The following catalog has gaps in its page numbers, or doesn't have any numbers. We have chosen to leave the page numbering in the order that Acrobat assigns it.

# **SERVICE PARTS BULLETINS**

The Service Parts Bulletin index indicates by column the series that each bulletin applys. The bulletin may or may not apply to all modes within the series indicated in the index. Below is a list to help determine which series your model falls into.

| Series                    | Model  |
|---------------------------|--|
| В                         | BF, BFA, BFAB, BG, BGA, BGAL, BGE, BGEL, B43, B48  |
| ССК                       | CCK, CCKA, CCKB, MCCK, RCCK  |
| DK                        | DKC, DKD, MDKC, MDKD   |
| J                         | DJA, DJB, DJBA, DJC, DJE, JA, JB, JC, MDJA, MDJB, MDJC,<br>MDJE, MDJF, MJA, MJB, MJC, RDJC, RDJE, RDJEA, RDJF, RJC |
| К                         | KH, KJ, KK, KM, KN, KP   |
| L                         | L317, L423, L634   |
| LT                        | LT/26K, LTII, LTIII  |
| Ν                         | NH, NHA, NHAV, NHB, NHBV, NHC, NHCV, NHE, NHEV, NHL,<br>NHLV, NHP, NHPV, N52                                       |
| OT                        | All OT's   |
| Р                         | All Performer - P216, P218, P220, P224   |
| Т                         | T260   |
| CLASS "B"<br>(Lg GenSets) | All Generator Sets above 17.5 kW rating.   |

1

| SPB |     |            |          |   |   |   |          |                                 |               |                   |         |         |  |
|-----|-----|------------|----------|---|---|---|----------|---------------------------------|---------------|-------------------|---------|---------|--|
| No. | B   | CCK        | DK       | J | K | L | N        | OT                              | $\mathbf{P}'$ | ĩ                 | Class B | Other   | RELATES TO:                            |
| 5   |     | x          |          |   |   |   |          |                                 |               |                   |         |         | Camshafts                              |
| 7   | ~   |            |          |   |   |   |          | filling a filling and           |               |                   |         |         | Carburetors                            |
| 8   | _ 1 |            |          |   |   |   |          |                                 |               |                   | X       |         | Voltage Regulator                      |
| 9   |     |            |          |   |   |   | x        | and a second test speciality in |               |                   |         |         | Muffler                                |
| 12  |     | x          |          |   |   |   | x        |                                 |               |                   |         |         | Fuel Pumps                             |
| 14  | x   |            |          |   | x |   | x        | an bi takaté Mising             |               | hint - 10 marchin |         |         | PC Board                               |
| 15  |     |            |          |   |   |   |          | X                               |               |                   | x       |         | Sockets, Pins & Housings               |
| 21  |     |            |          |   |   | X | x        | X                               |               |                   | X       |         | Socket & Pin Tool-Nozzle Tip           |
| 23  |     |            |          |   |   |   |          | х                               |               |                   |         |         | Parts Manual                           |
| 30  |     | Х          |          |   |   |   |          |                                 |               |                   |         |         | Starter Motor                          |
| 32  |     |            | x        |   |   |   |          |                                 | •<br>:        |                   |         |         | Governor Spring                        |
| 33  | x   |            |          |   |   |   |          |                                 |               |                   |         |         | Short Block                            |
| 34  | x   | X          | L        |   |   |   | x        |                                 | L             | x                 |         |         | Camshaft Gear, Plate & Spacer          |
| 45  |     |            |          |   |   |   |          |                                 |               | x                 |         |         | Connecting Rods & Cylinder Studs       |
| 46  | x   |            |          |   |   |   |          |                                 |               |                   |         |         | Connecting Rods                        |
| 48  | x   |            |          |   |   |   |          |                                 | x             |                   |         |         | Short Blocks                           |
| 49  | x   |            |          |   |   |   | x        |                                 | Į             |                   |         |         | Carburetors, Snubbers & Circuit Boards |
| 51  |     |            |          |   |   |   |          | x                               |               |                   |         | AT,LT   | Exercise Clock                         |
| 53  | x   |            |          |   |   |   |          |                                 | 1             |                   |         |         | Carburetors                            |
| 54  | x   |            |          |   |   |   | x        |                                 | 1             |                   |         |         | Condensers                             |
| 55  |     |            |          |   |   |   |          |                                 |               |                   |         | DKD     | Exhaust System                         |
| 56_ |     |            |          |   |   |   | x        |                                 |               | x                 |         |         | Cylinder Heads                         |
| 57  | x   | _ <u>x</u> |          |   |   |   | x        |                                 |               |                   |         |         | Gear Case & Governor Arm               |
| 59  | x   |            | <u> </u> |   |   |   |          |                                 | x             |                   |         |         | Intake Manifold                        |
| 60  | x   | х          | x        | x | x | X | x        | х                               | x             | x                 | х       |         | New Model Designation System           |
| 61  |     |            |          |   |   |   | x        |                                 |               |                   |         |         | Rings, Piston                          |
| 63  | x   | х          | x        | x |   |   | x        |                                 | x             | x                 |         |         | Piston and Rings .040                  |
| 64  |     |            |          |   |   |   |          |                                 | Γ             |                   |         | RV Sets | Voltage Regulator                      |
| 65  | x   |            |          |   |   |   | <b>—</b> |                                 | T             |                   |         |         | Shortblocks – Spec C – Replacement     |
| 66  | x   |            |          | 1 |   |   |          |                                 | T             | 1                 |         |         | Shortblocks – Ingersoll – Special      |
| 67  | x   |            |          |   |   |   |          |                                 |               |                   |         |         | Rear Bearing Adapter                   |
| 68  | x   | x          |          | x |   |   | x        |                                 |               |                   |         |         | Gasket Kits – Overhaul                 |
| 70  | x   |            |          | ĺ |   |   |          |                                 | x             |                   |         |         | Piston/Ring Replacement Chart          |
| 71  | x   | <u> </u>   |          |   |   |   |          |                                 | x             | x                 |         |         | Shortblock S rvice Parts               |

#### **CURRENT SERVICE PARTS BULLETIN INDEX**



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# **Service Parts Bulletin**

-

Date: 6/21/84 Page 1 of 1 Bulletin No. 5

MODEL: CCK/CCKA

MANUAL: 927-0253

FICHE: 110

PAGE: A9

REFERENCE: 9

DESCRIPTION: CAMSHAFT

KEY 3 AND KEY 4 CAMSHAFTS MUST BE IDENTIFIED BY ADVANCER PIN DIAMETER, NOT BY SPEC LETTER.

