

INSTRUCTIONS FOR 53MM, 58MM, & 62MM EFI ELLIPSE THROTTLE BODY & MANIFOLD KITS, WITH OR WITHOUT ELECTRONIC COMPONENTS

Use on JIMS® 120", 131", or 135" Engines or others with performance heads, like Screamin' Eagle. Use on 2006 - present FXD, FXST, and 2006 - 2007 FL'S.

FOR RACE APPLICATION ONLY.



THROTTLE BODY WITH ELECTRONIC COMPONENTS

Part No.	Description
	53mm Throttle Body (Manifold Sold separately)
No.5215 SUPPLES	58mm Throttle Body (Manifold Sold separately)
No.5221 SUPPLIES	62mm Throttle Body (Manifold Sold separately)

THROTTLE BODY WITHOUT ELECTRONIC COMPONENTS

Part No.	Description
No. 5210	53mm Throttle Body (Manifold Sold separately)
No. 5216	58mm Throttle Body (Manifold Sold separately)
No. 5222	62mm Throttle Body (Manifold Sold separately)

Read instructions thoroughly before assembling or using this throttle body. Refer to last two pages of these instruction sheets for a blowup view of complete throttle body and manifold assemblies for installation and part number reference.

Instructions are for the part numbers and application charts below.

Special Parts Needed:

1 Air Filter

You will need to purchase a JIMS Elliptical Billet Air Cleaner Backing plate kit shown below or equivalent. Order JIMS Chrome No.5286 or JIMS Black No.5275. See JIMS website for instruction sheet No.5275-IS for details on the backing plate kit. These kits will fit 53mm, 58mm, or 62mm JIMS throttle Bodies. May use air cleaner covers equivalent to OEM No.29121-07.

MANIFOLD WITH ELECTRONIC COMPONENTS

Part No.	Description	
No. 705	Use on engines with stock cylinder height, or JIMS®	
	Race Engines 120", 131" and 135". Will work on	
	stock cylinder length to plus .100" longer cylinders.	
No. 707	Use on engines having cylinders longer than plus .125"	
MANIFO	OLD WITHOUT ELECTRONIC COMPONENTS	
MANIFO Part No.	OLD WITHOUT ELECTRONIC COMPONENTS Description	
Part No.	Description	

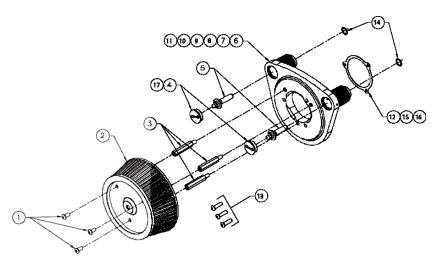
No.**706** Use on engines having cylinders longer than plus .125"

NOTE: PLEASE READ ALL INSTRUCTIONS COMPLETELY BEFORE PERFORMING ANY WORK! IF YOU DO NOT KNOW WHAT YOU ARE DOING, DO NOT DO IT! ALWAYS WEAR SAFETY GLASSES OR OTHER FACE AND EYE PROTECTION SUCH AS FULL FACE SHIELD. JIMS® IS NOT RESPONSIBLE FOR DAMAGE, INJURY, OR YOUR WORK. JIMS® IS NOT RESPONSIBLE FOR THE QUALITY AND SAFETY OF YOUR WORK.

Performance Parts For Harley-Davidson Motorcycles



JIMS® Race Flow Air Cleaner Kit



Throttle Body Component Information

No.5215 and No.5221, Throttle bodies with electronics have been supplied with the following components:

QTY.	H-D Part#	Description
1	27659-06	Throttle Position Sensor
1	27381-06	Intake Air Temp Sensor
1	27658-06	Idle Air Control Motor

