Package", A Complete 883/1200 Sportster Hop-Up Kit</b> .....	3



[Go To Technical Menu](#)

# MiscRes: Magazine Articles

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This article is an excerpt from Hot XL Magazine, Autumn 1997 Edition: <sup>1)</sup>

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## "Total Power Package", A Complete 883/1200 Sportster Hop-Up Kit

## TECH

## TECH &amp; HOW-TO

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# Edelbrock's TOTAL POWER PACKAGE

## A Complete 883/1200 Sportster Hop-Up Kit

Text and photos by R.T.Lindquist

**S**ome of us who desire to boost the power levels of our machines would like to get it all in one balanced kit rather than getting a carb, camshafts, 1200cc kit, etc., hoping it will all work together. If the idea of a kit is appealing to you, you should check out Edelbrock's Total Power Package. This kit includes a set of 1200 Edelbrock Performer RPM heads, a QwikSilver carburetor, a set of Edelbrock/JE Sportsman 10.5:1 pistons, Edelbrock Performer RPM 1200 3-piece manifold, and Edelbrock Performer RPM

camshafts. This package is designed to provide outstanding torque and horsepower throughout the power band. Here's a brief description of each component that's included in the Edelbrock Total Power Package.

The kit's camshaft set was designed to enhance the overall performance characteristic of the Evolution Sportster engine. The camshafts' specifications are as follows: total valve lift is .590; duration is 240 for the intake and 248 for the exhaust; TDC is .192 intake and .166

exhaust. The intake cams open at 22 degrees and close at 46 degrees, taken at .053. The exhaust cams open at 42 degrees and close at 18 degrees, taken at .053.

Edelbrock's Performer RPM 1200 3-piece intake manifold was designed for high performance street use with Edelbrock's Performer RPM 1200 heads only. This manifold is for grommet-style carbs like the QwikSilver. (A flange mount intake manifold is also available from Edelbrock.) These intake manifolds are



Here are the goodies we'll install on our test bike. The Edelbrock kit consists of a set of 1200 Edelbrock heads, camshafts, and Edelbrock/JE Sportsman 10.5:1 pistons, and a QwikSilver carb complete with air cleaner. We'll also be installing a set of CCE finned rocker box tops and timing cover.



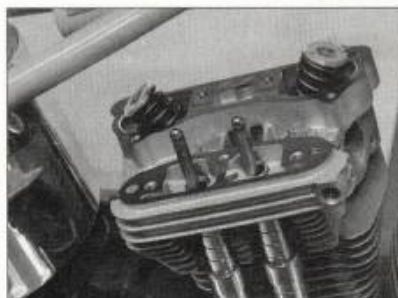
**2** Remove the rocker box's top and middle sections on the front and rear cylinders. Use a straight edge and check the gasket surfaces for flatness. A flat surface means no oil leaks.



**4** Remove the stock pushrods from their tubes. Then remove the capture plates from the engine case so you can remove the pushrod tubes.



**1** To start, remove the stock air cleaner. Then drain and remove the carburetor. Remove the intake manifold, too. You'll be replacing these with new Edelbrock components.



**3** Remove both lower rocker box assemblies. Remove the rocker arms with their shafts left in place. Use a straight edge and check these gasket surfaces for flatness, too.



**5** Remove both the front and rear cylinder head assemblies by loosening the head bolts in an even crisscross pattern. Set them aside with the other stock parts that will not be reinstalled later on.

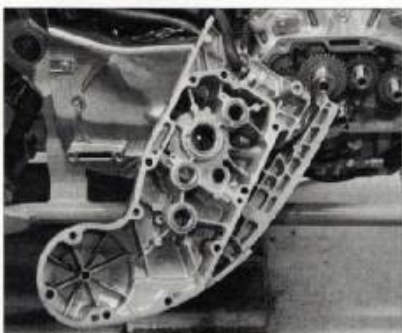




**6** Remove the timing cover and gasket. Make a reference mark on the inside of the cam cover so you can reinstall the ignition timing plate in exactly the same spot. Then remove all the ignition components from the cam cover. You can leave the ignition plate hanging by its wire.