P/N 105-0295 - 3/16" ADVANCER PIN DIAMETER

P/N 105-0234 - 1/8" ADVANCER PIN DIAMETER

# McGRAW+DISON



#### Service Parts Bulletin

Date: 6/22/84 Page 1 of 1 Bulletin No. 7

#### 'DD SERIES' CARBURETORS

BECAUSE OF DESIGN CHANGES, REPAIR PARTS ARE NOT ALWAYS INTERCHANGEABLE BETWEEN OLD AND NEW VERSIONS OF THE 'DD SERIES' CARBURETORS USED ON B SERIES ENGINES. IT IS NOT ALWAYS APPARENT WHICH CARBURETOR A CUSTOMER HAS BY USE OF SPEC LETTER ALONE, SO WE HAVE LISTED BELOW BY CARBURETOR MODEL NUMBER (STAMPED ON THE CARBURETOR I.D. PLATE) THE APPLICABLE REPAIR KIT, GASKET KIT, BODY GASKET, UPPER CARBURETOR BODY AND THROTTLE FLY.

| CARBURETOR   | CARBURETOR<br>MODEL NBR  | REPAIR<br>KIT                         | GASKET<br>KIT | BODY<br>GASKET | UPPER<br>BODY | THROTTLE<br>FLY |
|--------------|--|---------------------------------------|---------------|----------------|---------------|-----------------|
|              | ilinaan kanala kanala kanala kanala 11 juri 194 matala kanala kanala kanala kanala kanala kanala kanala kanala | der in die Angeren der Mitchellich "A |               |                |               |                 |
| 142-0531     | DD11R  |                                       |               | 142-0543       |               |                 |
| 142-0558     | DD12R  |                                       |               | 142-0543       |               |                 |
| 142-0638 Kit | DD13   | 142-0570                              | 142-0571      | 142-0572       | 142-0573      | 142-0538        |
| (142-0568)   |  |                                       |               |                |               |                 |
| 142-0660     | DD13A  | 142-0570                              | 142-0571      | 142-0572       | 142-0573      | 142-0538        |
| 142-0639 Kit | DD14   | 142-0592                              | 142-0591      | 142-0572       | 142-0573      | 142-0538        |
| (142-0569)   |  |                                       |               |                |               |                 |
| 142-0661     | DD14A  | 142-0592                              | 142-0591      | 142-0572       | 142-0573      | 142-0538        |
| 142-0640 Kit |  |                                       |               |                |               |                 |
| (142-0585)   | DD15   | 142-0570                              | 142-0571      | 142-0572       | 142-0573      | 142-0584        |
| 142-0662     | DD15A  | 142-0570                              | 142-0571      | 142-0572       | 142-0573      | 142-0584        |
| 142-0641 Kit | Construction of the second |                                       |               |                |               |                 |
| (142-0587)   | DD16   |                                       |               | 142-0572       |               |                 |
| 142-0663     | DD16A  | 142-0592                              | 142-0591      | 142-0572       | 142-0573      | 142-0584        |

NOTE: CONSULT THE APPLICABLE B SERIES ENGINE MANUAL AND USE THE CARBURETOR KIT OR CARBURETOR ONLY (LISTED IN PARENTHESIS) PART NUMBER IN THE FIRST COLUMN, TO OBTAIN SERVICE PARTS UNAFFECTED BY SPEC LETTER CUTOFF.

LISTED BELOW ARE THE KIT NUMBERS FOR COMPLETE REPLACEMENT OF OLD VERSIONS OF 'DD SERIES' CARBURETORS.

| CARBURETOR MODEL                       | REPLACEMENT ONAN NBR   |
|--|--|
| 2011R<br>DD12R<br>DD13<br>DD14<br>DD15 | 142-0662 (DD15A)<br>142-0663 (DD16A)<br>142-0660 (DD13A)<br>142-0661 (DD14A)<br>142-0662 (DD15A)<br>142-0663 (DD16A) |
| DD16                                   | 142-0003 (DDIOA)   |



## **Service Parts Bulletin**

Date: 9/4/84 Page 1 of 1 Bulletin No. 8

LARGE GENERATOR SETS (CLASS B)

To help identify the replacement voltage regulator for the 191-0688 alternator, use the following method:

Motorola Regulator Number ARF3016A order part number 191-0733 Motorola Regulator Number 8RF3022 order part number 191-1635



# Service Parts Bulletin

Date: Page of B

Bulletin No.

MODEL: 6, ONH POWER DRAWER

MUFFLER 155-1247 IS NOT AVAILABLE AS AN INDIVIDUAL PART.

THIS MUFFLER WAS USED ON 6.0 NH-1R/9000 AND 9500 POWER DRAWER RECREATIONAL GENERATOR SETS FOR TRAVCO AND GMC UNITS.

KIT 155-1961 IS REQUIRED FOR ALL TRAVCO INSTALLATIONS. KIT 155-1962 IS REQUIRED FOR ALL GMC INSTALLATIONS.

PLEASE REFER TO PRODUCT SUPPORT BULLETIN NO. 357 FOR INSTALLATION PROCEDURE.



#### Service Parts Bulletin

Date: 10/12/84 Page 1 of 1

Bulletin No. 12

MODEL: CCK & NH RV GENERATOR SETS

PRODUCT SUPPORT BULLETIN #209 ISSUED IN OCTOBER 1977 ANNOUNCED THE REPLACEMENT OF THE WALBRO FUEL PUMP (149-1304) WITH A FACET FUEL PUMP KIT (149-1553).

As most of the WALBORD fuel pumps have been replaced since the Announcement of PSB #209, the 149-1553 kit will no longer be available.

SHOULD REPLACEMENT OF A WALBRO FUEL PUMP STILL BE NECESSARY, YOU MUST ORDER INSTRUCTION SHEET E224 AND ALL THE PARTS LISTED BELOW.

| <u>P/N</u> | QTY | DESCRIPTION       |
|------------|-----|-------------------|
| 149-1828   | 1   | Fuel Pump (Facet) |
| 332-1506   | 1   | Splice Connector  |
| 502-0002   | 1   | Male Elbow        |
| 502-0196   | 1   | STREET ELBOW      |
| 502-0313   | 1   | Hose Elbow        |
| 503-0685   | 1   | Hose Clamp        |



qf

Page

Date: 5/3/88 Bulletin Ng.

Revised

With the RV and Marine season fast approaching, distributors and dealers may want to check stock on relay conversion kits for the discontinued 300-0859 PC board. If repair or replacement of this board is necessary, substitute the following relay-type control kits for specific applications:

RV models with Onan choke - order Kit #300-2026.

RV models with Sisson choke - order Kit #300-2027.

All Spec "E" and "F" MCCK models - order Kit #300-1796.

All other standard remote start models with Onan choke or no choke - order Kit #300-1884.

All other standard remote models with thermo-magnetic choke - order kit #300-1885.

This substitution does not apply to any home standby models.

Reference the following product support bulletins for additional background information.

PSB #268 (Dated 2/7/79) for MCCK models.

PSB #304 (Dated 1/16/80) for NH Spec "K" models only.

PSB #324 (Dated 8/10/80) for CCK and NH RV models.

PSB #345 (Dated 9/21/81) for Relay Conversion Wiring Diagram numbers.