1 3 SCREW, 1/4-20 X 1/2", BHCS, BLK, AIR ELEMENT 8 2 1 AIR ELEMENT (H-D® #29400019 OR K&N #HD-0818) 5 3 3 STANDOFF, FILTER 5 4 2 PLUG, BLACK BACKING PLATE 522 6 1 BACKING PLATE, BLACK, JIMS EFI 5281-1 & 528 7 1 BACKING PLATE, BLACK, HD EFI 5282-1 & 528 8 1 BACKING PLATE, BLACK, STOCK DELPHI EFI 5284-1 & 528 9 1 BACKING PLATE ASSY, CHROME, JIMS EFI 5284-1 & 528 10 1 BACKING PLATE ASSY, CHROME, STOCK DELPHI EFI 5284-1 & 528 11 1 BACKING PLATE ASSY, CHROME, STOCK DELPHI 5 12 1 GASKET, BACKING PLATE, JIMS EFI 5 13 3 SCREW, 1/4-20 X 1 1/4", BHCS, BLK, BACKING PLATE 2 14 2 O-RING, BREATHER STANDOFF 5 15 1 GASKET, BACKING PLATE, HD 58MM BY WIRE EFI 6 16 1 GASKET, BACKING PLATE, FOR STOCK DELPHI 7 2 PLUG, CHROME, BACKING PLATE 522			PARTS AVAILABLE SEPARATELY	
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15 1 GASKET, BACKING PLATE, HD 58MM BY WIRE EFI 16 1 GASKET, BACKING PLATE, FOR STOCK DELPHI 17 2 PLUG, CHROME, BACKING PLATE 52:	13	3	SCREW, 1/4-20 X 1 1/4", BHCS, BLK, BACKING PLATE	2166
16 1 GASKET, BACKING PLATE, FOR STOCK DELPHI 17 2 PLUG, CHROME, BACKING PLATE 52:	14	2	O-RING, BREATHER STANDOFF	874
17 2 PLUG, CHROME, BACKING PLATE 52	15	1	GASKET, BACKING PLATE, HD 58MM BY WIRE EFI	875
,,,,	16	1	GASKET, BACKING PLATE, FOR STOCK DELPHI	884
4.0. 4. INTERLIGION CONTEST	17	2	PLUG, CHROME, BACKING PLATE	5275-2
18 I INSTRUCTION SHEET 52/	18	1	INSTRUCTION SHEET	5275-IS

No.5216 and No.5222, Throttle bodies without electronics have not been supplied with the above components. To complete the above Throttle bodies without electronics, it will be necessary to purchase the three components from your local H-D dealer. Or you can use the three parts from your stock throttle body. See instruction sheet for installation information.

Manifold Component Information

No.705 and No.707 Manifolds with electronics have been supplied with the following components:

QTY.	H-D Part#	Description
1	27651-06	Fuel Rail Assembly
2	27654-06	S.E. Injectors
1	32316-99	MAP Sensor with seal
1	11291	Seal, map sensor

No.704 and No.706 Manifolds without electronics have not been supplied with the above components.



To complete the above manifolds without electronics, it will be necessary to purchase the first three components in the above list, from your local H-D dealer. Or you can use the three parts from your stock throttle body.

Note: If your engine will be generating less than 100 HP, you may use your stock fuel injectors No.**27709-06A**. If you have built your engine to produce more than 100 HP, then you need to install **27654-06** S.E. performance injectors. See instruction sheet for installation information.

Ellipse 53mm, 58mm, & 62mm Throttle Body

JIMS Ellipse 53mm, 58mm, and 62mm Throttle Bodies have outstanding performance when installed on all EFI, 2006 to present throttle cable style motorcycles. They are compatible with all O.E.M. electrical components, such as: throttle position sensor, idle air control motor, fuel injectors, etc. Also compatible with most ignition systems from H-D or aftermarket. Please make sure that the system installed with JIMS Ellipse has enough tuning capability required for the size engine you will be tuning. Not compatible with throttle by wire style motorcycles installed on 2008 to present FL models. Surpasses the Screamin Eagle 27623-05A 50mm Throttle Body.

Note: This performance Ellipse throttle body is intended for high performance and racing applications only, not to be sold or used on pollution controlled motorcycles. You must also retune for this new throttle body. Recalibration of the Electronic Control Module (ECM) must be performed to operate correctly.

WARNING: WORKING WITH GASOLINE IS VERY DANGEROUS AND HIGHLY EXPLOSIVE. WHEN YOU'RE WORKING ON THE FUEL SYSTEM, DON'T SMOKE OR HAVE ANY SPARKS OR OPEN FLAMES ANYWHERE NEAR YOUR SERVICE AREA. YOUR LIFE DEPENDS ON THE SAFETY PRECAUTIONS YOU TAKE. NON-SUFFICIENT SAFETY PRECAUTIONS COULD RESULT IN DEATH OR SERIOUS INJURY. ALWAYS WEAR SAFETY GLASSES, OR FULL FACE SHIELD, OVER YOUR EYES AND FACE. JIMS® IS NOT RESPONSIBLE FOR QUALITY, SAFETY, DAMAGE, OR INJURIES FROM YOUR WORK PERFORMED. GASOLINE IS EXTREMELY EXPLOSIVE AND HIGHLY FLAMMABLE. FIRE OR EXPLOSION COULD RESULT IN DEATH OR SERIOUS INJURY. DON'T SMOKE OR HAVE ANY FLAMES ANYWHERE AROUND THE YOUR WORK AREA. INCLUDING GAS FIRED WATER HEATERS.

