

BAKER R&D DIRECT DRIVE 3-SPEED



PN 301K, 3-SPEED BUILDERS KIT



**PREMIUM DRIVETRAIN INNOVATIONS
FOR AMERICAN MOTORCYCLES**

BAKER R&D DIRECT DRIVE 3-SPEED OVERVIEW

FEATURES

The Direct Drive 3-speed was developed for high horsepower competition applications like hill climbing, Bonneville and ¼ mile. Gear ratios as shown:

1 st	2.54
2 nd	1.60
3 rd	1.00

The special 3-speed shift drum is the N1 type with neutral on bottom for a 0-down, 3-up shift pattern. The drum has no provision to trigger a neutral switch.

Countershaft and 3rd gear are cut out of one piece of 8620 steel for superior strength over a stock 5-speed. Other than the countershaft and the special 2.54 ratio 1st gear pair, the shafts, and other gears are stock 5-speed items.

FITMENT

- 1990-2006 Big Twin – All

The 3-speed cartridge style gearset installs into any 5-speed based Big Twin transmission case with no modification.

KNOWLEDGE

Any seasoned tech with solid 5-speed service experience will have no issues installing the 3-speed builder's kit. We recommend that a factory service manual from 1990-2006 be available for reference during the installation process.

SPECIAL TOOLS REQUIRED

The regular 5-speed factory service tools are the only special tools required in addition to a well stocked tool box with American tools. BAKER also offers heavy duty versions of the factory tools:

BAKER P/N

ToolA-56

ToolB-56

ToolD-56

Description

Maindrive gear and bearing service kit or Harley equivalent

Inner race (primary) service kit or Harley equivalent

1-7/8 deep well socket or Harley equivalent

SPECIFICATIONS

TORQUE CAPACITY:

200 FT-LBS of engine torque at the crank

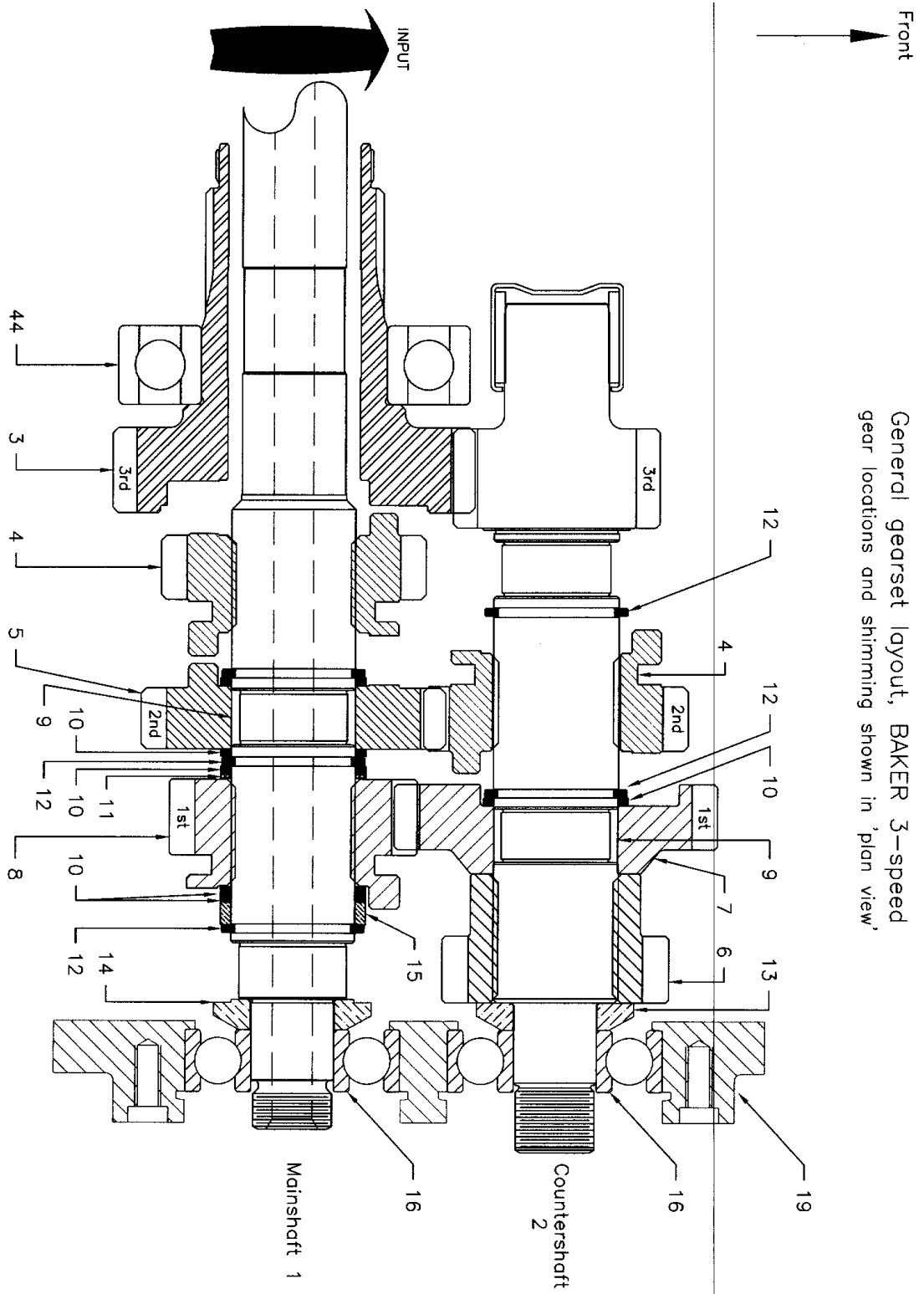
TRANSMISSION FLUID CAPACITY: 20-22 fluid oz.

