

SECTION 5: 1926-1984 Vintage Models

S&S®

BILLET OIL PUMPS FOR 1936-'84 OHV BIG TWINS

Intended as a direct replacement oil pump, S&S billet oil pumps incorporate some unique S&S design features. Installations on engines from 1936-'69 can be a simple bolt-on, or the oiling system can be updated with simple drilling steps with the S&S drilling fixture. Engines from 1970-'72 require a drilling step and a plugging step. Engines from 1973-'80 require only the drilling step. Both steps can be performed while the engine is in the chassis. Installations on 1981-'99 engines are strictly bolt-on and require no crankcase modifications. Easy to follow installation instructions are provided with every kit.

FITMENT

- Pumps are available for stock 1936-'84 big twin engines
- Custom engines using S&S crankcases

FEATURES AND BENEFITS

- Same width oil supply and return gears as the stock Harley-Davidson® aluminum pump
- S&S pinion and oil pump drive shaft drive gears increase potential oil volume delivery by 25% over stock on 1972 and earlier engines
- S&S pumps for 1936-'67 engines used with the S&S oil pump drive gears deliver 33% more oil than the original cast iron pump
- Machined with an oil pressure relief bleed off passageway – *relieves pressure build up on top of the valve to maintain consistent oil pressure*
- Oil pressure regulation bypass routes excess oil directly to the supply side of the pump – *reduces the amount of oil returned to the tank, less foaming and cavitation*
- The standard pump cover allows total flexibility for oil system configuration with a number of oil feed and return options

OPTIONS

- Pump only kits
- Pump with gears – *includes drive gears, and breather gear*










KIT CONTENTS

- Complete oil pump assembly
- Mounting hardware, fittings and gaskets
- Instructions
- Pump with gear kits also include:
 - Pinion shaft pump drive gear
 - Oil pump drive shaft gear
 - Breather gear

Typical "pump only" oil pump kit contains all parts needed for oil pump replacement.

S&S® OIL PUMP KITS FOR 1936-'84 BIG TWIN ENGINES

| Year/Crankcase | Without Gears & Shims | MSRP | With Drive Gear, Breather Gear & Shim Kit | MSRP |
|-----------------------------------|--|----------|--|----------|
| KN-Series** (Silver Powdercoated) | 106-4688 | \$455.95 | — | — |
| 1936-'47 | 31-6200  | \$327.95 | — | — |
| 1948-'53 | 31-6200 | \$327.95 | 31-6292  | \$465.95 |
| 1954-'69 | 31-6200 | \$327.95 | 31-6293  | \$455.95 |
| 1973-'77 | 31-6203  (H-D® #26190-73) | \$327.95 | 31-6294  | \$455.95 |
| 1978-'84 | 31-6203  (H-D® #26190-73) | \$327.95 | 31-6295  | \$455.95 |

*Requires 1973-'77 breather gear. **Uses a 28 lb pop-off spring to lower oil pressure at high RPM.
S Universal cover with top and bottom oil feeds.

S&S® OIL PUMP BODY ONLY FOR 1936-'91 BIG TWINS

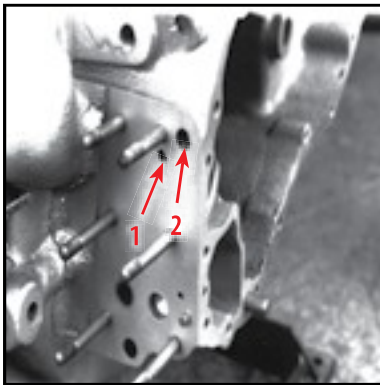
| Description | Part # | MSRP |
|-------------|--------------------------------|---------|
| Universail | 31-6059 (H-D® #31-6041) | \$80.95 |
| Custom | 31-6060 (H-D® #31-6045) | \$80.95 |

All reference to H-D® part numbers is for identification purposes only. We in no way are implying that any of S&S Cycle's products are original equipment parts or that they are equivalent to the corresponding H-D® part number shown.

