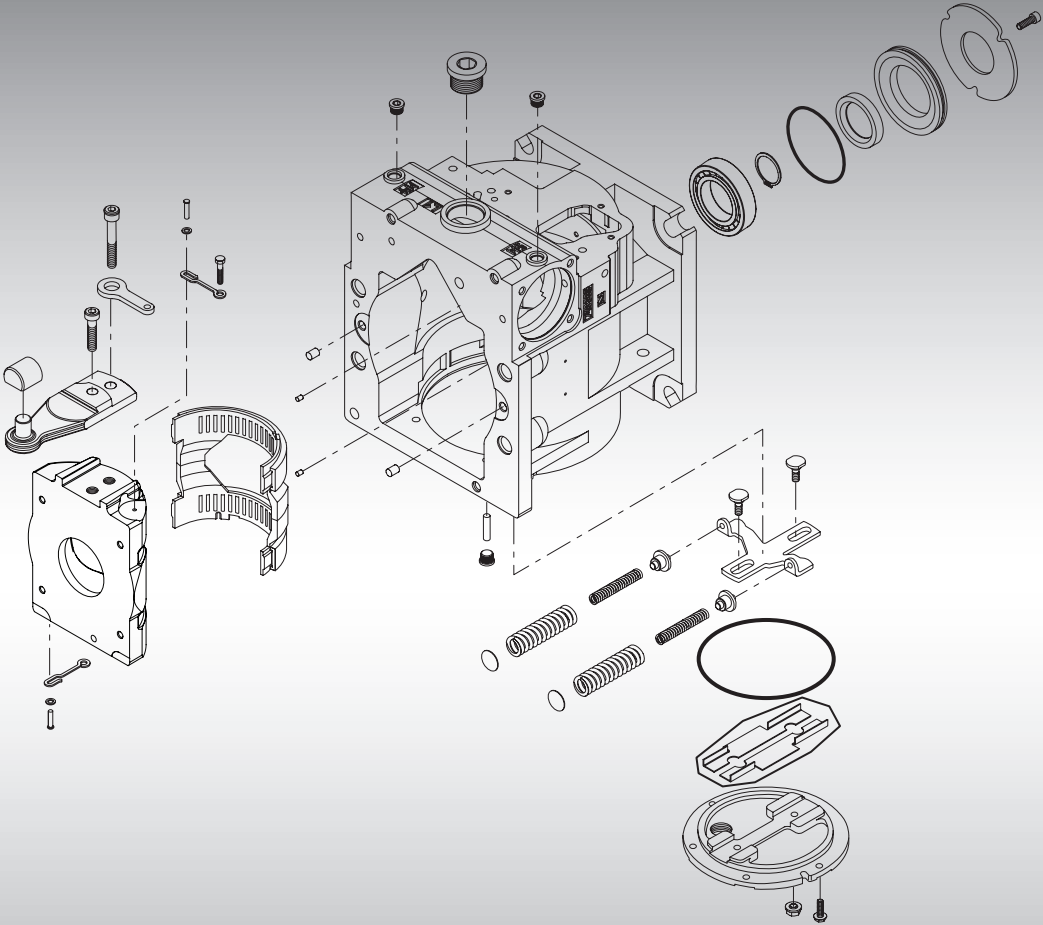




Parts Manual

Series 90

250cc Axial Piston Pump







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General information

Service parts identification

The following information and procedure is used to identify the module group, item number, manufacture date, part number, and part name of the parts included in the Series 90, 250 cc variable displacement pumps.

The parts listed include all parts which may be used when performing either “Minor Repairs”, “Major Repairs” or “Conversions” on the Series 90, 250 cc pump.

Nameplate

Each unit will have a nameplate affixed to the housing. The nameplate will include the following information.

Model Number

The Sauer-Danfoss model number is used by the factory in manufacturing. On repeat orders, a complete unit can be ordered by the model number.

Model Code

The Sauer-Danfoss model code completely defines the specific unit and must be used when ordering parts to service this product.

Serial Number

The Sauer-Danfoss serial number is used to identify the manufacture date and the unit sequence in the build. The serial number is also used to identify the units warranty time period.

The letter code indicates the location of original manufacture (assembly). “A” indicates the unit was originally assembled in Ames, Iowa, USA. “N” indicates the unit was originally assembled in Neumunster, Germany.

The first number (2 digits) indicates the year of manufacture. (“01” would indicate the unit was manufactured in 2001)

The second number (2 digits) indicates the calendar week of manufacture.

The third number (5 digits) is a sequential number used to identify a specific unit.





General information

Date code

The date code is defined as the year and week of manufacture. The same item number may list more than one part number. This indicates that there is more than one configuration for that item number. You will see that there are different date codes for the different part numbers. Find the date code of your unit from the nameplate to determine which service part number you need to order.

EXAMPLE: The service part desired is Item E10

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-------------|--------------------------|--------------------|
| 80 | E10 | 92-19 | | 746107 | Side cover | 1 |
| | G30 | 89-41 | 92-18 | 340133 | Side cover (SB-1992-003) | 1 |

All units using this order code with a date code of 89-41 and up to and including 92-18, must use part number "340133". All units with a date code of 92-19 and newer must use part number "746107."

Service bulletins

A Service Bulletin Number (SB-____-____) may follow the "Part Name" of the part you desire. You must read that Service Bulletin prior to ordering that part. The information contained in these Service Bulletins, as of the print date of this bulletin, are included at the end of this manual. Service Bulletins contain more detailed information such as interchangeability, what additional parts are involved, etc. It is suggested that you add additional Service Bulletins to this manual as you receive them.

Procedure to identify a part

General

The modular design of Series 90 units results in a simplified service parts list and part number identification procedure.

The same item numbers are used for same part names on all units within a product type. (Example: The lip seal - Item L40 has the same item number on all pumps.)

A part number that has another number following it in parentheses is done to make this a world wide manual. The first number is sold in Germany. The number in parentheses is sold in the United States. (Example: 001149 (9004201-6200), customers would order 9004201-6200 if ordering the part in the United States.)

Example of a Part Identification

The nameplate on a Series 90 pump has an Order Code of 90L250 KA 1 BC 80 T 4 C8 K 03 NNN 42 42 24. Use the following procedures to determine the part number of the drive shaft used on this pump.

1) Referring to the input shaft module in the Order Code (see page 7), the input shaft option for this pump is identified by the code "C8. (90L250 KA 1 BC 80 T 4 **C8** K 03 NNN 42 42 24)

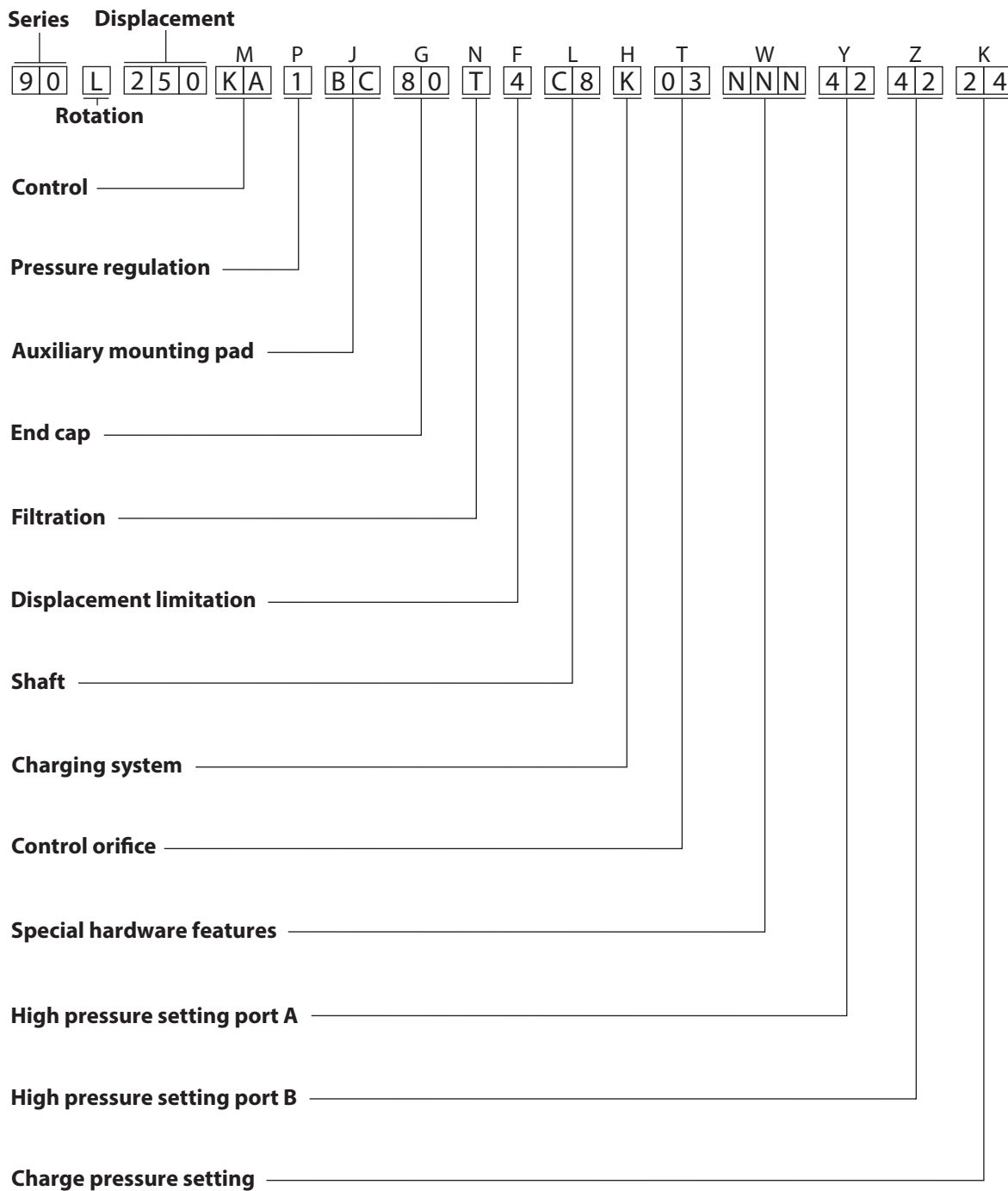
2) Referring to the Service Parts List, find the shaft group. Next find the order code that relates to this unit, which is "C8". The shaft is found to be item L100 and part number 504338.