CAUTION: WEAR SAFETY GLASSES. EXCESSIVE FORCE MAY DAMAGE PARTS!

SEE JIMS® CATALOG FOR HUNDREDS OF TOP QUALITY PROFESSIONAL TOOLS.

THE LAST TOOLS YOU WILL EVER NEED TO BUY.



Preparing For Installation

Read instructions thoroughly before assembling or using this throttle body. Refer to last two pages of these instruction sheets for a blowup view of complete throttle body and manifold assemblies for installation and part number reference.

Special Tools Needed:

Tuning software for year and model motorcycle it will be installed on.

- 1. A fire extinguisher that is capable of putting out a gas fire.
- 2. H-D service manual or equivalent for the motorcycle you will be repairing.
- 3. A fuel pressure test gauge like JIMS No.955 to check fuel pressure.

To remove gas tank and gain access to the throttle body on the motorcycle your working on, refer to H-D service manual or equivalent. If any fuel is spilled, it needs to be removed immediately and any excess needs to be contained in a suitable manner. Wear safety glasses over your eyes. If any fuel gets on any part of your body wash it off. To avoid any fuel that may be under pressure when removing fuel lines you must first purge fuel lines (relieve fuel pressure). Locate and remove the 15-amp fuel pump fuse. Start the engine letting it idle until it stalls. Try to restart the engine for 3 to 4 more seconds. This will help remove most all fuel from the fuel lines.

Follow your H-D service manual for removal of throttle body.

WARNING: Disconnect the battery ground cable from the battery.

Note: If installing either the 53mm, 58mm or 62mm throttle body with electronics (No's.**5209**, **5215**, and **5221** along with No's. **705** or **707** manifold) on the motorcycle you're servicing, you can skip to the letter D paragraph of instructions and continue reading.

Note: If installing either the 53mm, 58mm or 62mm throttle body without electronics (No's.**5210**, **5216**, and **5222** along with No's.**704** or **706** manifold) on the motorcycle you're servicing, you will need to remove the following parts from the old throttle body for use on new Ellipse Throttle Body and manifold.

- 1-Map sensor.
- 1-Intake Air Temp sensor.
- 1-Throttle position sensor.
- 1-Idle air control motor.
- 1-Fuel rail assembly.
- 2-Fuel injector assemblies.

Follow lines A thru E below for JIMS part numbers 5210, 5216, 5622, 704, & 706.

Warning: As you may have noticed, we have installed all mounting hardware to replace all stock mounting hardware. Be sure to discard the stock hardware (do not use this metric hardware. It will strip the SAE "American", threads in JIMS throttle body.) Only remove the screws needed at this time for the installation of that component.

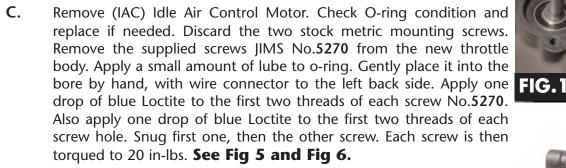


Removing Good Serviceable Components From Your Stock Throttle Body

Remove the (TPS) throttle position sensor. Check the o-ring condition and replace if needed. Discard the stock metric mounting screws. Remove the supplied JIMS No.1294 screws in the new throttle body. Rotate throttle body so the end of throttle shaft is facing up. Gently place throttle position sensor with the wire connector to the left. The D shaped male end of throttle shaft will fit into the D shaped female bore of sensor. **See Fig 1.**

- A. Apply one drop of blue Loctite to the first two threads of each screw No.1294. Also apply one drop of blue Loctite to the first two threads of each screw hole. Snug first one, then the other screw. Each screw is then torqued to 18 in-lbs. **See Fig 2.**
- **B.** Remove (IAT) Intake Air Temperature Sensor. Check o-ring condition and replace if needed. Discard the stock metric mounting screw.