BAKER recommends any high quality 5 weight, or lighter, transmission fluid for competition. For all non competition street applications we recommend Spectro™ Heavy Duty Platinum 6 Speed Transmission Oil, P/N BD-75140

SHIFT DRUM END PLAY: .002”-.008”

DOG TOOTH GAPS:

- **1ST GEAR DOG TOOTH GAP CLEARANCE:** .050”-.100”
- **2nd & 3rd GEAR DOG TOOTH GAP CLEARANCE:** .050”-.100” (both sides)



P/N 301K, 3-speed builders kit, 2.54 1st, 1.60 2nd, 1.00 3rd			
Item#	Part #	Quantity	Description
1	50000M	1	Mainshaft, 5-speed
2	996004-8	1	Countershaft, 5th gear combo
3	296591	1	Maindrive gear
4	296220	2	2nd main/ 3rd counter
5	296330	1	3rd main/2nd counter
6	51234C	1	4th countershaft
7	52511C	1	1st countershaft gear, 2.54 ratio, 31T
8	52511M	1	1st mainshaft gear, 2.54 ratio, 23T
9	8876A	2	Split cage needle
10	6003B	6	Thrust washer, 070 thick
11	6003B-045	1	Thrust washer, modified to .045 thickness
12	11067A	5	Retaining ring
13	35629-79	1	Spacer, countershaft
14	35064-79	1	Spacer, mainshaft
15	35063-89	1	Thrust washer, XL,
16	6304	2	Bearing, 52mm OD
17	D1300-52PP	2	Retaining ring, 52mm
18	51740-001	1	3/8-24 drain plug
19	1-5E-3	1	Door, 1-5E-3, 3-speed door
20	609B	6	Alignment dowel
21	37141	2	3/4-16 nyloc jam nut
22	73496	4	SHCS, 5/16-18X1-1/4 SS
23	73463	2	SHCS, 1/4-20X1-1/4 SS
24	6099SS	2	1/4 washer, small OD
25	6100	4	5/16 washer, small OD
26	33001	4	Washer #10
27	23207	4	SHCS 1/4-20X1-1/4
28	101-56E	1	Shift fork, 2nd gear mainshaft
29	102-5F	1	Shift fork, 3rd countershaft
30	122-6	1	Fork rod
31	35652-79B	1	Gasket, door
32	34904-86E	1	Gasket, top cover
33	36801-87B	1	Gasket, side cover
34	1302-334PP	1	85mm beveled retaining ring
35	12067B	1	Seal, main drive gear
36	11165A	1	Quad seal
37	2-3RN1	1	Shift drum , 3-speed N1 drum
38	111-56assy	1	Pillow block assembly, left side
39	104-5assy	1	Pillow block assembly, right side
40	555-56B	1	Ratchet pawl, BAKER
41	34064-00C	1	Spring, ratchet pawl
42	68010	1	retaining ring, 7/16 external
43	12045	1	seal, ratchet pawl shaft
44	6209	1	Bearing, maindrive gear