#### Service Part<sup>-</sup> Bulletin

1

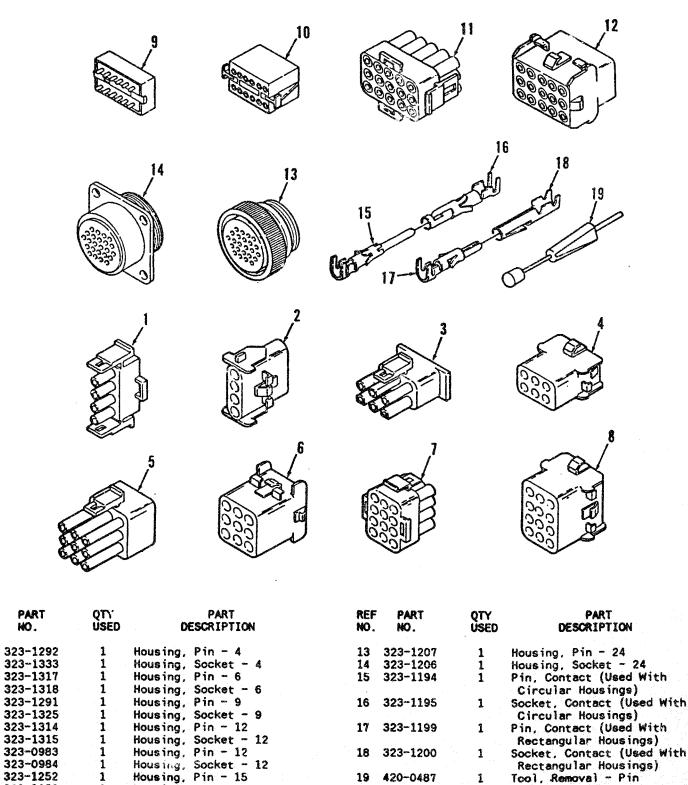
Date: 9/10/87 revised

)/87 Page 1 of

Bulletin No.

15

Below is a revised listing of common pins, sockets and housings for the pins and sockets that are used on transfer switches. Please put it with your parts manuals. Future printings of transfer switch parts manuals will include this information.



900-0450

323-1253

1

Housing, Socket - 15

REF

NO.

1

Ź

3

4

5

6

7

8

9

10

11

12



# Service Parts Bulletin

Date: 4/30/85 Page 1 of 1 Bulletin No. 21

1. WE NOW HAVE A TOOL FOR REMOVING PINS AND SOCKETS FROM THE HOUSINGS USED ON MANY OF OUR ELECTRICAL PRODUCTS. A PREVIOUS BULLETIN (SPB # 15) LISTS THE SOCKETS AND PINS AVAILABLE. THE TOOL PART NUMBER IS 420-0487. IT CAN BE ORDERED VIA THE USUAL PARTS ORDERING PRO-CEDURE.

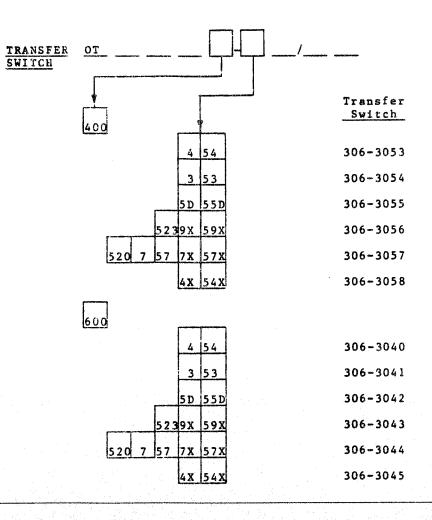


2. IT HAS BEEN BROUGHT TO OUR ATTENTION THAT A COPPER WASHER HAS BEEN PACKAGED WITH REPLACEMENT L SERIES DIESEL INJECTION NOZZLE TIPS. THIS COPPER WASHER SHOULD NOT BE USED IN L SERIES APPLICATIONS. CHECK YOUR EXISTING STOCK OF 147-0647 NOZZLE TIPS AND REMOVE THE COPPER WASHER PACKAGED IN THE BOX. DO NOT REMOVE THE NOZZLE OR VALVE BODY FROM THE PLASTIC TUBE. FOR NOZZLE TIP INSTALLATION PROCEDURES REFER TO SECTION 10 OF THE L DIESEL SERVICE MANUAL (934-0750).

# McGRAW-EDISON Onon Service Parts Bulletin Date: Page of Bulletin No. 8/6/85 1 1 23

OT II 400-600 SPEC F PARTS MANUAL 962-0212 (1-85) AND MICROFICHE CARD NUMBER 412 HAVE AN ERROR ON PAGE 3, GRID A6 MICROFICHE. THE TRANSFER SWITCHES FOR 600 AMP WERE ALL OFF BY ONE NUMBER (I.E. 306-3041 SHOULD BE 306-3040; 306-3042 SHOULD BE 306-3041, ETC.).

BELOW IS THE CORRECTED PARTS LIST. PARTS MANUAL WILL BE REVISED AND REISSUED. IF YOU HAVE ANY STOCK PLEASE DESTROY AND REORDER. MICRO-FICHE WILL BE REVISED FOR THE NEXT ISSUE.





Page 1 of 1 Date: **Bulletin No.** 5/1/86

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#### 191-0790 STARTER MOTOR

The 191-0790 starter motor has now become available on a last time build. Many internal service parts are not interchangeable between the four differant configurations of 191-0790 starters produced by the vendor. Listed below is a matrix which will aid you in identifying which starter motor a customer has on their engine and which internal service components to supply.

| <u>Starter Motor ID</u><br>Type: MX1.0/12GL<br>3 screw mtd. solenoid<br>Screw mtd. field coils<br>4½" Yoke length | <u>Clutch P/N</u><br>191-0744 (F-10) | <u>Brush &amp; Spring P/N</u><br>191–0757 Brush<br>191–0758 Spring (F–10) |
|---|--------------------------------------|---|
| Type: M-9224L<br>3 screw mtd. solenoid<br>Screw mtd. field coils<br>4½" Yoke length                               | 191-0744 (F-10)                      | 191–0757 Brush<br>191–0758 Spring (F–10)                                  |
| Type: MEA 09-0<br>3 screw mtd. solenoid<br>Screw mtd. field coils<br>3" Yoke length                               | 191-0744-01                          | 191-1005 Pos. Brush<br>191-1008 Neg. Brush<br>191-1007 Spring             |
| Type: MEA 09-0<br>2 screw mtd. solenoid<br>Rivet mtd. field coils<br>3" Yoke length                               | 191-0744-01                          | 191-1005 Pos. Brush<br>191-1008 Neg. Brush<br>191-1007 Spring             |

NOTE: Because a last time build of 191-0790 starter motors was made in 1986 by the vendor, the yoke assembly, fields coils, rear bracket assembly, armature and front bracket for the Type MEA-09-0 starter will not be available separately. Consult the parts manual for other service components not listed above.



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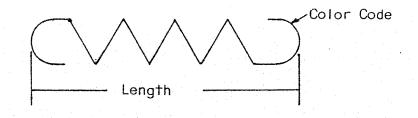
Bulletin No. 32

#### DKC & DKD GOVERNOR SPRINGS

To avoid confusion upon replacement of governor springs on DK series generator sets use the chart listed below. Type I governor is a flyball system, Type II governor is a flyweight system.

|             | Onan P/N   |      |        | 185-2427 | 185-2440 | 185-2466 | 185-2416  | 185-2304 |  |  |
|-------------|------------|------|--------|----------|----------|----------|-----------|----------|--|--|
|             | Color Code |      | Silver | Silver   | Lt. Blue | Blue     | Lt. Green |          |  |  |
|             |            | Len  | gth    | 32.5mm   | 50mm     | 32.5mm   | 50mm      | 50mm     |  |  |
| Model       | Gov.       | Spec | Hz     |          |          |          |           |          |  |  |
|             |            |      | 50     |          |          | X        |           |          |  |  |
|             | Туре<br>I  | A    | 60     | x        |          |          |           |          |  |  |
| DKC<br>MDKC |            |      | 50     |          | Х        |          |           |          |  |  |
|             | Type<br>II | A    | 60     |          | Х        |          |           |          |  |  |
|             |            |      |        |          | 50       | X        |           |          |  |  |
|             | Type<br>I  | A    | 60     |          |          | X        |           |          |  |  |
| DKD         |            |      | 50     |          | ×        |          |           |          |  |  |
| MDKD        |            | A    | 60     |          |          | •        | X         |          |  |  |
|             | Type<br>II |      | 50     |          |          |          |           | X        |  |  |
|             |            | В    |        |          |          |          |           | X        |  |  |

#### NOTE: The correct part number can be visually identified by the color coding marked on the end and the overall spring length (mm).