Note: All of JIMS throttle bodies have Intake Air Temperature Sensor screw No. 2297, a ½" Long screw installed. If your Intake Air Temperature Sensor is the early style (Fig No.A1), it will have the thinner mounting surface. Use bagged screw No. 5270 3/8" long. If the Intake Air Temperature Sensor is the late style, it has a thicker mounting surface. Use screw No. 2297 ½" long. (See Fig No.A1) Remove supplied JIMS No.5270 screw from the new throttle body. Install the Temp Sensor using a small amount of lube to O.D. of O-ring and gently slide it into its bore. Apply one drop of Blue Loctite to the first two threads of screw No.5270, or screw No.2297. Snug screw, then torque to 15-20 in-lbs. See Fig 3 and Fig 4.



Note: At this time do not install (MAP) Manifold Absolute Pressure Sensor, Fuel Rail assembly and Fuel Injector assemblies. You will be installing these components after the throttle body and manifold have been installed on the engine.

Place your manifold against the throttle body with No.5261 o-ring in its groove. Use a small amount of gasket sealer to hold o-ring in place.
 See Fig 7.







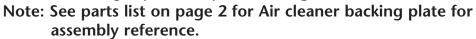


- E. Place the manifold over the end of throttle body with the Fuel Injector mount holes facing upward, along with the top of the throttle body facing up. With the two mounting studs going thru manifold, use two small drops of clean oil on the threads of both JIMS nuts No.5263 and the threads of each stud. **See Fig 8.**
- **F.** Apply torque in small amounts. (About 25 in-lbs at a time) Torque both nuts, going from one nut to the other until you have torqued both to 110 in-lbs



When checking the backing plate mounting brackets for proper alignment, you will also be checking for manifold fitment between both intake ports. Use this information for all the JIMS Throttle Body and manifolds kits. You will be performing a test fitment of all air filter parts. After testing, be sure to go back through and apply Loctite and torque all hardware as indicated in this instruction sheet or per your H-D service manual.

G. Install both O-rings No.874 to the back side of both breather standoffs of air cleaner backing plate. Use a small amount of gasket sealer to hold o-ring in place if required. See Fig 9



- H. Place the backing plate gasket No.876 for use on JIMS throttle body onto back side of plate (side that mount against throttle body). Apply a small amount of gasket sealer on gasket and position gasket to align with the three mounting holes on backing plate. Insert three No.2166 screws from the air filter side of backing plate. Hold backing plate in your hand, keeping screws in position. Apply two drops of blue Loctite to each screw. Now install on mounting surface of the throttle body, just snug at this time with your 5/32 allen socket. See Fig 10
- I. Apply 3 drops of blue Loctite to the first few threads of both breather bolts, No.5283. Install bolts through backing plate's breather standoffs, just snug at this time with your 7/16" socket. See Fig 10 and Fig 11.
- J. Check the alignment of both manifold intake flanges, going to each intake port of the front and rear head. What we are looking for is the same amount of an air gap on the front as there is on the rear port. We will also need to check up and down alignment of both ports. **See Fig 12.**

Note: Manifold and backing plate fitment check:

Some engines are taller and some are shorter. Some require longer or shorter (wider or narrower) manifolds to fill the space between the two intakes ports of an assem-





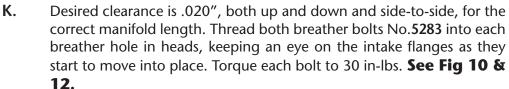


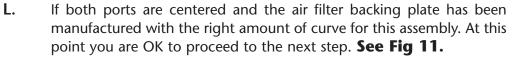




bled engine. You will need to have at least a .010" air gap per side and no more than .040". There are some manifolds that will give you .100" gaps. This can and has been over come (as far as

intake air leaks) by making sure that the manifold is centered between both intake ports. With JIMS wider manifold you will no longer need be to concerned with too much of a gap. You will be custom fitting the width to your engine. If the application you are working with requires the manifold to be shortened, you can do so by filing or sanding the amount required to fit your application. If shortening is required by sanding or filing, you will need to plug off all open holes that filings may get into. You will also need to de burr all burrs that may have been pushed up from filing or sanding.