Notes



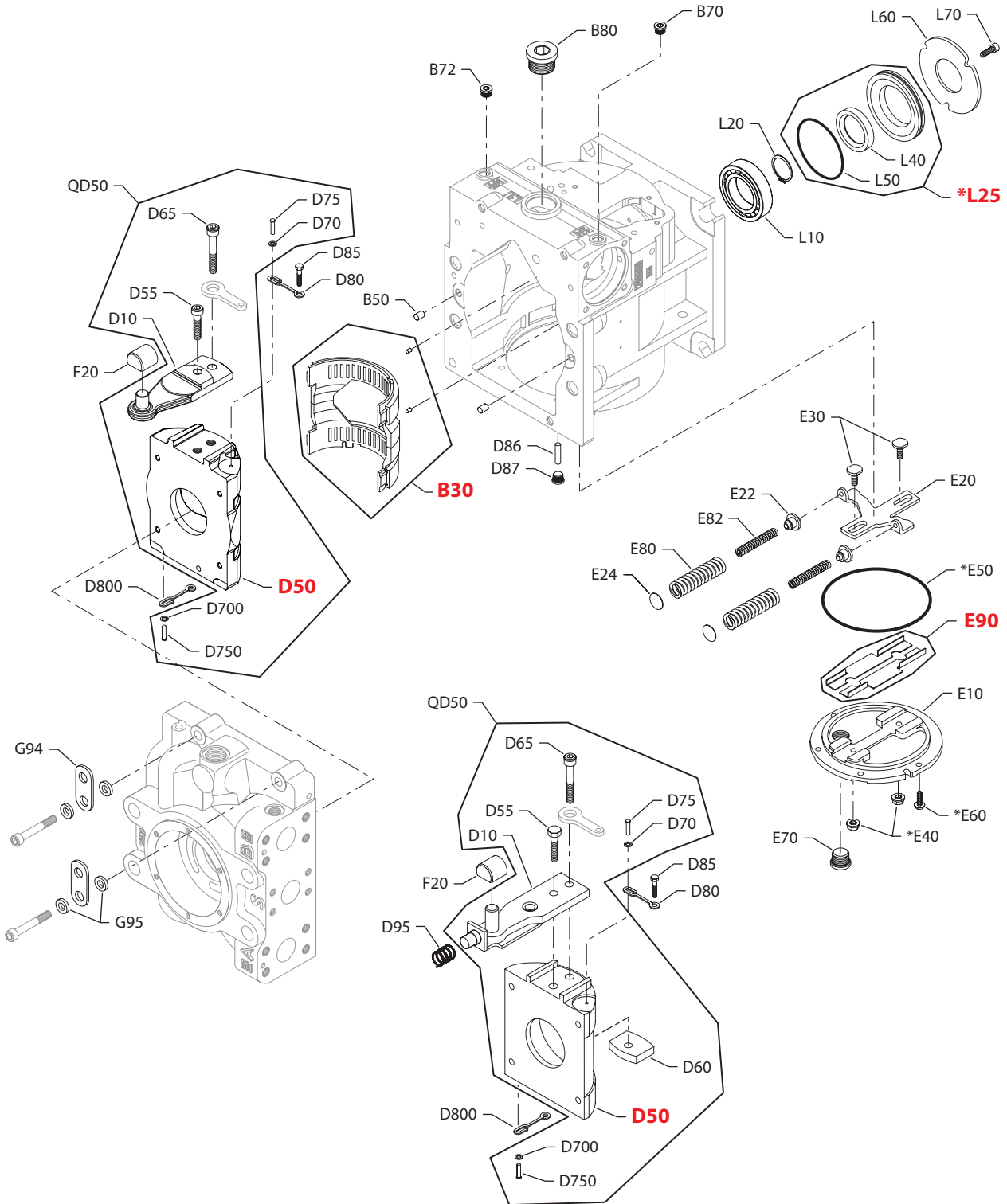
Order Code



P108 522E



Variable displacement pump



Swashplate design
prior to 11-40

E100 090E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

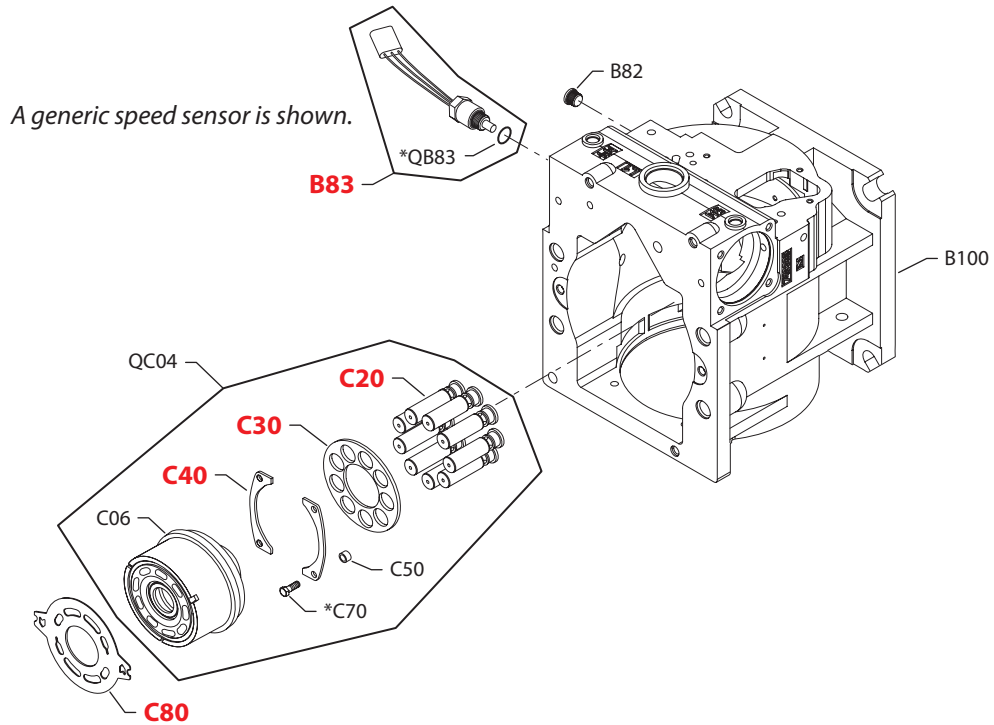

Variable displacement pump
Common parts

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-----------------------|-------------------------------------|--------------------|
| | B30 | 95-28 | | 746313 | Cradle bearing assembly | 1 |
| | B50 | 95-28 | | 9004800-3708 | Pin | 2 |
| | B70 | 95-28 | | 140644 | Plug assembly | 1 |
| | B72 | 95-28 | | 140644 | Plug assembly | 1 |
| | B80 | 95-28 | | 676734 (9005110-9500) | Plug assembly | 1 |
| | D10 | 11-40 | | 11061195 | Servo arm assembly | 1 |
| | D10 | 95-28 | 11-39 | 746339 | Servo arm assembly (SB-2011-032) | 1 |
| | D50 | 11-40 | | 11088847 | Swashplate | 1 |
| | D50 | 95-28 | 11-39 | 521428 | Swashplate | 1 |
| | D55 | 11-40 | | 519150 | Screw, socket head | 1 |
| | D55 | 95-28 | 11-39 | 746362 | Screw, hex head (SB-2011-032) | 1 |
| | D60 | 95-28 | 11-39 | 745703 | Swashplate guide (SB-2011-032) | 1 |
| | D65 | 95-28 | | 504494 | Screw | 1 |
| | D70 | 95-28 | | 127464 | Washer | 1 |
| | D75 | 95-28 | | 333369 | Spiral head pin | 1 |
| | D80 | 95-28 | | 700948 | Cage locator link | 1 |
| | D85 | 95-28 | | 500449 | Screw | 1 |
| | D86 | 95-28 | | 770594 | Pin | 1 |
| | D87 | 95-28 | | 11040532 | Plug assembly | 1 |
| | D95 | 95-28 | 11-39 | 746396 | Spring (SB-2011-032) | 1 |
| | D700 | 95-28 | | 127464 | Washer | 1 |
| | D750 | 95-28 | | 333369 | Spiral head pin | 1 |
| | D800 | 95-28 | | 700948 | Cage locator link | 1 |
| | E10 | 96-08 | | 501579 | Side cover (SB-1996-004) | 1 |
| | E20 | 95-28 | | 746420 | Leveler | 1 |
| | E22 | 95-28 | | 746438 | Spring seat | 2 |
| | E24 | 95-28 | | 359067 | Shim | 2 |
| | E30 | 97-08 | | 11056592 | Guide post (SB-1996-004) | 2 |
| | E40 | 95-28 | | 042432 | Seal nut | 2 |
| | E50 | 95-28 | | 517380 | O-ring | 1 |
| | E60 | 95-28 | | 517231 | Screw | 6 |
| | E70 | 95-28 | | 676734 (9005110-9500) | Plug assembly | 1 |
| | E80 | 95-28 | | 746453 | Spring | 2 |
| | E82 | 95-28 | | 755553 | Spring | 2 |
| | E90 | 96-08 | | 513891 | Insert assembly (SB-1996-004) | 1 |
| | F20 | 95-28 | | 11116308 | Slider block | 1 |
| | G94 | 95-28 | | 8800565 | Lifting bracket | 2 |
| | G95 | 95-28 | | 505479 | Washer | 4 |
| | L10 | 95-28 | | 11018485 | Roller bearing | 1 |
| | L20 | 95-28 | | 392233 | Retaining ring | 1 |
| | L25 | 95-28 | | 11053971 | Seal carrier assembly (SB-2012-039) | 1 |
| | L40 | 12-17 | | 519021 | Lip seal (SB-2012-039) | 1 |
| | L40 | 95-28 | 12-16 | 9008000-0114 | Lip seal | 1 |
| | L50 | 95-28 | | 509353 | O-ring | 1 |
| | L60 | 95-28 | | 516769 | Retainer plate | 1 |
| | L70 | 95-28 | | 009159 | Screw | 3 |
| | QD50 | 11-40 | | 11097784 | Swashplate kit (SB-2011-032) | 1 |
| | QD50 | 94-20 | 11-39 | 11107094 | Swashplate kit | 1 |

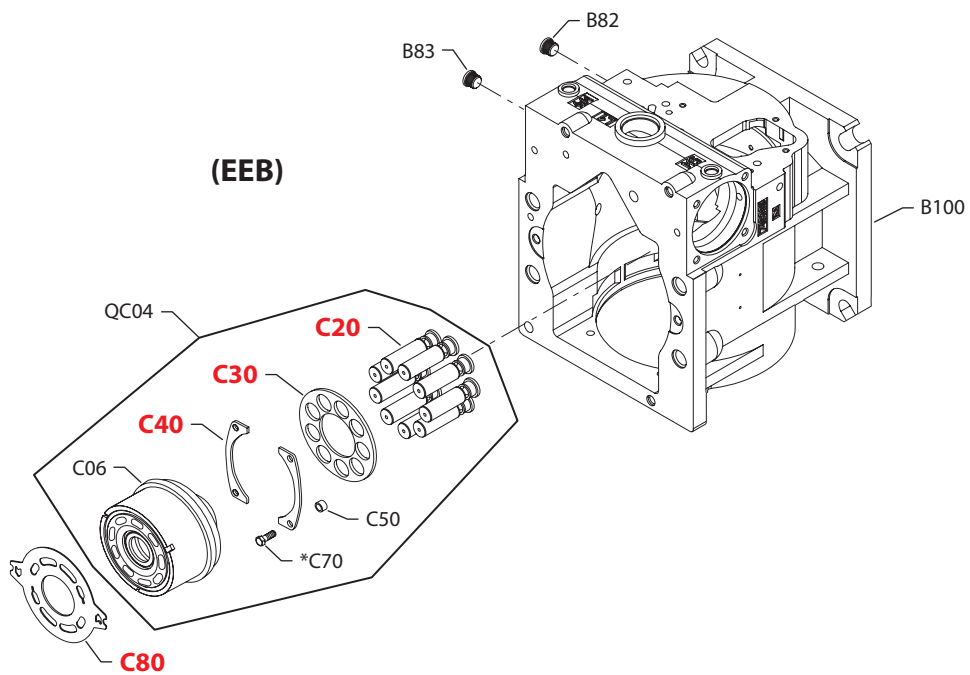


Variable displacement pump

(EDI & EFI)



(EEB)