# THRU

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Date: 4/22/86 Page 1 of 2 Bulletin No.

#### BF SHORT BLOCKS

Effective April 1, 1986 all BF short blocks have been discontinued from production. Onan still has a small inventory of certain BF short blocks, but as this supply is exhausted, a comparable B43 short block will be substituted on all orders.

Listed below in column 1 are the part numbers of discontinued BF short blocks. Adjacent in column 2 are the replacement B43 short block part numbers if a substitute is available.

| BF       | B43            |
|----------|----------------|
| 110-1943 | No Replacement |
| 110-1975 | No Replacement |
| 110-2161 | 110-3118       |
| 110-2162 | 110-3118       |
| 110-2167 | 110-3406       |
| 110-2198 | 110-2637       |
| 110-2323 | 110-3118       |
| 110-2351 | No Replacement |
| 110-2357 | No Replacement |
| 110-2409 | No Replacement |
| 110-2423 | 110-3406       |
| 110-2427 | 110-3118       |
| 110-2430 | 110-3118       |
| 110-2503 | 110-3118       |
| 110-2523 | 110-3118       |
| 110-2528 | No Replacement |
| 110-2808 | 110-3118       |
| 110-2890 | 110-3118       |

Upon substitution of a B43 (3-1/4" Bore) short block in a BF application (3-1/8" Bore), always be sure to use B43 head gaskets P/N 110-2287 (Gasket Set 168-0153).

All replacement B43 short blocks listed above will include a top mounted pulse pump connection (capped), premium valve train (with intake valve seals), oil filter machining (cover plate installed), tapped and plugged mechanical fuel pump boss holes, six hole rear face (bearing plate), premium piston rings and no gearcase cover.

NOTE: The replacement B43 short blocks listed above will also now have the short block part number and the latest revision letter stamped on the serial number pad (eg. 110-3118 A). Also included will be a short block identification decal (adhesive backed) which should be affixed near the existing 'BF' nameplate for future service reference. For pistons, rings and connecting rods of B43 short blocks use parts manual 965-0258 or microfiche #106.



Date: 8/18/86 Page <sup>1</sup> of <sup>1</sup>

Bulletin No. 34

GOVERNOR FLYBALL SPACERS

All nylon governor flyball spacers in gasoline engines are pressed on to the camshaft gear hub in manufacturing with the use of an anerobic adhesive.

Because of inadequite field replacement procedures available for governor ball spacers, the following parts will <u>no</u> longer be available separately:

| Part Number | Description      |
|-------------|------------------|
| 105-0028    | Camshaft Gear    |
| 105-0030    | Camshaft Gear    |
| 105-0641    | Camshaft Gear    |
| 150-0077    | Gov. Ball Plate  |
| 150-1257    | Gov. Ball Spacer |
| 150-1510    | Gov. Ball Spacer |
| 150-2178    | Gov. Ball Spacer |

For service replacement of the camshaft gear, governor ball plate or governor ball spacer order the appropriate camshaft gear <u>assembly</u> as called out in the parts manual or microfiche.

NOTE: Submit a Service Parts Warranty (with a copy of this bulletin) and return all inventory of individual gears, plates and spacers by September 30, 1986.



Date: 2-15-87 Page 1 of 1

Bulletin No. 45

T260G Connecting Rods & Cylinder Studs

With the introduction of the T260G Spec F engines using steel connecting rods, all inventory of 114-0324 aluminum connecting rods (including undersize) will be obsolete upon depletion of Onan Service Parts inventory. After stock has been exhausted of 114-0324 aluminum rods, Spec A thru E T260G engines must be serviced with 114-0203 steel connecting rods (used in <u>pairs</u> to avoid vibration) along with the applicable 114-0188 bearing inserts. Refer to the T260G service manual 965-0760 for connecting rod installation procedures and clearances.

Also with the introduction of Spec F, interference fit cylinder head studs are no longer used. Listed below are the superceding stud part number and quantity required <u>per cylinder head.</u>

| 01d P/N  | New P/N  | Quantity | <u>Location</u> |
|----------|----------|----------|-----------------|
| 520-0945 | 520-0876 | 2        | Тор             |
| 520-0946 | 520-0918 | 4        | Middle          |
| 520-0947 | 20-0919  | 4        | Bottom          |

Refer to the T260G service manual 965-0760 for cylinder head torque procedure.

#### ER 12107



| Date:   | Page | of | Bulletin No. |
|---------|------|----|--------------|
| 2-15-87 | 1    | 1  | 46           |

B43 & B48 Connecting Rods

Onan has received reports of 114-0257 (B48) and 114-0300 (B43) connecting rods mispackaged. These rods are <u>not</u> interchangeable and can be identified by the chart below:

| Connecting Rod P/N   | Casting P/N (located on rod shank) |
|----------------------|------------------------------------|
| 114-0257,-10,-20,-30 | 170-3286 or 170-4105               |
| 114-0300,-10,-20,-30 | 170-3439                           |

Check all inventory and restock as necessary. This bulletin is intended only as an aid in identifying B series connecting rods and does <u>not</u> authorize any returns.



Date: 4/27/87 Page 1 of 1 Bulletin No. 48

#### **B & P SERIES SHORT BLOCKS**

Standardization efforts are being completed to use P Series (Performer) short blocks in place of B series short blocks. This plan will replace all 63 active B series engine and gen set short blocks with 22 P series short blocks, enabling Onan to respond with reduced lead times, lower cost and extended obsolete model coverage. This will <u>NOT</u> obsolete engine components as was done with BF pistons and ring sets on Service Parts Bulletin #33.

The only variables between standardized short blocks will become:

- Engine Displacement (43 or 48 C.I.D.)
- Crankshaft PTO Configuration (stub, taper, splinned, etc.)
- Special Rear Bearing Plate (SAE A, SAE B, etc.)

As a result, all standardized B and P short blocks will now include the following features:

- Oil Filter Machining (Cover plate installed for non-oil filtered engines)
- Premium Valve Train (including stem seals)
- Premium Piston Rings (for all applications)
- Starter Mounting Bosses (for P Series engines only)
- Valve Cover and Breather Components (P Series style)
- No Gearcase Cover (reduced cost not normally needed)
- Flywheel Key (for all flywheels including breaker-less ignition)
- Nameplate P/N 99-2369 (for future parts identification)
- Short Block P/N stamped on Serial No. Pad (a cross-reference matrix will be published at a later date)

Pay particular attention to the attached instruction sheet E-317 (shipped with all standardized short blocks), wherever changes exist which could affect the interchangeability of the new short block in the customers application.