- M. At this step you should have your manifold alignment worked out. Proceed by removing the two JIMS No.5283 breather bolts from the heads.
- N. Starting at the manifold end of throttle body, place one each of flange H-D No.27059-05A (supplied) with the inside bevel facing away from manifold over the left and right ports. Next with a small amount of dish soap spread over the I.D. and O.D. of seal H-D No.27035-05. (Supplied) With the bevel of new seal facing the installed flange, install seal up to the bevel of installed flange, repeat the above for other port. **See Fig 14.**
- O. Apply two drops of blue Loctite to the threads of all 4 flange mounting screws JIMS No.5274 (supplied). Thread in only two screws into the lower holes on the bottom side of front and rear intake port. Only thread both screws halfway in at this time. See Fig 13.
- Position the throttle body on head and rotate flanges H-D No.27059-05A; so the forked screw holes are at about four o-clock positions. Place both forked ends of flanges over the two installed screws. Only finger tighten these screws at this time. Next install the two other screws finger tight at this time. See Fig 14.
- **Q.** Connect throttle and idle cables. Refer to H-D service manual.

Note: It may be necessary to move the throttle body (with backing plate) up or down a small amount to align the breather bolts with the holes in both heads. This may require loosening the intake clamps on the manifold.









- **R.** Torque the three backing plate to throttle body screws from line **H** to 60 in-lbs in a criss cross pattern.
- **S.** Torque both breather bolts from line **I** to 15 ft-lbs, first one side, then the other, then torque both to 24 ft-lbs.
- **T.** Install all three standoffs No.**5279**. Apply two drops of blue Loctite to the first few threads. With your 3/8" socket, torque all to 60 in-lbs in a criss cross pattern.

See Fig 16

- U. Install both screw plugs No. 5278-1 or -2. Apply two drops of blue Loctite to the first few threads, torque each cover with either JIMS tool No.1170 or No. 2233 to 60 in-lbs See Fig 17
- V. Place air filter element No.5277, over the 3 standoffs. Align all 3 holes with the 3 holes on each standoff. Notice that one mounting hole is closer to centerline and locate this hole at the six o'clock position as shown.

See Fig 18.

W. Apply 2 drops of blue Loctite to the threads of all three No.**8090** screws and torque with your 5/32" Allen socket to 60 in-lbs.

See Fig 19.

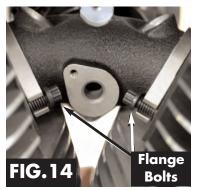
- X. Install your outer air cleaner cover. **See Fig 20.**
- Y. Install all wires per your H-D service manual.
- **Z.** If you have not installed and set up your ignition system you may do so now, following the instructions sheet supplied with the ignition system you will be installing.
- **AA.** Torque all four flange-mounting screws JIMS No.**5274** (supplied). Torque the top flange screw of rear head to 10 ft-lbs then torque the top flange screw of the front head to 10 ft-lbs.
- **BB.** Now moving to the rear head bottom flange screw, torque this to 10 ft-lbs. Move to the front head, bottom screw, and torque to 10 ft-lbs. Repeat the above line, this time torque to 15-17 ft-lbs. For all 4 screws.
- CC. Remove your stock (MAP) Manifold Absolute Pressure Sensor. Check that seal is in serviceable condition replace if needed. Replace with JIMS mounting bracket No.5269 (supplied). Remove the supplied screw JIMS No. 1220 (supplied) from throttle body, and then apply two drops of Blue Loctite and torque to 25 in-lbs. **See Fig 15.**

Note: If you will be using the fuel injectors supplied with either manifold kit No. 705 or No. 707, install per your H-D service manual.









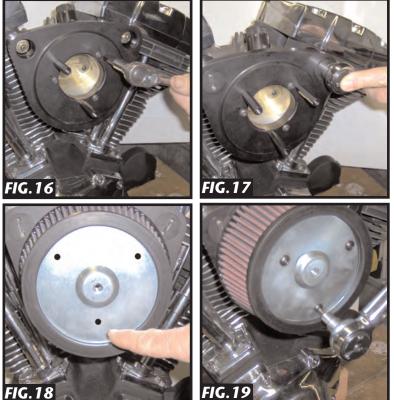


- **DD.** Remove your stock fuel rail and fuel injectors per your H-D service manual and then reinstall on new manifold per your H-D service manual. **See Fig 15.**
- **EE.** Reconnected the battery and install fuel tank. If this is a new engine, follow the instruction sheet supplied with engine before startup.

Note: Check for any air or fuel leaks. Repair if needed.

