



# **KEITH DORTON SIGNATURE SERIES RACE MANIFOLD**

**FOR THE SMALL BLOCK CHEVY  
WITH 23° STANDARD PORT HEADS**

**PART NUMBER 300-110**

**WARNING! READ AND FOLLOW THE INSTRUCTIONS BEFORE, DURING, AND AFTER INSTALLATION TO PRESERVE THE WARRANTY.**

## **INTRODUCTION**

Holley Performance Products has written this manual for the installation of the **Keith Dorton Signature Series Raised Intake Port Race Manifold**. This manual contains all the information needed to install this manifold. Please read all the **WARNINGS, NOTICES, NOTES, and TIPS**. They contain valuable information that can save you time and money. It is our intent to provide the best possible products for our customer; products that perform properly and satisfy your expectations. Should you need information or parts assistance, please do not return the unit to the store without first contacting technical service at 1-270-781-9741, Monday through Friday, 7 a.m. to 5 p.m. Central Time. By using this number, you may obtain any information and/or parts assistance that you may require. Please have the part number on hand of the product you purchased when you call technical service.

## **APPLICATION**

The **Keith Dorton Signature Series Race Manifold** was designed for use on small block Chevrolet engines. The design is specifically for competition and off-road use. It has no provision for EGR and no exhaust heat to the manifold. This can adversely affect idle stability and part throttle operation if used on a street driven vehicle.

**NOTE:** It may be necessary to purchase some of the parts listed below (or the equivalent) in order to properly complete the manifold installation. Determination of equivalency is the responsibility of the consumer and Holley Performance Products does not assume that responsibility.

## PARTS REQUIRED

- A. Intake Manifold Gasket Set (Felpro #1205)
- B. Thermostat Housing Gasket
- C. Throttle Cable Mounting Bracket
- D. Automatic Transmission Kickdown Bracket
- E. Silicone Based Sealant (such as Permatex Silicone Form-A-Gasket, Dow Corning Silastic RTV, or an equivalent)

## TOOLS REQUIRED

- A. Socket Set—3/8 Drive
- B. Open End Wrenches
- C. 10" Adjustable Wrench
- D. Ignition Wrench Set
- E. Screwdriver Set
- F. Gasket Scraper
- G. Needle Nose Pliers
- H. Drain Bucket
- I. Timing Light
- J. Torque Wrench

**NOTE:** To reduce chances of engine contamination by dirt or other material, it is advisable to clean the engine exterior before starting the manifold change.

## INSTALLATION

1. Disconnect the ground cable from the battery.
2. Drain the radiator (it may be necessary to remove the bottom radiator hose if there is no drain plug in the radiator).

**NOTE:** Be careful of hot water and steam if the engine is still warm.

3. Disconnect the throttle linkage.
4. Remove the gas cap to relieve the pressure from the fuel system and disconnect and plug the fuel line at the carburetor.
5. Remove the carburetor.
6. Tag and remove the coil wires and the coil bracket.
7. Remove the top alternator bracket.
8. Remove the top radiator hose complete with thermostat housing. Remove the thermostat.
9. Remove the distributor cap.
10. Carefully note the position of the rotor and the distributor vacuum advance can (a sketch could be helpful).
11. Remove the distributor hold-down clamp and remove the distributor.

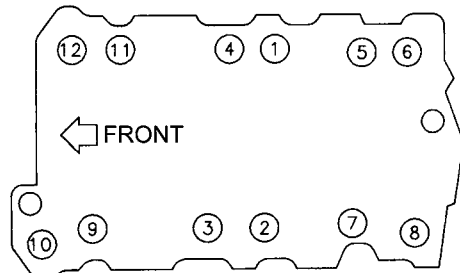
**NOTE:** Do not crank the engine while the distributor is out of the engine.

12. Remove the manifold hold-down bolts.
13. Loosen or remove the one valve cover (it may be necessary to use a new gasket to prevent oil leakage).
14. Carefully remove the manifold.
15. Place clean paper towels or rags in the intake ports to prevent scrapings and foreign materials from entering the cylinder head ports and the engine.
16. Clean the old gaskets from the cylinder head and block surfaces.

17. Holley suggests running a 3/8-16 tap in each manifold bolt hole in each cylinder head to clean the hole. If a tap is not available, run a manifold bolt through each hole before installing the manifold.
18. Carefully remove the port stuffing and valley rags when the cylinder head and block surfaces are clean.
19. Transfer all fittings from the old manifold before installing the new manifold. Pipe plugs should be used to close off all unused openings.
20. Apply a thin coat of silicone sealant to the cylinder head gasket surface. Lay the new manifold gaskets in place by aligning the bolt holes.

**NOTE:** Do not use sealant on rubber end seals.

21. Apply sealant to manifold gaskets.
22. Carefully lay the intake manifold in place.
23. Start all the hold-down bolts by hand. Be sure all the brackets are under the proper bolts.
24. Tighten the bolts to 15 ft/lbs. and progress to 25 ft/lbs. in 5 ft/lb. increments, noting the torque sequence below in Figure 1.



MANIFOLD TIGHTENING SEQUENCE

Figure 1

25. Retighten the valve cover.
26. Install the thermostat, thermostat housing gasket (using silicone sealant on both sides of the gasket), and the thermostat housing. Assure the thermostat housing has been cleaned of any old gasket material.
27. Replace the distributor, so the rotor and vacuum can are in the original position.
28. Install the distributor hold-down clamp and "snug down".
29. Install the ignition coil and attach all the wires.
30. Install the studs in the manifold flange and lay the carburetor gasket in place.
31. Install the carburetor as per the instructions supplied with the carburetor, or install the original carburetor in the reverse order of removal.
32. Connect the throttle linkage, hoses, and fuel line as per the carburetor instructions.
33. Install the alternator bracket in the original location and tighten the belt.
34. Assure that all the unused water fittings and vacuum ports are properly plugged.
35. Close the drain and fill the radiator to the proper level with coolant. Replenish, as necessary.
36. Reinstall the gas cap.
37. Reconnect the battery.
38. Check for proper hood clearance before closing the hood.
39. Re-torque the manifold bolts to 30 ft/lbs. after warm-up.

## GENERAL INFORMATION

1. Holley Performance Products recommends periodically checking the torque on the manifold bolts to minimize the possibility of a manifold vacuum leak.
2. The cylinder head faces and the end surfaces of the manifold must be milled to compensate if the cylinder heads have been milled or the cylinder block "decked". This is necessary to maintain correct port alignment, minimize the possibility of manifold leaks, and assure proper engine performance.

**NOTE:** The cylinder head faces are each 35° from the horizontal.

**NOTE:** The firing order is 1-8-4-3-6-5-7-2.

Printed in U.S.A.  
Copyright © 2001

**199R-10240**

**Holley**  
Performance Products

Date: 01-26-01