E100 104E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

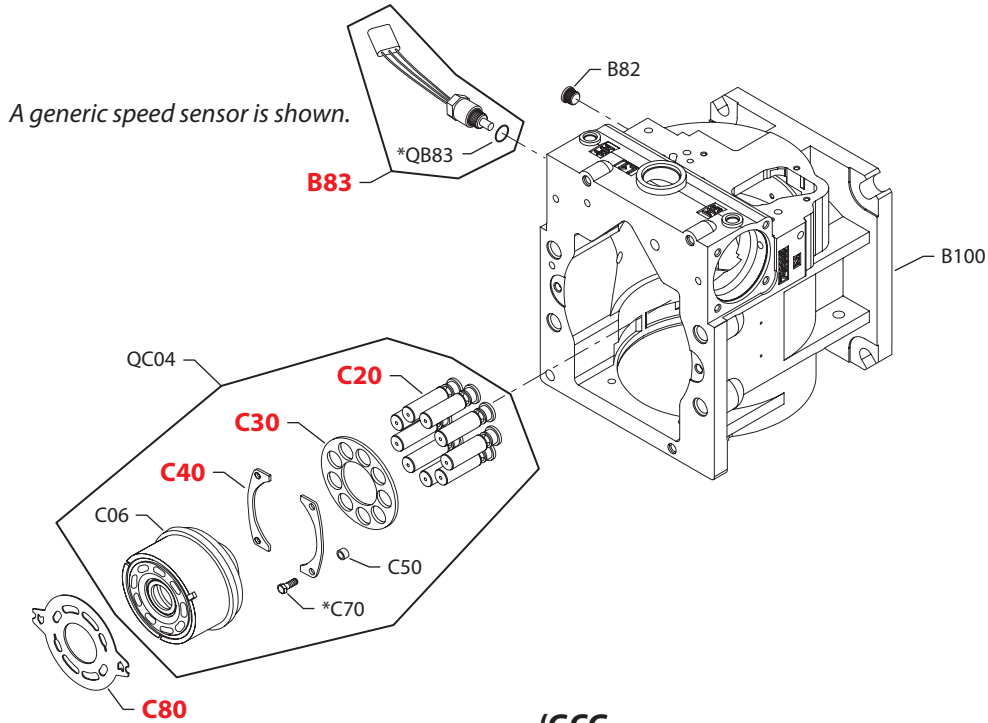

Variable displacement pump
Special hardware

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|------|------------|----------|-----------------------|---|--------------------|---|
| EDI | B82 | 00-29 | | 140644 | Plug assembly | 1 | |
| | B83 | 00-29 | | KPPG15408 | Speed sensor | 1 | |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 | |
| | B100 | 00-29 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| | C06 | 00-29 | | 519889 | Cylinder block assembly with speed ring | 1 | |
| | C20 | 00-29 | | 504501 | Piston/slipper assembly | 9 | |
| | C30 | 00-29 | | 11067354 | Slipper guide | 1 | |
| | C40 | 00-29 | | 504377 | Slipper guide bearing | 2 | |
| | C50 | 00-29 | | 504378 | Spacer | 4 | |
| | C70 | 00-29 | | 308643 | Screw | 4 | |
| | C80 | 00-29 | | 504278 | Valve plate, CCW, 90L250 | 1 | |
| | C80 | 00-29 | | 504287 | Valve plate, CW, 90R250 | 1 | |
| | QB83 | 00-29 | | 085043 (9004201-3700) | O-ring | 1 | |
| | QC04 | 00-29 | | 11097868 | Cylinder block kit with speed ring | 1 | |
| EEB | B82 | 10-34 | | 140644 | Plug assembly | 1 | |
| | B83 | 10-34 | | 140644 | Plug assembly | 1 | |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 | |
| | B100 | 10-34 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| | C06 | 10-34 | | 519889 | Cylinder block assembly | 1 | |
| | C20 | 10-34 | | 504501 | Piston/slipper assembly | 9 | |
| | C30 | 10-34 | | 11067354 | Slipper guide | 1 | |
| | C40 | 10-34 | | 504377 | Slipper guide bearing | 2 | |
| | C50 | 10-34 | | 504378 | Spacer | 4 | |
| | C70 | 10-34 | | 308643 | Screw | 4 | |
| | C80 | 10-34 | | 507346 | Valve plate | 1 | |
| | QC04 | 10-34 | | 11097868 | Cylinder block kit | 1 | |
| | EFI | B82 | 00-07 | | 140644 | Plug assembly | 1 |
| | | B83 | 99-20 | | KPPG156 | Speed sensor | 1 |
| B100 | | 11-40 | | 11088644 | Housing assembly | 1 | |
| B100 | | 00-07 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| C06 | | 99-20 | | 519889 | Cylinder block assembly | 1 | |
| C20 | | 99-20 | | 504501 | Piston/slipper assembly | 9 | |
| C30 | | 99-20 | | 11067354 | Slipper guide | 1 | |
| C40 | | 99-20 | | 504377 | Slipper guide bearing | 2 | |
| C50 | | 99-20 | | 504378 | Spacer | 4 | |
| C70 | | 99-20 | | 308643 | Screw | 4 | |
| C80 | | 99-20 | | 504278 | Valve plate, CCW, 90L250 | 1 | |
| C80 | | 99-20 | | 504287 | Valve plate, CW, 90R250 | 1 | |
| QB83 | | 99-20 | | 085043 (9004201-3700) | O-ring | 1 | |
| QC04 | | 99-20 | | 11097868 | Cylinder block kit | 1 | |

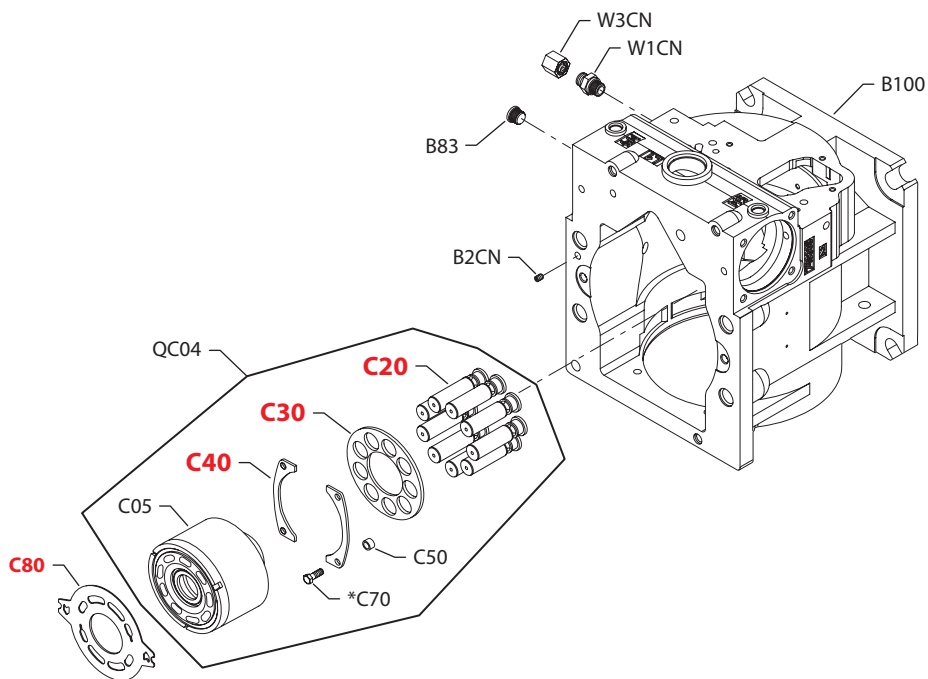


Variable displacement pump

(EFN & EHA)



(GCG)



E101 791E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

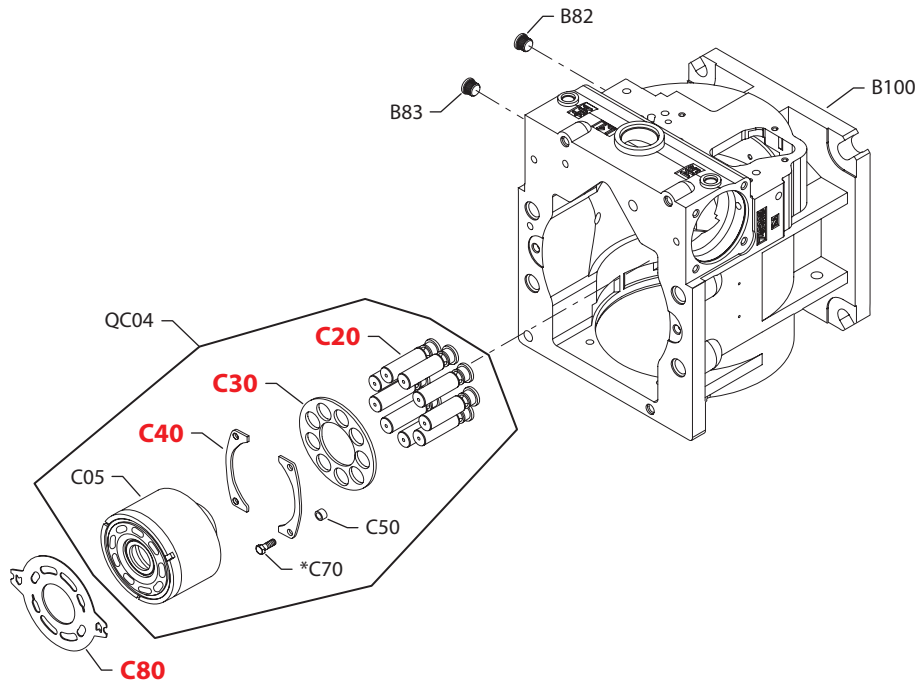

Variable displacement pump
Special hardware

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|------|------------|----------|-----------------------|---|--------------------|---|
| EFN | B82 | 01-34 | | 140644 | Plug assembly | 1 | |
| | B83 | 01-34 | | KPPG136 | Speed sensor | 1 | |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 | |
| | B100 | 01-34 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| | C06 | 01-34 | | 519889 | Cylinder block assembly with speed ring | 1 | |
| | C20 | 01-34 | | 504501 | Piston/slipper assembly | 9 | |
| | C30 | 01-34 | | 11067354 | Slipper guide | 1 | |
| | C40 | 01-34 | | 504377 | Slipper guide bearing | 2 | |
| | C50 | 01-34 | | 504378 | Spacer | 4 | |
| | C70 | 01-34 | | 308643 | Screw | 4 | |
| | C80 | 01-34 | | 504278 | Valve plate, CCW, 90L250 | 1 | |
| | C80 | 01-34 | | 504287 | Valve plate, CW, 90R250 | 1 | |
| | QB83 | 01-34 | | 085043 (9004201-3700) | O-ring | 1 | |
| | QC04 | 01-34 | | 11097868 | Cylinder block kit with speed ring | 1 | |
| | EHA | B82 | 06-27 | | 140644 | Plug assembly | 1 |
| B83 | | 06-27 | | KPPG16408 | Speed sensor | 1 | |
| B100 | | 11-40 | | 11088644 | Housing assembly | 1 | |
| B100 | | 06-27 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| C06 | | 06-27 | | 519889 | Cylinder block assembly with speed ring | 1 | |
| C20 | | 06-27 | | 504501 | Piston/slipper assembly | 9 | |
| C30 | | 06-27 | | 11067354 | Slipper guide | 1 | |
| C40 | | 06-27 | | 504377 | Slipper guide bearing | 2 | |
| C50 | | 06-27 | | 504378 | Spacer | 4 | |
| C70 | | 06-27 | | 308643 | Screw | 4 | |
| C80 | | 06-27 | | 507346 | Valve plate | 1 | |
| QB83 | | 06-27 | | 085043 (9004201-3700) | O-ring | 1 | |
| QC04 | | 06-27 | | 11097868 | Cylinder block kit with speed ring | 1 | |
| GCG | | B2CN | 05-06 | | 042465 | Set screw | 1 |
| | | B83 | 05-06 | | 140644 | Plug assembly | 1 |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 | |
| | B100 | 05-06 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| | C05 | 05-06 | | 11147681 | Cylinder block assembly | 1 | |
| | C20 | 05-06 | | 504501 | Piston/slipper assembly | 9 | |
| | C30 | 05-06 | | 11067354 | Slipper guide | 1 | |
| | C40 | 05-06 | | 504377 | Slipper guide bearing | 2 | |
| | C50 | 05-06 | | 504378 | Spacer | 4 | |
| | C70 | 05-06 | | 308643 | Screw | 4 | |
| | C80 | 05-06 | | 507346 | Valve plate | 1 | |
| | QC04 | 05-06 | | 519279 | Cylinder block kit | 1 | |
| | W1CN | 05-06 | | 723726 | Connector | 1 | |
| | W3CN | 05-06 | | 574095 | Cap | 1 | |