WARNING:

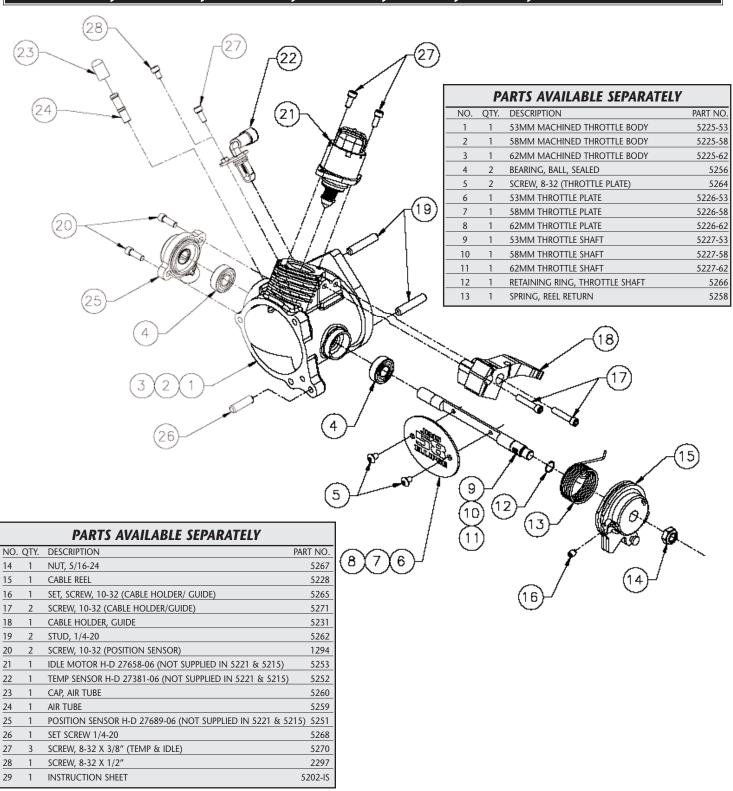
Testing for fuel leaks: The first time fuel pressure is going to this new connection, make sure to check for any fuel leaks from any of the fittings before starting the engine.











Performance Parts For Harley-Davidson Motorcycles

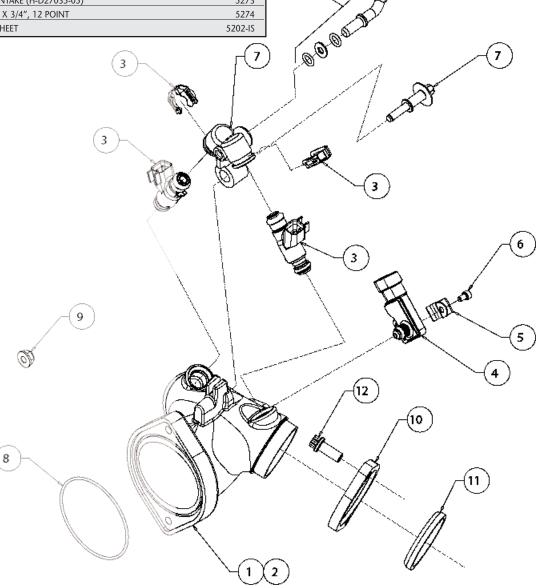
12-13



INSTRUCTION SHEET FOR PART No.'S 5209, 5210 5215, 5216, 5221, 5222, 704, 705, 706 & 707

PARTS AVAILABLE SEPARATELY DESCRIPTION PART NO. NO. QTY. INTAKE MANIFOLD, STOCK MOTOR 5239-1 INTAKE MANIFOLD, TALL MOTOR 5239-2 S.E. INJECTOR (NOT SUPPLIED IN 704 & 706) H-D 27654-06 5255 MAP SENSOR W/ SEAL (NOT SUPPLIED IN 704 & 706) (H-D 32316-99) 5250 BRACKET, MAP (H-D38723-99) 5269 SCREW, 8-32 (MAP BRACKET) 1220 FUEL RAIL, ASSEMBLY (NOT SUPPLIED IN 704 & 706 (H-D 27651-06) 5254 5261 NUT, 1/4-20 FLANGE NUT, NYLON 5263 FLANGE, INTAKE (H-D 27059-05A) 5272 SEAL, FLANGE, INTAKE (H-D27035-05) 11 5273 12 SCREW, 5/16-18 X 3/4", 12 POINT 5274 13 **INSTRUCTION SHEET** 5202-IS

No.704, 705, 706 & 707 MANIFOLD PARTS LIST



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