**7** In a crisscross pattern, loosen and remove all the cam cover screws. Gently tap the cam cover with a rubber mallet to break the seal. Then carefully lift the back side of the cam cover at the locating dowel pins and remove the cam cover. Be careful not to disrupt the position and location of the camshafts.



**8** Let the cam cover stay connected to the oil line and ignition wire but support the cover so these are not pulled. Remove the old cam cover gasket from the engine and cam cover.



**9** Shift the transmission into its highest gear and slowly rotate the engine over until the timing marks on the cams and pinion gear are aligned (check the service manual).



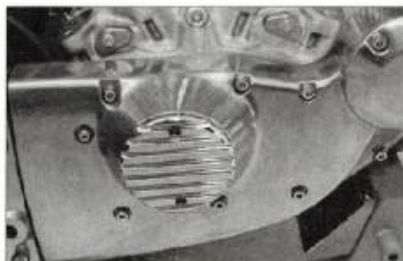
**10** Now carefully remove the old camshafts from the engine. Inspect the tappet rollers for pitting and wear. Replace if necessary. Thoroughly clean the area and lubricate the camshaft bearing ends and bushings.



**11** Install the new Edelbrock camshafts in the proper location with their timing marks aligned like the old cams were as per the service manual.



**12** After installing a new gasket, gently reinstall the cam cover. Then install the mounting screws and snug them down in a crisscross pattern. Torque the screws down to 120 in-lb to finish up. Check the end play of all four camshafts before proceeding to the next step. If they are outside of limits, install the correct shims and repeat this step.



**13** If you scribed a mark in the timing cavity, there's no need to retune the engine. Just line up the marks and snug the standoffs down. Then reinstall timing cover. If not, you must retune the engine after it is fully assembled.



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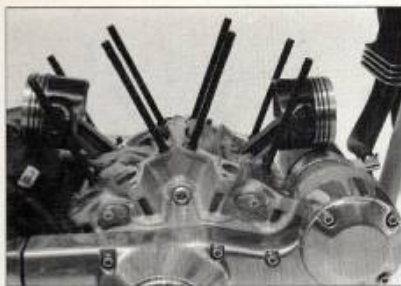
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**14** Next, remove the stock cylinders and send them to be bored out and fitted with the new 1200cc Edelbrock/JE Sportsman 10.5:1 pistons. Be sure to place clean rags into the case holes as you remove the cylinders so nothing falls into the lower end.



**15** Remove the old pistons from the connecting rods. Compare the Edelbrock/JE piston on the left with the stock one on the right.



**16** Install the new JE pistons onto the connecting rods. Then install the rings as per the manufacturer's instructions. After installing new gaskets, lightly oil the inside of the cylinders and the outside of the pistons. Then slip the pistons into the freshly bored cylinders using a ring compressor.



**17** Place a few drops of motor oil or anti-seize on the head bolt threads. This will give you a correct torque reading and stop corrosion and oxidation build-up inside the head bolts.



**18** After checking that the cylinder and head mating surfaces are clean, install new Teflon-coated James head gaskets and Viton O-rings. Then position and install the Edelbrock heads. Each head requires two long and two short shouldered 12-point head bolts. Incrementally torque the head bolts to 55 ft-lb.



**19** Tip: place a dab of grease or assembly lube on the tips of the valve stems. This will help prevent galling during the initial start-up.



**20** The clearance around the valve spring in the lower rocker box (where we are pointing with the screwdriver) needs to be checked when installing a higher-than-stock lift cam.



**21** With new gaskets in place, install the lower rocker boxes. First, hand tighten the hardware in a sequential pattern. Then torque them to 120 in-lb. in the same pattern.



**22** Rotate the engine over slowly until the pushrods are at their lowest position. Install new upper and lower pushrod, O-rings and seals. Then adjust the pushrods to their shortest length and put some assembly grease on the ends of the pushrods. Slide the shortened pushrods down through their holes in each head and into the pushrod tube assembly.



**23** While keeping the correct rocker shaft with its rocker arm, generously apply assembly lube or engine oil to the shaft. With the retaining notch rotated to the proper location, slide the rocker shaft into position. Do not force it in.