Variable displacement pump

(GCP, GCX & GLA)



E101 799E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

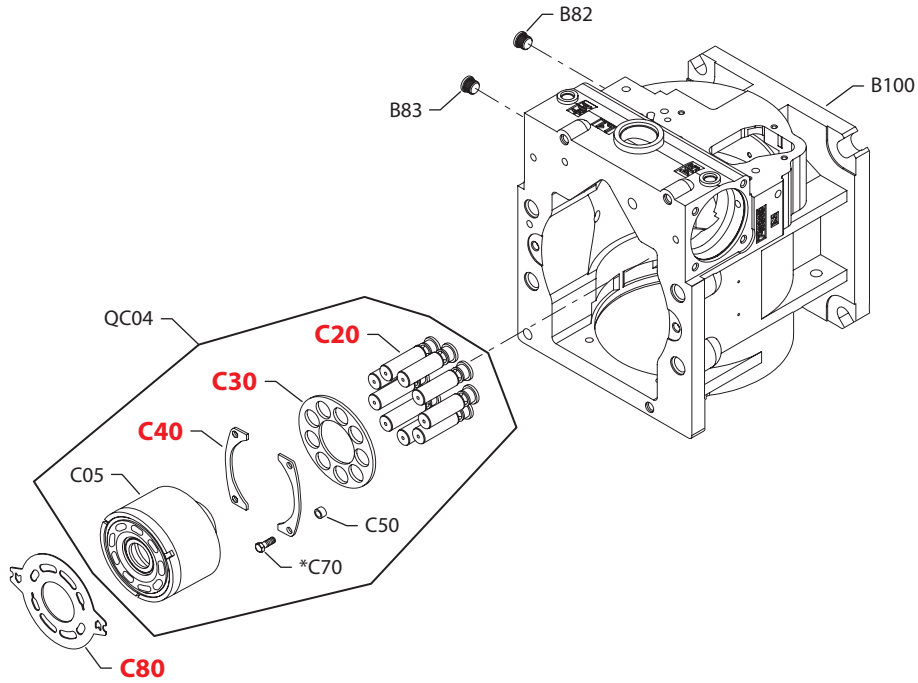

Variable displacement pump
Special hardware

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|------|------------|----------|-------------|--------------------------------|--------------------|---|
| GCP | B82 | 00-07 | | 140644 | Plug assembly | 1 | |
| | B83 | 95-28 | | 140644 | Plug assembly | 1 | |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 | |
| | B100 | 00-07 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| | C05 | 95-28 | | 11147681 | Cylinder block assembly | 1 | |
| | C20 | 95-28 | | 504501 | Piston/slipper assembly | 9 | |
| | C30 | 95-28 | | 11067354 | Slipper guide | 1 | |
| | C40 | 95-28 | | 504377 | Slipper guide bearing | 2 | |
| | C50 | 95-28 | | 504378 | Spacer | 4 | |
| | C70 | 95-28 | | 308643 | Screw | 4 | |
| | C80 | 95-28 | | 507346 | Valve plate | 1 | |
| | QC04 | 95-28 | | 519279 | Cylinder block kit | 1 | |
| | GCX | B82 | 00-38 | | 140644 | Plug assembly | 1 |
| | | B83 | 00-38 | | 140644 | Plug assembly | 1 |
| B100 | | 11-40 | | 11088644 | Housing assembly | 1 | |
| B100 | | 00-38 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| C05 | | 00-38 | | 11147681 | Cylinder block assembly | 1 | |
| C20 | | 00-38 | | 504501 | Piston/slipper assembly | 9 | |
| C30 | | 00-38 | | 11067354 | Slipper guide | 1 | |
| C40 | | 00-38 | | 504377 | Slipper guide bearing | 2 | |
| C50 | | 00-38 | | 504378 | Spacer | 4 | |
| C70 | | 00-38 | | 308643 | Screw | 4 | |
| C80 | | 00-38 | | 507346 | Valve plate | 1 | |
| QC04 | | 00-38 | | 519279 | Cylinder block kit | 1 | |
| GLA | | B82 | 00-07 | | 140644 | Plug assembly | 1 |
| | | B83 | 98-25 | | 140644 | Plug assembly | 1 |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 | |
| | B100 | 00-07 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 | |
| | C05 | 98-25 | | 11147681 | Cylinder block assembly | 1 | |
| | C20 | 98-25 | | 504501 | Piston/slipper assembly | 9 | |
| | C30 | 98-25 | | 11067354 | Slipper guide | 1 | |
| | C40 | 98-25 | | 504377 | Slipper guide bearing | 2 | |
| | C50 | 98-25 | | 504378 | Spacer | 4 | |
| | C70 | 98-25 | | 308643 | Screw | 4 | |
| | C80 | 00-29 | | 504278 | Valve plate, CCW, 90L250 | 1 | |
| | C80 | 00-29 | | 504287 | Valve plate, CW, 90R250 | 1 | |
| | QC04 | 98-25 | | 519279 | Cylinder block kit | 1 | |



Variable displacement pump

(NHP, NNA & NNN)