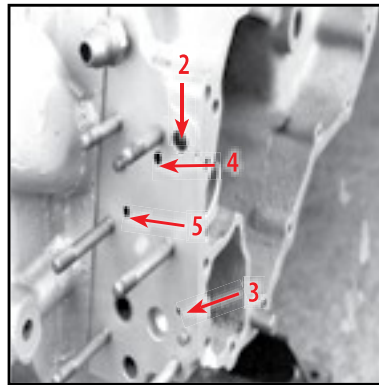
REPLACEMENT PARTS ON PAGE 5-98

Identify Your Stock Cases

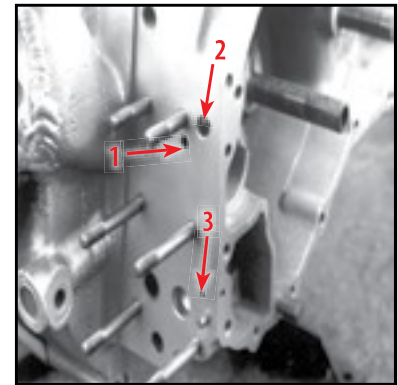
It is important to correctly identify the style of stock crankcases in order to determine what oil pump to use. This is also important to determine which crankcase modifications are needed or are desirable. These photos show the oil pump mounting surfaces of a number of stock crankcases. Match your case to one of these photos before ordering an S&S oil pump for that engine. Engines built with aftermarket crankcases may differ from these photos. For aftermarket crankcases other than S&S, it may be necessary to contact the manufacturer to determine what oil pump should be used.



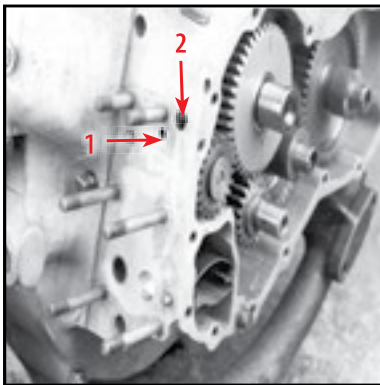
1936-1947



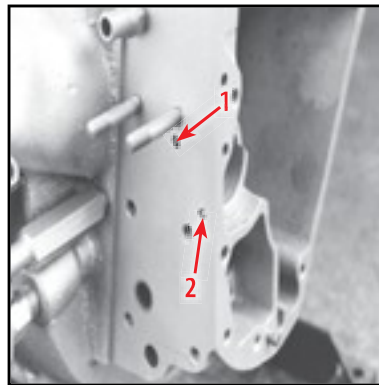
1948-1952



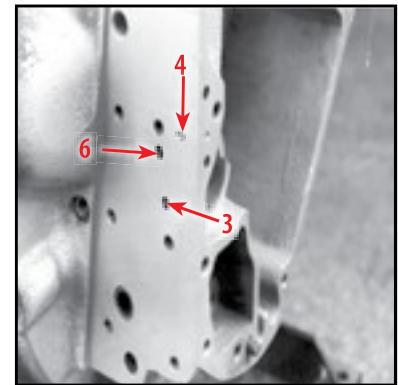
1953-1964



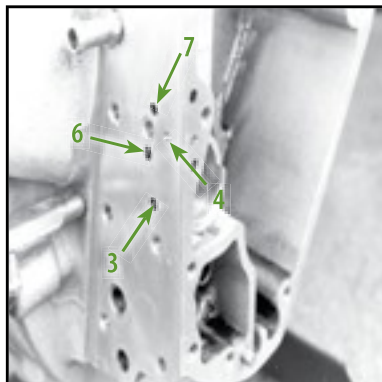
1965-1969



1970-1972



1973-1981



1981-1999

OIL PASSAGE IDENTIFICATION

1. Main oil supply
2. Excess oil and pressure valve relief
3. Front chain oil
4. Pinion shaft oil
5. Top end oil
6. Top end and tappet block oil
7. Pressure valve relief

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NOTES

S&S pinion shaft pump drive gear, part #33-4237 for 1939-'53 engines or part #33-4232 for 1954-'89 engines can be installed along with pump drive gear part #33-4230 with any S&S oil pump or stock oil pump in 1939-'72 engines to speed up the pump and increase oil volume delivered by up to 25%. While most rebuilds may not require new drive shaft and pinion shaft drive gears, S&S recommends that the faster drive ratio be utilized in pre-1973 engines to improve maximum potential oil volume in engines equipped with hydraulic lifters. This conversion may not be desirable for knucklehead engines where returning cylinder head oil may be a problem.