As inventory is exhausted SPS's will be published, until then continue to use the current short block part number as published in the short block manual 932-0109.



Date: 7/25/87 Page 1 of 1

Bulletin No. 49

#### BGE AND NHE PRODUCT CHANGES

This bulletin lists various product changes and improvements to the BGE and NHE RV generator sets with implementation date or serial number cut-off whenever possible. Also listed are parts manual errors which have come to our attention since publication.

| Model & S/N Affected                                 | Old P/N & Description | New P/N & Description              |
|--|-----------------------|------------------------------------|
| NHE & NHEL   | 402-0562 Mount        | 402-0593 Snubber                   |
| J860843102 (Above Floor)<br>J860843450 (Under Floor) | 815-0598 Bolt         | 402-0597 Isolator<br>815-0657 Bolt |
| J860843450 (Under Floor)                             |                       | 815-0657 Bolt                      |

NOTE: The new style mount and snubber may be used only in the new style tray (403-2268 P/N did not change). The new style tray can be visually identified because of a change to eliptical (oval) mounting holes.

| Model & S/N Affected | Old P/N & Description | New P/N & Description |
|----------------------|-----------------------|-----------------------|
| BGE                  | 141-0926 Carburetor   | 146-0455 Carburetor   |

NHE

141-0926 Carburetor (Facet) 141-0929 Carburetor (Facet)

146-0455 Carburetor (Nikki) 146-0456 Carburetor (Nikki)

(See parts manuals for S/N cut-offs)

NOTE: Facet gasoline carburetors are no longer available and must be replaced with the appropriate Nikki carburetor. For Facet carburetor service components, refer to the parts manual.

| Model & S/N Affected   | Old P/N & Description   | New P/N & Description   |
|------------------------|---|---|
| BGE, BGEL, NHE, & NHEL | 300-2784 Circuit Board<br>300-2943 Circuit Board<br>321-0174 Fuse | 300-2784-01 Circuit Board<br>300-2943-01 Circuit Board<br>321-0298 Fuse |

NOTE: The 300-2784-01 circuit board should be used on <u>all</u> gasoline fuel BGE and NHE generator sets. The 300-2943-01 board should be used <u>only</u> on LP fuel BGEL and NHEL generator sets.

This bulletin is for informational purposes only and does not authorize any returns.



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The following is a list of SPS's changing the mechanical exerciser clock to the LCD exerciser clock. This is due to product improvement.

| <u>01d #</u>         |   | New #  |
|----------------------|---|--|
| 307-1102 Time Switch | AT, OT Spec A-C<br>OT Spec E-F 120V<br>208/240V<br>480V<br>600V | 300-3288 Clock Kit<br>300-3291 Clock Kit<br>300-3292 Clock Kit<br>300-3293 Clock Kit<br>300-3294 Clock Kit |
| 307-1103 Time Switch | AT, OT Spec A-C<br>OT Spec E-F                                  | 300-3288 Clock Kit<br>300-3292 Clock Kit   |
| 307-1104 Time Switch | AT, OT Spec A-C<br>OT Spec E-F 120V<br>208/240V<br>480V<br>600V | 300-3288 Clock Kit<br>300-3291 Clock Kit<br>300-3292 Clock Kit<br>300-3293 Clock Kit<br>300-3294 Clock Kit |
| 307-1105 Time Switch | AT, OT Spec A-C<br>OT Spec E-F                                  | 300-3288 Clock Kit<br>300-3292 Clock Kit   |
| 307-2177 Time Switch |   | 300-3289 Clock Kit   |
| 307-2178 Time Switch |   | 300-3289 Clock Kit   |
| 307-2179 Time Switch |   | 300-3290 Clock Kit   |
| 307-2180 Time Switch |   | 300-3290 Clock Kit   |
| 300-2202 Clock Kit   |   | 300-3291 Clock Kit   |
| 300-2203 Clock Kit   |   | 300-3292 Clock Kit   |
| 300-2204 Clock Kit   | 480V<br>600V  | 300-3293 Clock Kit<br>300-3294 Clock Kit   |
| 300-2206 Clock Kit   |   | 300-3291 Clock Kit   |
| 300-2207 Clock Kit   |   | 300-3292 Clock Kit   |
| 300-2208 Clock Kit   | 480V<br>600V  | 300–3293 Clock Kit<br>300–3294 Clock Kit   |
| 300-2813 Clock Kit   |   | 300-3289 Clock Kit   |
| 300-2814 Clock Kit   |   | 300-3290 Clock Kit   |
| 300-2815 Clock Kit   |   | 300-3289 Clock Kit   |
| 300-2816 Clock Kit   |   | 300-3289 Clock Kit   |
| 300-2817 Clock Kit   |   | 300-3290 Clock Kit   |
| 300-2818 Clock Kit   |   | 300-3289 Clock Kit   |
|                      |   |  |



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#### FACET REPLACEMENT CARBURETORS

The Nikki carburetor and fuel pump represent a significant product improvement over the present Facet "DD" carburetor/fuel pump combination. We have now released the conversion kits for replacement of Facet carburetors with Nikki Carburetors on B Series industrial engines.

In conjunction, we have also cost reduced the carburetor and fuel pump specifically for this program.

The replacement cost for a Facet carburetor (with integral pump) has risen to \$130.25, whereas the Nikki carburetor fuel pump conversion kits total \$95.00 suggested list.

All carburetor conversion kits include a Nikki fixed main jet carburetor, breather assembly, governor rod and air cleaner assembly similar to the B43G or B48G latest design. Remote air cleaner applications will not necessarily use all of the components contained in the carburetor conversion kit.

Use the chart below to obtain the applicable Nikki carburetor kit P/N by engine displacement (e.g. all B43 engines use 146-0464).

| Model | Carburetor Kit | Fuel Pump Kit |
|-------|----------------|---------------|
| BF    | 146-0464       | 146-0466      |
| B43   | 146-0464       | 146-0466      |
| B48   | 146-0465       | 146-0466      |

NOTE: The fuel pump kit is only necessary if the original Facet carburetor was equipped with an integral fuel pump.



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#### Bulletin No. 54

#### EMERALD CONDENSER CHANGE

Effective September 1987 the Emerald generator set (BGE and NHE) ignition condenser has been relocated from the ignition breaker box to the generator adapter. This will aid technicians in service replacement with less chance of condenser lead grounding and subsequent engine shutdown. For Emerald sets built prior to 9/87, the breaker box mounted ignition condenser should be serviced with the new 312-0256 condenser and relocated at the generator adapter location.

This bulletin is for informational purposes only.



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#### DKD MOBILE EXHAUST SYSTEMS

DKD mobile application (RV & Utility) generator sets have been shipped with two different exhaust mufflers. Early production sets had a muffler outlet diameter of 1-3/4" (0.D.) with later production sets having an outlet diameter of 1-1/4" (0.D.). Use the chart below to determine the correct replacement exhaust muffler, as no serial number cutoff is available.

| <u>Onan P/N</u> | Outlet Diameter | Total Overall Length |
|-----------------|-----------------|----------------------|
| 155-2314        | 1-3/4" O.D.     | 17"                  |
| 155-2068        | 1-1/4" O.D.     | 20"                  |

Note: The inlet diameter remains the same at 1-1/4" NPT.