E101 799E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

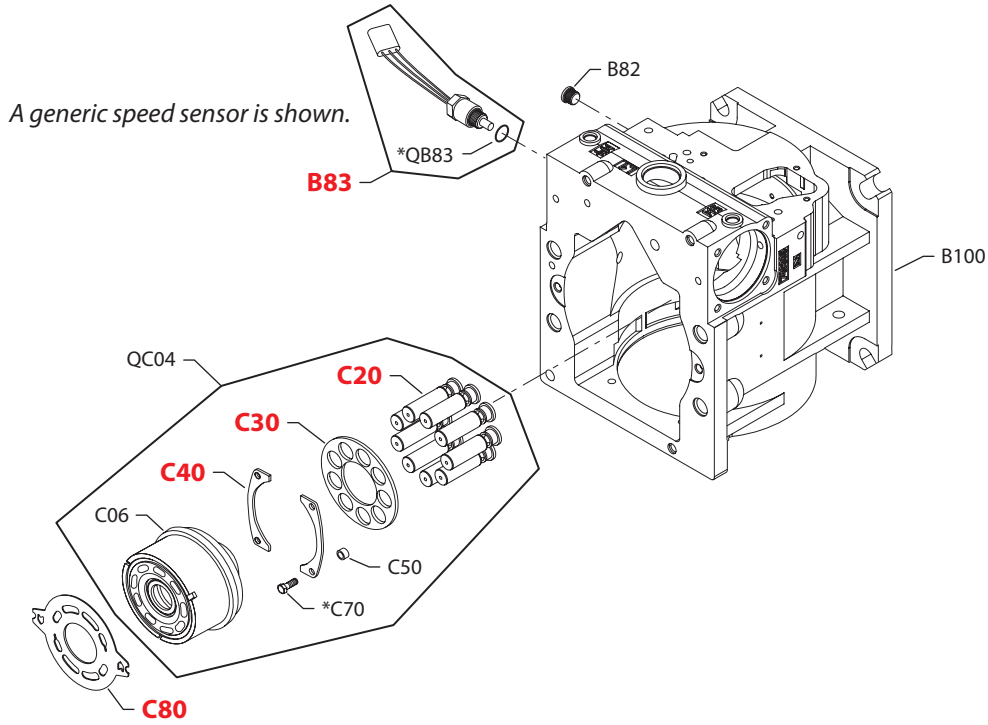

Variable displacement pump
Special hardware

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-------------|--------------------------------|--------------------|
| NHP | B82 | 12-39 | | 140644 | Plug assembly | 1 |
| | B83 | 12-39 | | 140644 | Plug assembly | 1 |
| | B100 | 12-39 | | 11118129 | Housing assembly | 1 |
| | C05 | 12-39 | | 11147681 | Cylinder block assembly | 1 |
| | C20 | 12-39 | | 504501 | Piston/slipper assembly | 9 |
| | C30 | 12-39 | | 11067354 | Slipper guide | 1 |
| | C40 | 12-39 | | 504377 | Slipper guide bearing | 2 |
| | C50 | 12-39 | | 504378 | Spacer | 4 |
| | C70 | 12-39 | | 308643 | Screw | 4 |
| | C80 | 12-39 | | 507346 | Valve plate | 1 |
| | QC04 | 12-39 | | 519279 | Cylinder block kit | 1 |
| | NNA | B82 | 12-36 | | 140644 | Plug assembly |
| B83 | | 12-39 | | 140644 | Plug assembly | 1 |
| B100 | | 12-36 | | 11088644 | Housing assembly | 1 |
| C05 | | 12-39 | | 11147681 | Cylinder block assembly | 1 |
| C20 | | 12-39 | | 504501 | Piston/slipper assembly | 9 |
| C30 | | 12-39 | | 11067354 | Slipper guide | 1 |
| C40 | | 12-39 | | 504377 | Slipper guide bearing | 2 |
| C50 | | 12-39 | | 504378 | Spacer | 4 |
| C70 | | 12-39 | | 308643 | Screw | 4 |
| C80 | | 12-39 | | 507346 | Valve plate | 1 |
| QC04 | | 12-39 | | 519279 | Cylinder block kit | 1 |
| NNN | | B82 | 00-07 | | 140644 | Plug assembly |
| | B83 | 95-28 | | 140644 | Plug assembly | 1 |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 |
| | B100 | 00-07 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 |
| | C05 | 95-28 | | 11147681 | Cylinder block assembly | 1 |
| | C20 | 95-28 | | 504501 | Piston/slipper assembly | 9 |
| | C30 | 95-28 | | 11067354 | Slipper guide | 1 |
| | C40 | 95-28 | | 504377 | Slipper guide bearing | 2 |
| | C50 | 95-28 | | 504378 | Spacer | 4 |
| | C70 | 95-28 | | 308643 | Screw | 4 |
| | C80 | 95-28 | | 507346 | Valve plate | 1 |