1948-'72 engine owners can update their overall oiling system to the hydraulic units and top end through a series of simple drilling steps. These steps are optional and recommended only if hydraulic lifters are used.

Some engine configurations feed oil to the primary chain through passageways inside the crankcases and others feed oil through hoses directly from the oil pump cover.

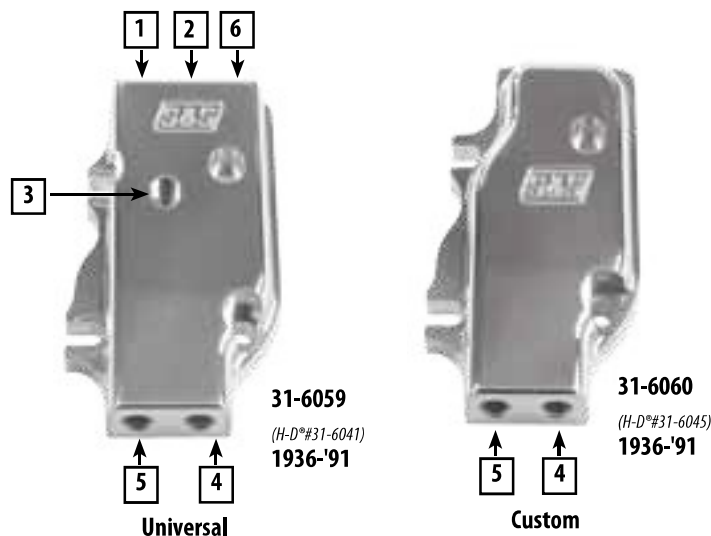
1973 and later engines meter the oil with the breather valve gear while earlier models use an adjustable metering screw or a small fixed metering hole in the oil pump body to supply this oil. All of these oiling system designs are supported by the appropriate S&S oil pump kits.

Chrome Plating the Pump – It is extremely difficult to chrome plate an oil pump without getting chrome in the passageways, cavities or on the machined surfaces where the gears, check ball, and pressure valve operates. Chrome in these areas, as well as on the gasket surfaces, impairs the pumps performance by altering the operating tolerances machined into the parts. In addition, abrasive particles of chrome may break loose causing damage to the pump and the engine. Because of this, S&S does not recommend chrome plating the pump body or cover. S&S voids its warranty if these parts are chrome plated.

Kit part #31-6294 for 1970-'77 and kit part #31-6295 for 1977-'91 contain the same oil pump assembly. The difference between these kits is the pitch diameter of the breather gears provided. These gears match the pitch diameter of the pinion and cam gears in their respective year group. Therefore, if a late pinion and cam gears are used in an early engine, kit part #31-6295 should be used to insure correct fit between cam and breather gear. The plugging and/or drilling steps required for the specific year crankcases used still apply regardless which pump kit is used.

OIL HOLE IDENTIFICATION FOR S&S BILLET OIL PUMPS

1. Top oil return hole
2. Top oil supply hole
3. Oil pressure switch or gauge hole
4. Lower oil supply hole
5. Lower oil return hole
6. Front chain oiler hole



53-0013

CRANKCASE OIL PASSAGE DRILLING JIG

| Description | Part # | MSRP |
|---|---------|---------|
| S&S offers a drill jig, part #53-0013, that enables any engine builder to perform all the required and optional modifications to install any 1936-'81 style S&S oil pump kit. | 53-0013 | \$43.95 |