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Bulletin No. 56

#### N & T260 CYLINDER HEADS

A limited supply of 110-3443 cylinder heads exist in the Central Parts Distribution Center. Upon depletion of this inventory, the 110-3549 cylinder head will be substituted. Mounting holes for attaching lifting brackets and air housings onto the 110-3443 cylinder head previously tapped will now only be cored on 110-3549 cylinder heads. The existing 5/16-18 HWH screws are not selftapping and must be replaced by 5/16-18 thread forming screws (P/N 815-0508).

It is <u>not</u> recommended to tap the cored holes and use the standard hardware as this will result in insufficient thread depth and an inability to hold torque.



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#### CCK, BF & N GEARCASE AND GOVERNOR ARM STANDARDIZATION

The gearcase designs using the <u>small</u> lower needle bearing (P/N 510-0008) and the stud type governor yoke (P/N 150-0236) have been discontinued from production. Listed below are the governor arm and shaft assemblies that use the small needle bearing, but can be replaced with a standardized arm and shaft assembly kit P/N 150-2262.

#### Governor Arm and Shaft Assy

150-0377 150-0762 150-1008 150-1200 150-1260 150-1286 150-1315

Replacement kit P/N 150-2262 is supplied with a 150-1188 governor shaft that utilizes the small lower needle bearing and the bolt-on type governor yoke (P/N 150-1187). The governor yoke must be installed with two 8-32 x 3/8 screws (furnished in kit) and sealed with Loctite No. 272 (not furnished in kit) or a similar anerobic adhesive and torqued to 30 in/lb.

The following governor arm and shaft assemblies will no longer be supplied by Onan and must be replaced with a complete gearcase assembly.

| Governor Arm and Shaft Assy | Replacement Gearcase |
|-----------------------------|----------------------|
| 150-0234                    | 103-0156             |
| 150-0575                    | 103-0141             |
| 150-0610                    | 103-0640             |
| 150-0657                    | 103-0195             |
| 150-0765                    | 103-0211             |
| 150-0789                    | 103-0222             |
| 150-1137                    | 103-0645             |
| 150-1221                    | 103-0320             |
| 150-1237                    | 103-0323             |
| 150-1258                    | 103-0328             |
| 150-1285                    | 103-0355             |
| 150-1375                    | 103-0417             |
| 150-1381                    | 103-0418             |
| 150-1404                    | 103-0416             |
| 150-1426                    | 103-0435             |

NOTE: A limited supply of 510-0008 needle bearing and 150-0236 governor yoke are still available from the Onan Parts Department.

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#### INTAKE MANIFOLD

Manifold part number 154-2666 is being replaced by 154-2719 for current production.

By using the new manifold, part number 154-2719, the parts listed below are no longer necessary.

(1) 154-1977 Adapter-Carb.
(1) 145-0438 Gasket-Intake
(2) 800-0023 Screw

(2) 850-0040 Lockwasher

The new manifold part number 154-2719 will be sold in kit number 541-0275. This kit consists of:

(1) 154-2719 Manifold-Intake
 (2) 800-0032 Screw-HHC
 (2) 740-1006 Flatwasher

Manifold kit number 541-0275 will be sold as replacements for all models listed below.

| BGA  |
|------|
| P216 |
| P218 |
| P220 |
|      |

On models not listed above, the old manifold number 154-2666 has been assigned a new part number, 154-2720. This new number (154-2720) will be sold only for service replacement of engines that DO NOT use a Nikki carb. or adapter spacer.

This should be implemented on July 1, 1988.

# THRU

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Revised 4/17/89

Beginning with April 1988 production, the modeling code designation for voltage, frequency and starting were changed. Some radical changes are shown below. Small generators, including RV sets, use letters instead of numbers in voltage

code field. Use existing Parts Manuals which are controlled by spec letter.

#### CURRENT MODEL IDENTIFICATION

6.5 NHE F J 13566 C

Voltage and

4 Wire

Frequency Code

J - 120/240 Volt,

Starting and Portability Code F - Stationary, Electric Start Remote

\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_

J Series complete model has too many identifying characters for the computer, therefore, the first letter of the double letter specification is dropped when going to the current modeling system. For all service parts purposes add the letter A between the spec number and the single spec letter shown to make the double spec letter, and use existing Parts Manuals.

#### CURRENT MODEL IDENTIFICATION

12 DJC FJ 14876D

The CCKB genset was also affected, since on 10.0 kw and below we only have room for three Alpha characters in the model. See below for new designation. Use CCKB Parts Manual.

#### CURRENT MODEL IDENTIFICATION

10 CCK AJ 1E

On the new 50 to 1500 kw gensets you will be seeing a change on Model where they have dropped the voltage code. The voltage will be a part of the specification number. There will be new parts manuals for these products. Transfer switch models were shortened to fit the computer. Here is one example

of what the new model looks like. Use appropriate OT or CT manuals per spec letters.

CURRENT MODEL IDENTIFICATION

OFCU 70 C/3101E

OLD MODEL IDENTIFICATION

OTBCA 70 4U/3101E

#### OLD MODEL IDENTIFICATION

6.5 NHE - 3C R / 12006 C Voltage and Frequency Code J - 120/240 Volt, 3C - 120/240 Volt 60 Hertz, 1 Phase, 60 Hertz, 1 Phase 4 Wire

------

Starting and Portability Code R - Remote Start

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10.0 CCKB-3CP/1E

OLD MODEL IDENTIFICATION

12.0 DJC-3CR/14876AD

OLD MODEL IDENTIFICATION



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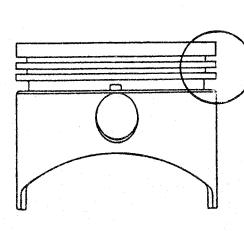
Effective as stock is depleted or by 1-1-90 the NH, "wide", 3/32 inch (.093) ring groove pistons have been discontinued from production and Service Parts. The NH, "wide" ring groove pistons must be superseded (SPS) by the T260G, "narrow", 5/64 inch (.078) ring groove pistons and must use T260G ring set. This is done in standard size and all the oversizes.

|            | NH "Wide"            | T260G "Narrow"    | MUST USE T260G          |
|------------|----------------------|-------------------|-------------------------|
| Size       | <u>Piston Kit</u>    | <u>Piston Kit</u> | <u> Piston Ring Kit</u> |
| Standard   | 112-0180-00 Obs. SPS | 112-0228-00       | 113-0203-00             |
| .005" O.S. | 112-0180-05 Obs. SPS | 112-0228-05       | 113-0203-05             |
| .010" O.S. | 112-0180-10 Obs. SPS | 112-0228-10       | 113-0203-10             |
| .020" O.S. | 112-0180-20 Obs. SPS | 112-0228-20       | 113-0203-20             |
| .030" O.S. | 112-0180-30 Obs. SPS | 112-0228-30       | 113-0203-30             |
| .040" O.S. | 112-0180-40 Obs. SPS | 112-0228-40       | 113-0203-40             |

The NH "wide" 3/32 inch (.093) pistor ring kits 113-0202-00 thru 113-0202-40 will be available to service NH units in the field with the "wide" piston ring grooves.