| | QC04 | 95-28 | | 519279 | Cylinder block kit | 1 |

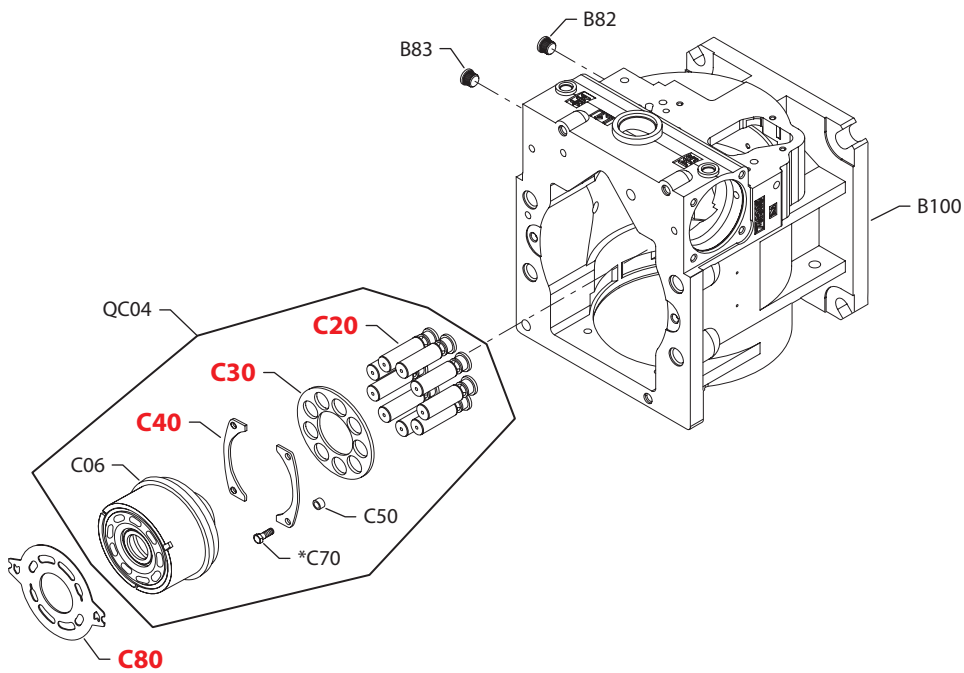


Variable displacement pump

(PEA)



(PGA)



E100 104E

* = included in overhaul seal kit Q210

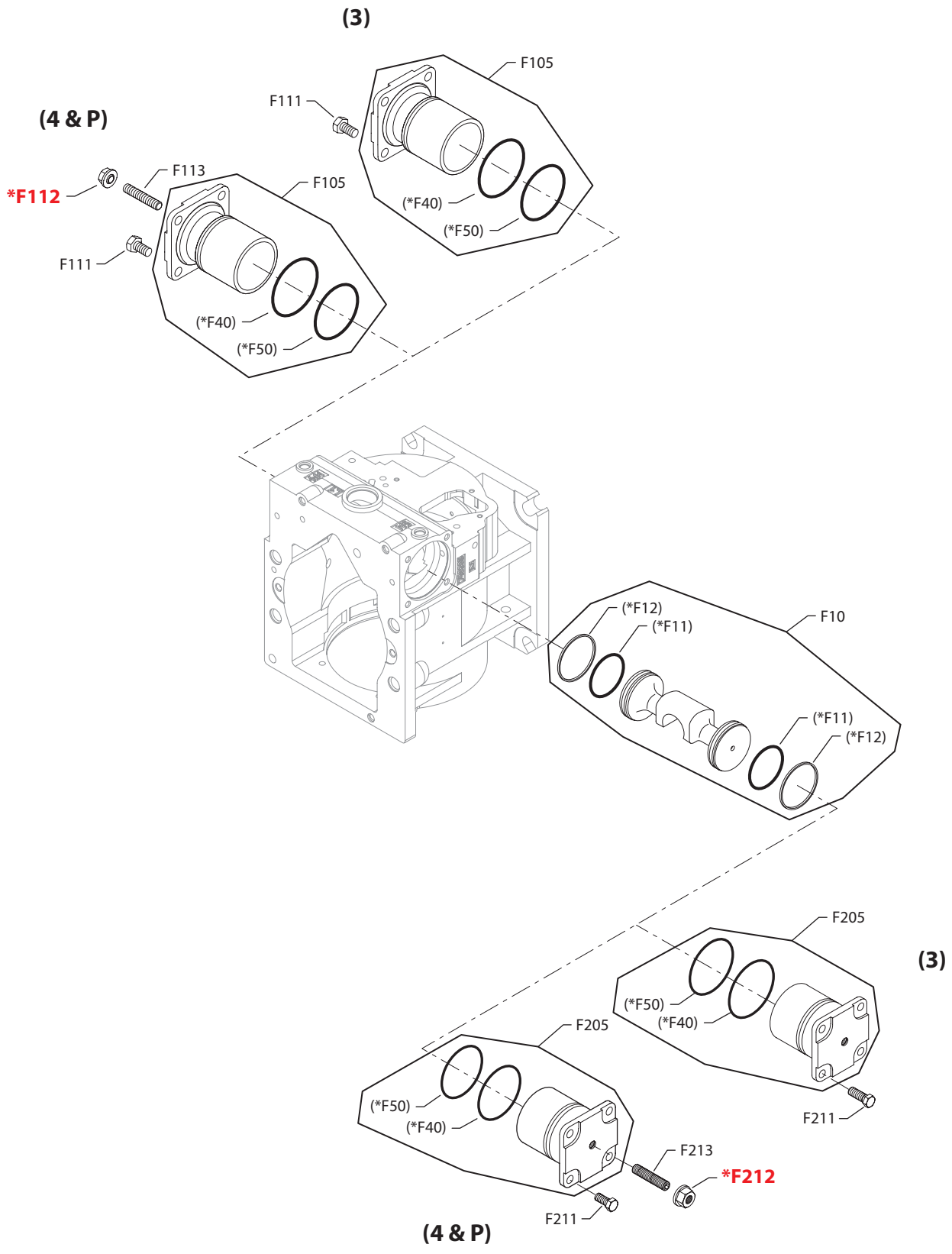
Enlarged **bold** type item numbers are recommended part to stock for servicing.


Variable displacement pump
Special hardware

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-----------------------|---|--------------------|
| PEA | B82 | 08-37 | | 140644 | Plug assembly | 1 |
| | B83 | 08-37 | | KPPG156 | Speed sensor | 1 |
| | B100 | 11-40 | | 11088644 | Housing assembly | 1 |
| | B100 | 08-37 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 |
| | C06 | 08-37 | | 519889 | Cylinder block assembly with speed ring | 1 |
| | C20 | 08-37 | | 504501 | Piston/slipper assembly | 9 |
| | C30 | 08-37 | | 11067354 | Slipper guide | 1 |
| | C40 | 08-37 | | 504377 | Slipper guide bearing | 2 |
| | C50 | 08-37 | | 504378 | Spacer | 4 |
| | C70 | 08-37 | | 308643 | Screw | 4 |
| | C80 | 08-37 | | 507346 | Valve plate | 1 |
| | QB83 | 08-37 | | 085043 (9004201-3700) | O-ring | 1 |
| | QC04 | 08-37 | | 11097868 | Cylinder block kit with speed ring | 1 |
| | PGA | B82 | 08-37 | | 140644 | Plug assembly |
| B83 | | 08-37 | | 140644 | Plug assembly | 1 |
| B100 | | 11-40 | | 11088644 | Housing assembly | 1 |
| B100 | | 08-37 | 11-39 | 515967 | Housing assembly (SB-2011-032) | 1 |
| C05 | | 08-37 | | 11147681 | Cylinder block assembly | 1 |
| C20 | | 08-37 | | 504501 | Piston/slipper assembly | 9 |
| C30 | | 08-37 | | 11067354 | Slipper guide | 1 |
| C40 | | 08-37 | | 504377 | Slipper guide bearing | 2 |
| C50 | | 08-37 | | 504378 | Spacer | 4 |
| C70 | | 08-37 | | 308643 | Screw | 4 |
| C80 | | 08-37 | | 507346 | Valve plate | 1 |
| QC04 | | 08-37 | | 519279 | Cylinder block kit | 1 |



Variable displacement pump



E100 091E

* = included in overhaul seal kit Q210
 () = not available individually

Enlarged **bold** type item numbers are recommended part to stock for servicing.