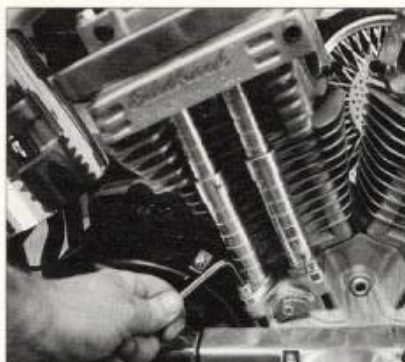


**24** Install and sequentially tighten the hardware to 15-18 ft-lb. Note: check the end play of the rocker arm with a feeler gauge. It should have no less than .005" running clearance.

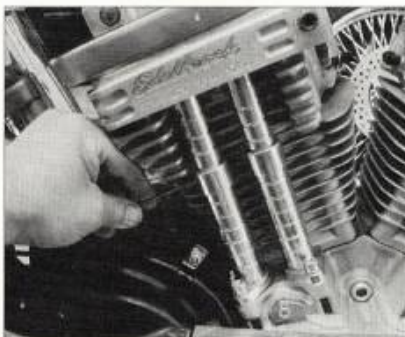


**25** With its cam at its lowest position, adjust each pushrod to zero lash as per the instructions. Then lock down the jam nuts.





**26** Position the lower seal into its retainer. Then secure the lower pushrod tube in the retainer and torque the mounting screw to 15-18 ft-lb.



**27** Slide the upper pushrod tube up until it is fully seated into position. Lock the collars into place.



**28** Place the stock center and new CCE finned upper rocker box into position, making sure the gaskets are properly aligned. Hand tighten the mounting screws and washers in a sequential pattern. Then torque them to 120 in-lb in the same sequential pattern.



**29** Next, install the Edelbrock intake manifold to the head assemblies. Then install the new QwikSilver carb assembly, cables, and air cleaner as per the instructions and you're good to go.

designed to increase power in the stock RPM range (idle to 5500). Edelbrock's manifolds and heads feature a rectangular shaped intake port for increased air flow. Increasing the velocity of incoming air increases the amount of fuel/air mixture the cylinders receive. This in turn increases the power the engine can produce.

The Edelbrock/JE 10.5:1 Sportsman pistons are designed to match the unique design of the 1200 Edelbrock Performer RPM cylinder head combustion chamber. These pistons can only be used with these heads and are for 1200 Sportsters with a 3 1/2" bore. The piston's dome will accommodate up to a 1.850 intake and 1.610 exhaust valve. The wrist pins are manufactured from heat-treated chrome moly bar stock with rifle-drilled bores and precision ground chamfered ends. The top piston rings are plasma moly faced ductile steel for superior durability. The second ring is a reverse twist taper design that reduces ring blow-by. The oil ring is a low tension design that offers excellent oil control.

As for the QwikSilver carburetor, it was designed to enhance the overall performance of your machine. This carb is a smooth bore, gravity fed, single fuel system carburetor with a float operated fuel valve, a variable venturi, and throttle stop screw for idle adjustment. The enricher is a lever or cable operated valve which allows fuel to be drawn directly from the float bowl and delivered behind the slide. The F-series uses a standard 2-bolt flange for mounting while the S-series utilizes the CV-style spigot. The F-series is available in sizes

from 36mm to 42mm and the S-series is available in sizes 36mm through 40mm. Remember, bigger is not always better. Talk with the crew at Edelbrock to get a recommendation on what's the best size for your application. The kit we received for our 1996 test bike has a suggested retail price of \$2460. Talk with your local Edelbrock dealer or call Edelbrock to get the correct Total Power Package for your machine.

We're also going to install Custom Cycle Engineering's (CCE) new finned rocker box tops and timing cover to the bike's exterior. CCE has been manufacturing finned components for Big Twins for years and has just recently released its complete line of finned billet for Sportsters. This finned design not only enhances the overall appearance of the machine, it also adds additional cooling area.

Just follow along with the accompanying photos as we install Edelbrock's Total Power Package onto our Sportster test bike. ■

## SOURCES

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