TZ60G "NARROW" PISTON RING GROOVES

5/64" COMPRESSION RING GROOVE WIDTH 5/64" COMPRESSION RING GROOVE WIDTH 5/64" COMPRESSION RING GROOVE WIDTH 5/64" OIL RING GROOVE WIDTH



900-0450

Note: Check inside of Piston for Onan Part Number.

Old piston with wide grooves - 112-0141 New piston with narrow grooves - 112-0227



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#### ALL ONAN ENGINES

Service Parts will <u>NOT</u> supply .040 oversized piston and piston ring kits after January 1, 1992.

Service Parts will maintain the following piston and piston ring kits:

Standard Size Some .005 Oversize .010 Oversize .020 Oversize .030 Oversize

Plans are under way to selectively remove some of the .005 oversize kits.

# Onan

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#### VOLTAGE REGULATORS

There appears to be considerable confusion as to which voltage regulator should be used with which generator set. In many cases, the wrong regulator is being used, which can lead to repeated regulator failures and in some cases generator failure.

Following is a list of voltage regulators and the generator sets they are used on.

|             | Regulator, Voltage |
|-------------|--------------------|
|             | BGD, NHD           |
|             | 60 Hertz           |
| 305-0809-05 | 1 Phase            |
| 305-0830-03 | 3 Phase            |
| 305-0809-03 | 50 Hertz           |
|             | BGE, NHE           |
| 305-0809-01 | 60 Hertz           |
| 305-0809-03 | 50 Hertz           |
| 305-0826    | BGM, NHM           |
|             | KV                 |
| 305-0809-02 | 60 Hertz           |
| 305-0830-02 | 50 Hertz           |
|             |                    |



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Subject: Spec. "C" Replacement Short Block for BF, B43, B48M with the Facet Model "DD" Carburetor.

> (This Service Parts Bulletin does not affect Ingersoll engines, Reference Service Parts Bulletin 66)

Current industrial engine short blocks are manufactured with the, "Crankcase Mounted Breather". Governor control rod will contact the Spec. "C" crankcase breather and must

be replaced with governor control rod kit (150-2460)

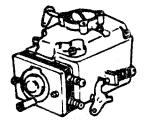


Current <u>Spec</u>. <u>"C"</u> Crankcase Mounted Breather

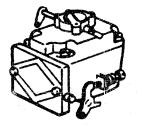


Earlier <u>Spec</u>. "B" Valve Box Breather

The crankcase breather contacts the integral fuel pump of the (Facet "DD") style carburetor/fuel pump. This interference  $\underline{IS}$  NOT noted with the adaptor plate used in place of the fuel pump.



Combination type Carburetor - Fuel Pump



Carburetor with adaptor plate similar to fuel pump

WHEN INSTALLING A SHORT BLOCK IN AN ENGINE WITH THE ABOVE TYPE COMBINATION CARBURETOR-FUEL PUMP (EXCLUDING INGERSOLL ENGINES) THE FOLLOWING MUST BE ORDERED:

| Gov. Control Rod Kit | Cover, Fuel Pump Kit | Fuel Pump Kit |
|----------------------|----------------------|---------------|
| 150-2460             | 149-1983             | 146-0466      |

NOTE: The governor control rod kit is needed with Facet "DD" carburetor with integral fuel pump or the adaptor plate.

The cover, fuel pump kit (149-1983) and the fuel pump kit (146-0466) are necessary with the original Facet "DD" carburetor/fuel pump. The carburetor equipped with the adaptor plate can be used with the Spec. "C" crankcase mounted breather.



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Subject: Short Block (110-3424-16) to Service Ingersoll <u>BF, B43M</u> and <u>B48M</u> Engines.

A special Spec B type short block (110-3424-16) with the valve box breather has been released to service Ingersoll engines that must use the Facet carburetor. The hood design of the Ingersoll tractor limits the space needed to install the replacement carburetor kit and crankcase mounted breather which is used with current Spec C short blocks.

This short block is sold only in 48 cubic inch and should be used to service both 43 and 48 cubic inch engines.

The 110-3424-16 short block should be used to service the following Ingersoll engines:

| BF            | MS/2434 | B43M-GA016/3419 | B48M-GA018/3631 |
|---------------|---------|-----------------|-----------------|
| $\mathbf{BF}$ | MS/2891 | B43M-GA016/3552 |                 |
| BF            | MS/3177 | B43M-GA016/3622 |                 |
| BF            | MS/3264 | B43M-GA016/4254 |                 |
|               |         |                 |                 |

Existing stock of 110-3419-04 (43 cubic inch, Spec. B) and 110-3420-04 (48 cubic inch, Spec B) short blocks may be used before superseding to 110-3424-16, but 110-3423-04 (43 cubic inch, Spec. C) and 110-3424-04 (48 cubic inch, Spec. C) short blocks <u>SHOULD</u> <u>NOT</u> be used in the above engines.

All BF replacement short blocks also require the 541-0370 exhaust adaptor kit.



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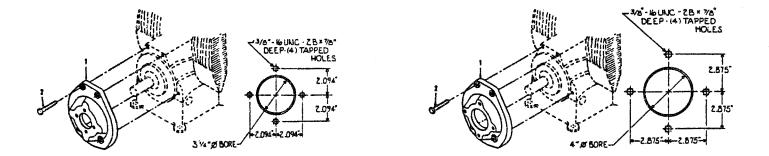
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SAE "A" and SAE "B" Hydraulic Pump Adapters for Subject: Performer, B, T, and NHC Engines.

Bearing plates machined for mounting hydraulic pumps with SAE type "A" or "B" mounting flanges are being replaced with a standard bearing plate and a bearing plate adapter kit. The new hydraulic pump adapters pilot onto the standard bearing plate, this will allow the use of a standard spline crankshaft engine or short block with varied types of hydraulic pumps by changing the hydraulic pump adapter.

> SAE Type "A" Hydraulic Pump Mounting Adapter Kit P/N 541-0344

SAE Type "B" Hydraulic Pump Mounting Adapter Kit P/N 541-0374



Note 1: Stamp or mark kit P/N on the enclosed label. Note 2: Apply sealant to threads of fasteners in the (2) lower holes. Note 3: Torque fasteners to 25-27 Lbf-ft, same as rear bearing plate.

Parts Department will supersede the pre-finished type bearing plates as follows:

HYDRAULIC PUMP ADAPTER KIT MUST BE ORDERED SEPARATELY

#### OLD BEARING PLATE

#### REPLACED BY

| Bearing Plate<br>P/N | Hydraulic Pump<br>Mounting Type | Bearing Plate<br>P/N   | Adapter Kit<br>P/N |
|----------------------|---------------------------------|------------------------|--------------------|
| 101-0437-01          | "A"                             | 101-0439-01            | 541-0344           |
| 101-0430-01          | "B"                             | 101-0439-01            | 541-0374           |
| Short Block In       | ndex (Dated 11-90) not          | es if "Adapter Kit" is | s needed and       |

the part number of the kit.



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Subject: Reduction in number of 168-XXXX Engine Gasket Kits.