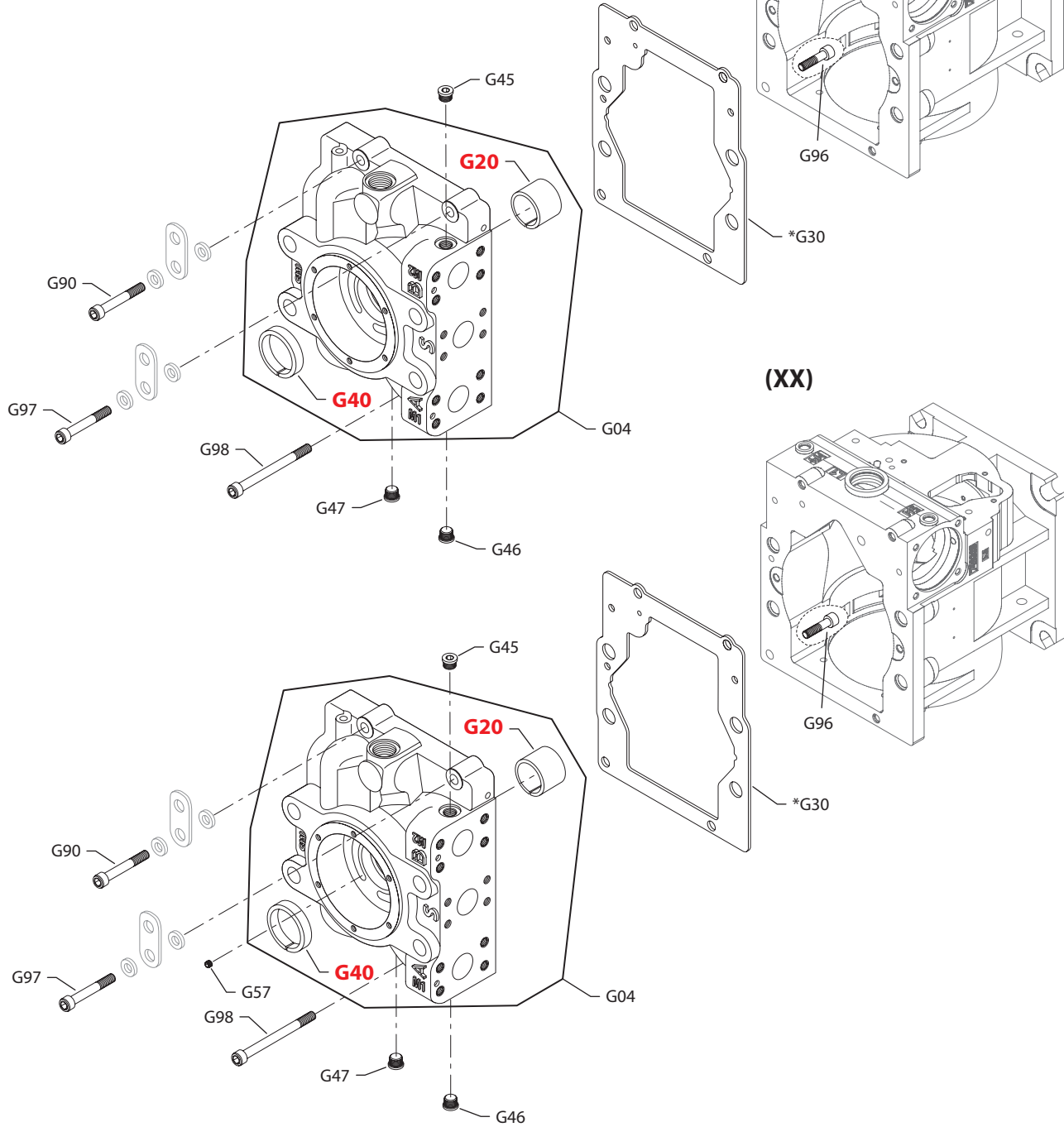

Variable displacement pump
Displacement limitation

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-------------|--------------------------|-----------------------|
| 3 | F10 | 95-28 | | 11046679 | Servo piston assembly | 1 |
| | F105 | 95-28 | | 11060705 | Servo cyclinder assembly | 1 |
| | F111 | 95-28 | | 308643 | Screw | 4 |
| | F205 | 95-28 | | 11060705 | Servo cyclinder assembly | 1 |
| | F211 | 95-28 | | 308643 | Screw | 4 |
| 4 | F10 | 95-28 | | 11046679 | Servo piston assembly | 1 |
| | F105 | 95-28 | | 11060706 | Servo cyclinder assembly | 1 |
| | F111 | 95-28 | | 308643 | Screw | 4 |
| | F112 | 95-28 | | 649822 | Seal nut | 1 |
| | F113 | 95-28 | | 11000798 | Set screw | 1 |
| | F205 | 95-28 | | 11060706 | Servo cyclinder assembly | 1 |
| | F211 | 95-28 | | 308643 | Screw | 4 |
| | F212 | 95-28 | | 649822 | Seal nut | 1 |
| | F213 | 95-28 | | 11000798 | Set screw | 1 |
| | P | F10 | 95-28 | | 11046679 | Servo piston assembly |
| F105 | | 95-28 | | 11060706 | Servo cyclinder assembly | 1 |
| F111 | | 95-28 | | 308643 | Screw | 4 |
| F112 | | 95-28 | | 649822 | Seal nut | 1 |
| F113 | | 95-28 | | 516127 | Set screw | 1 |
| F205 | | 95-28 | | 11060706 | Servo cyclinder assembly | 1 |
| F211 | | 95-28 | | 308643 | Screw | 4 |
| F212 | | 95-28 | | 649822 | Seal nut | 1 |
| F213 | | 95-28 | | 516127 | Set screw | 1 |



Variable displacement pump

(8 & 80)



(XX)

* = included in overhaul seal kit Q210

E100 092E

Enlarged **bold** type item numbers are recommended part to stock for servicing.