BAKER R&D DIRECT DRIVE 3-SPEED INSTALLATION

INSTALLATION:

- 1) Remove the 5-speed transmission gearset including the maindrive gear and maindrive gear bearing from the transmission case per your Factory Service Manual.
- 2) Remove the ratchet pawl from the case.
- 3) Thoroughly clean and degrease the case, top cover and side cover.
- 4) Remove the maindrive gear (3) from the 3-speed gearset by sliding it off the end of the mainshaft and install it in the case with the new bearing (44) and seal (35) and large retaining ring (34). Sprocket or pulley can be installed on the left side of the maindrive gear, use the quad seal (36) provided.
- 5) Double check that the ratchet pawl pivot bushing is very clean and apply some assembly lube or regular tranny lube to the bushing bore. Install the new ratchet pawl (40), new seal (43), and retaining ring (42). Re-use the eccentric pawl centering pin and fencer washer that goes in-between the left side case wall and the retaining ring (42).
- 6) Install the 3-speed gearset into the case with the trap door gasket (31) and fasteners & washers (22, 23, 24, and 25) provided. Refer to service manual for torque specs.
- 7) Install forks (28 & 29) and fork rod (30). Install shift drum and pillow block assembly (37, 38, and 39) with 4 alignment dowels (20), 4 cap screws (27), and 4 washers (26). Adjust eccentric pawl screw with transmission in 2nd gear. Refer to factory service manual for pawl adjustment.
- 8) Re-install the top cover and side cover with gaskets provided (32 & 33)
- 9) Fill with 22-24Ozs of transmission fluid per page 2.

BAKER R&D DIRECT DRIVE 3-SPEED

SPECIAL ORDERS

A minimum \$500 deposit is required with all special orders. Special orders include unique case finishes, unique side door requests (i.e.; wrinkle black door or no logo).

ALL OTHER ORDERS

Orders can be pre-paid using VISA, MasterCard or American Express.

Prices shown are F.O.B. Haslett, MI. BAKER™ provides free UPS ground shipping on all retail orders for complete transmissions or transmission kit. UPS air shipment is available upon request. Customer is responsible for air shipment premiums.

LIMITED WARRANTY

BAKER™ Inc. transmission accessories are guaranteed to the original purchaser to be free of manufacturing defects in materials and workmanship for a period of 90 days.

If the product is found by BAKER™ to be defective, such products will, at the option of BAKER™, be replaced or repaired at cost to BAKER™.

In the event warranty service is required, the original purchaser must call or write BAKER™ immediately with the problem. If it is deemed necessary for BAKER™ to make an evaluation to determine whether the transmission assembly or transmission kit is defective, the entire transmission assembly, whether originally purchased as an assembly or kit, must be properly packaged and returned prepaid to BAKER™ with a copy of the original invoice of purchase.

If after an evaluation has been made by BAKER™ and a defect in materials and/or workmanship is found, BAKER™ will, at BAKER™ option, repair or replace the defective part of the assembly.

Warranty card must be returned within 45 days of purchase to be valid.

ADDITIONAL WARRANTY PROVISIONS

This limited warranty does not cover labor or other costs or expenses incidental to the repair and or replacement of BAKER™ products. This warranty does not apply if one or more of the following situations is judged by BAKER™ to be relevant: improper installation, accident, modification (including but not limited to use of unauthorized parts), racing, high performance application, mishandling, misapplication, neglect (including but not limited to improper maintenance), or improper repair.

BAKER™ shall not be liable for any consequential or incidental damages arising out of or in connection with a BAKER™ transmission assembly, transmission kit, swingarm, fender, component or part. Consequential damages shall include without limitation, loss of use, income or profit, or losses sustained as the result of injury (including death) to any person or loss of or damage to property.

BAKER™ transmissions, transmission kits, and Wide Tire Kits are designed exclusively for use in Harley-Davidson® motorcycles. BAKER™ shall have no warranty or liability obligation if a BAKER™ part is used in any other application.

If it is determined that a BAKER™ transmission assembly has been disassembled during the warranty period for any reason, this limited warranty will no longer apply.

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It is the sole responsibility of the user to determine the suitability of this product for his or her use, and the user shall assume all legal, personal injury risk and liability and all other as well as all other obligations, duties and risks associated therewith.

CUSTOMER SUPPORT

For any installation or service questions, please contact our BAKER technical department toll free: 1-877-640-2004 or (517) 339-3835.