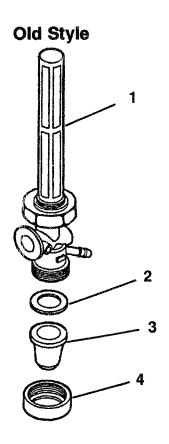
In a effort to reduce the number of gasket kits that must be stocked, many engine gasket kits have been consolidated. One gasket kit will service many different engines within a family of engines. Low production and special gaskets are noted by text message and must be order separately.

|   | HE PARTS BOOK T                  | GASKET KIT BY ORI<br>O DETERMINE IF SPE<br>RE NEEDED. |  |
|---|----------------------------------|---|--|
| Family of Engines E   | ngine Bore                       | Type of Kit   | P/N of Kit                                   |
| B-P Horizontal Industrial   | 3.25"                            | Overhaul  | 168-0187                                     |
| P Vertical Industrial   | 3.25"                            | Overhaul  | 168-0188                                     |
| Emerald and Marquis Gen-set   | 3.25"                            | Overhaul  | 168-0192                                     |
| All B-P Industrial and<br>Generator engines   | 3.25"                            | Carbon Removal  | 168-0189                                     |
| N-T260-P224 Industrial  | 3.625"                           | Overhaul  | 168-0191                                     |
| Emerald III, Marquis III  | 3.625"                           | Overhaul  | 168-0193                                     |
| All N-T260-P224 Industrial<br>and Generator engines   | 3.625"                           | Carbon Removal  | 168-0190                                     |
| Air Cooled CCK  | 3.25"                            | Overhaul<br>Carbon Removal                            | 168-0194<br>168-0095                         |
| Water Cooler CCK  | 3.25"                            | Overhaul<br>Carbon Removal                            | 168-0195<br>168-0200                         |
| Both Air & Water Cooled AJ  | 2.75"                            | Overhaul  | 168-0196                                     |
| 1 Cyl J&JD Air Cooled<br>1 Cyl J&JD Water Cooled  | 3.25"<br>3.25"                   | Overhaul<br>Overhaul                                  | 168-0085<br>168-0197                         |
| 2 Cyl J&JD Air Cooled<br>2 Cyl J&JD Air Cooled<br>2 Cyl J&JD Water Cooled<br>2 Cyl DJEM 5 kw DOD Gen-set    | 3.25"<br>3.50"<br>3.50"<br>3.50" | Overhaul<br>Overhaul<br>Overhaul<br>Overhaul          | 168-0198<br>168-0201<br>168-0202<br>168-0135 |
| 4 Cyl J&JD Air Cooled<br>4 Cyl J&JD Water Cooled<br>4 Cyl J&JD Water Cooled<br>4 Cyl DJEM 10 kw DOD Gen-set | 3.25"<br>3.25"<br>3.50"<br>3.50" | Overhaul<br>Overhaul<br>Overhaul<br>Overhaul          | 168-0199<br>168-0203<br>168-0204<br>168-0136 |



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#### **KQ Fuel Cock Styles**



New Style

| REF<br>NO. | PART<br>NO. | QTY<br>USED | PART<br>DESCRIPTION | REF<br>NO. | PART<br>NO. | QTY<br>USED | PART<br>DESCRIPTION |
|------------|-------------|-------------|---------------------|------------|-------------|-------------|---------------------|
| 1          | 185-4406    | 1           | Cock, Fuel          | 5          | 185-5323    | 1           | Cock, Fuel          |
| 2          | 185-4412    | 1           | Gasket              | 6          | 185-5325    | 1           | Gasket              |
| 3          | 185-4411    | 1           | Cup                 | 7          | 185-5324    | 1           | Cap                 |
| 4          | 185-4413    | 1           | Nut                 |            |             |             |                     |



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#### PISTON/RING REPLACEMENT CHART

| Original<br>Piston | Internal Piston<br>Marking | Replacement<br>Piston  | Replacement<br>Ring Set (See Note 3)<br>For Original Piston |
|--------------------|----------------------------|------------------------|---|
|                    |                            |                        |   |
| 112-0134           | 112-0134 (3-1/8"OD)        | See Note 1             | 113-0174  |
| 112-0158           | 112-0158 (3-9/16"OD)       | 112-0228 or 112-0259*  | 113-0203 or 113-0296  |
| 112-0180           | 112-0141 (3-9/16"OD)       | 112-0228 or 112-0259*  | 113-0165 or 113-0202 or 113-0312                            |
| 112-0181           | 112-0142 (3-1/4"D)         | 112-0181               | 113-0186 or 113-0189 or 113-0314                            |
| 112-0186           | 112-0163 (3-1/4"OD)        | 112-0264*              | 113-0189 or 113-0314  |
| 112-0228           | 112-0226 (3-9/16"OD)       | 112-0259*              | 113-0203 or 113-0296  |
| 112-0259           | 112-0270 (3-9/16"OD)       | 112-0259* (See Note 2) | Piston Kit Includes 113-0296 Ring Set                       |
| 112-0264           | 112-0262 (3-1/4"OD)        | 112-0264* (See Note 2) | Piston Kit Includes 113-0310 Ring Set                       |
| 112-0265           | 112-0266 (3-9/16"OD)       | 112-0265* (See Note 2) | Piston Kit Includes 113-0311 Ring Set                       |
|                    |                            |                        |   |

+ Pistons can be identified by cast number inside the piston.

\* These piston kits include ring set.

- Note 1: This piston is obsolete. Unit may be rebored to 3.25 or to B43 or P216 specs and use 112-0264. Piston/Ring kit along with head gasket 110-3181.
- Note 2: BG, B43, B48, P216, P218 and P220 can use 112–0264 Piston Ring Kit. N52, NH, NHA, NHB, NHC, P224 (Spec A–C) and T260 can use 112–0259 Piston Ring Kit. P224 (Spec E) uses 112–0265.
- Note 3: Since pistons are interchangeable in their bore size, it is advisable to look inside the piston to identify it's actual number and use chart to procur proper ring set.



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of

For several years we have been using P216, P218 and P220 Shortblocks on our older engines, such as BF, BG, B43 and B48. The Shortblock Index alerts you to possible kits needed to complete the conversion; however, we had not told you how to service the internal parts of these new shortblocks.

On these new Shortblocks you may have noticed that in the area where the serial number would be stamped on a new model, we have stamped the shortblock number (i.e., 110-3421-01).

NOTE: Our current Shortblocks do NOT show the 110-prefix. Only the last seven (7) digits are stamped. For example: 3421-01

Before servicing internal parts, have customer verify if the engine has been shortblocked. Listed below is a cross from Shortblock Number to Parts Manual/Fiche you can use to identify correct parts.

| Shortblock           | Model                 | <u>Manual No.</u> | <u>Fiche</u> |
|----------------------|-----------------------|-------------------|--------------|
| 110-3419-xx          | P216 (Spec A,B)       | 965-0263          | 134          |
| 110-3420-xx          | P218, P220 (Spec A,B) | 965-0263          | 134          |
| 110-3421-01 thru -10 | P224 (Spec A-C)       | 965-0266          | 136          |
| 110-3421-11 thru     | P224 (Spec D, E)      | 965-0266          | 136          |
| 110-3423-xx          | P216 (Spec C)         | 9650263           | 134          |
| 110-3424-xx          | P218, P220 (Spec C)   | 965-0263          | 134          |
| 110-3823-xx          | P216 (Spec D)         | 965-0263          | 134          |
| 110-3824-xx          | P218,P220 (Spec D)    | 965-0263          | 134          |