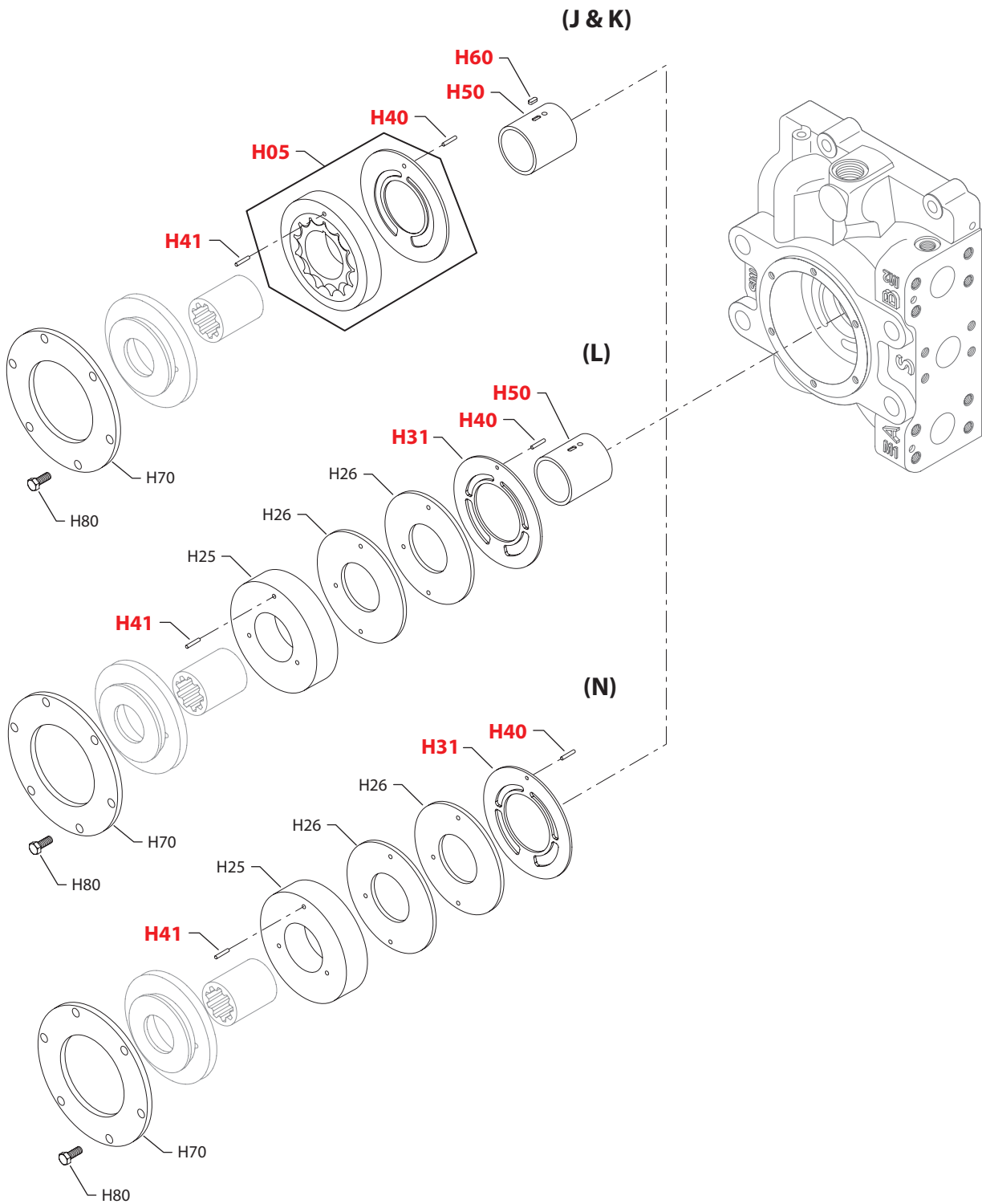
Variable displacement pump

End cap

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-------------|------------------------------|------------------------------|
| 8 & 80 | G04 | 95-28 | | 519034 | End cap assembly, twin ports | 1 |
| | G20 | 95-28 | | 504503 | Journal bearing | 1 |
| | G30 | 95-28 | | 511809 | End cap gasket | 1 |
| | G40 | 95-28 | | 303651 | Bushing | 1 |
| | G45 | 95-28 | | 140644 | Plug assembly | 1 |
| | G46 | 95-28 | | 140644 | Plug assembly | 1 |
| | G47 | 95-28 | | 140644 | Plug assembly | 1 |
| | G90 | 95-28 | | 356220 | Screw | 1 |
| | G96 | 95-28 | | 290502 | Screw | 1 |
| | G97 | 95-28 | | 356220 | Screw | 1 |
| | G98 | 95-28 | | 505261 | Screw | 1 |
| | XX | G04 | 09-27 | | 11068492 | End cap assembly, twin ports |
| G20 | | 09-27 | | 11068455 | Journal bearing | 1 |
| G30 | | 09-27 | | 511809 | End cap gasket | 1 |
| G40 | | 09-27 | | 303651 | Bushing | 1 |
| G45 | | 09-27 | | 140644 | Plug assembly | 1 |
| G46 | | 09-27 | | 140644 | Plug assembly | 1 |
| G47 | | 09-27 | | 140644 | Plug assembly | 1 |
| G57 | | 09-27 | | 11068189 | Orifice plug | 1 |
| G90 | | 09-27 | | 356220 | Screw | 1 |
| G96 | | 09-27 | | 290502 | Screw | 1 |
| G97 | | 09-27 | | 356220 | Screw | 1 |
| G98 | | 09-27 | | 505261 | Screw | 1 |



Variable displacement pump



E101 793E

Enlarged **bold** type item numbers are recommended part to stock for servicing.

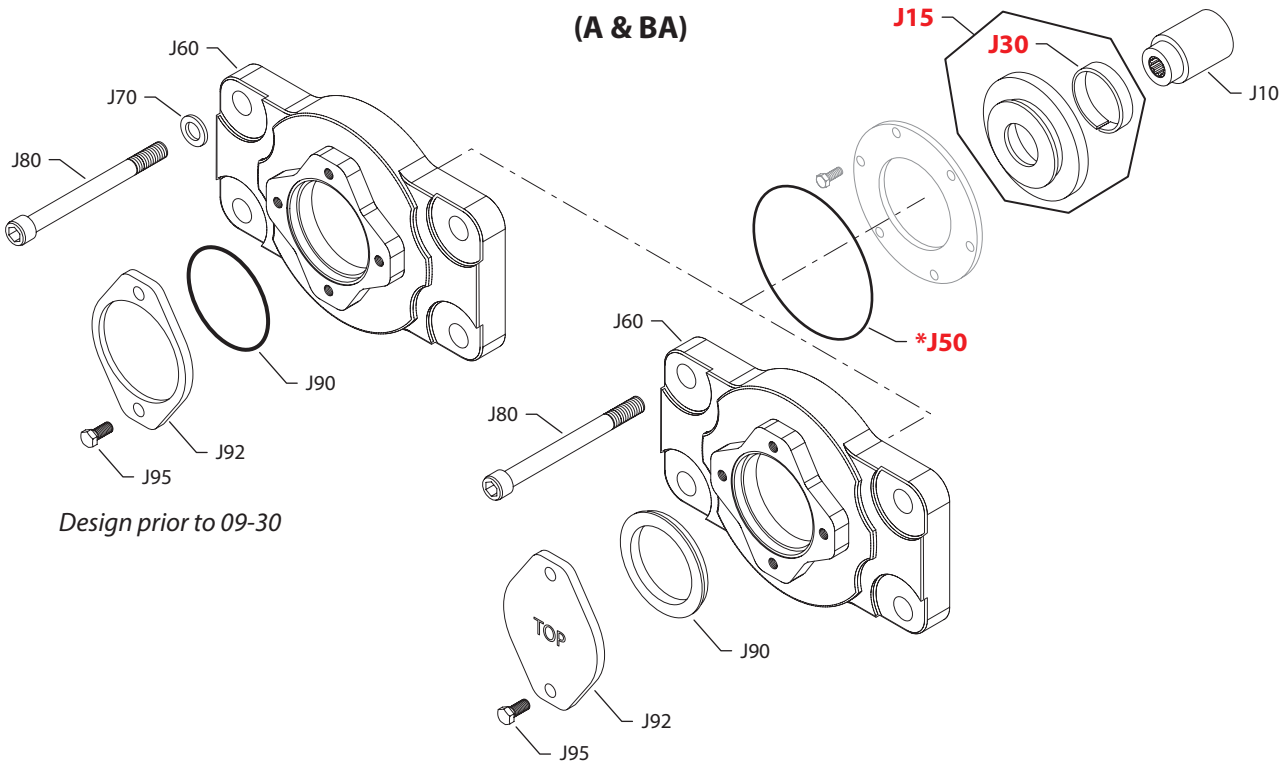

Variable displacement pump
Charging system

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-------------|---------------------------------|------------------------|
| J | H05 | 95-28 | | 504557 | Charge pump set, 47 cc | 1 |
| | H40 | 95-28 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| | H41 | 95-28 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| | H50 | 95-28 | | 518691 | Charge pump shaft (SB-2002-040) | 1 |
| | H60 | 95-28 | | 734608 | Key | 1 |
| | H70 | 95-28 | | 509361 | Retaining plate | 1 |
| | H80 | 95-28 | | 378083 | Screw | 6 |
| | K | H05 | 95-28 | | 505410 | Charge pump set, 65 cc |
| H40 | | 95-28 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| H41 | | 95-28 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| H50 | | 95-28 | | 518691 | Charge pump shaft (SB-2002-040) | 1 |
| H60 | | 95-28 | | 734608 | Key | 1 |
| H70 | | 95-28 | | 509361 | Retaining plate | 1 |
| H80 | | 95-28 | | 378083 | Screw | 6 |
| L | | H25 | 04-49 | | 11077719 | Spacer |
| | H26 | 04-49 | | 711218 | Distance plate | 2 |
| | H31 | 04-49 | | 11078207 | Port plate | 1 |
| | H40 | 04-49 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| | H41 | 04-49 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| | H50 | 04-49 | | 518691 | Charge pump shaft | 1 |
| | H70 | 04-49 | | 509361 | Retaining plate | 1 |
| | H80 | 04-49 | | 378083 | Screw | 6 |
| N | H25 | 04-49 | | 11077719 | Spacer | 1 |
| | H26 | 04-49 | | 711218 | Distance plate | 2 |
| | H31 | 04-49 | | 11078207 | Port plate | 1 |
| | H40 | 04-49 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| | H41 | 04-49 | | 11152778 | Pin, 26mm (SB-2015-038) | 1 |
| | H70 | 04-49 | | 509361 | Retaining plate | 1 |
| | H80 | 04-49 | | 378083 | Screw | 6 |

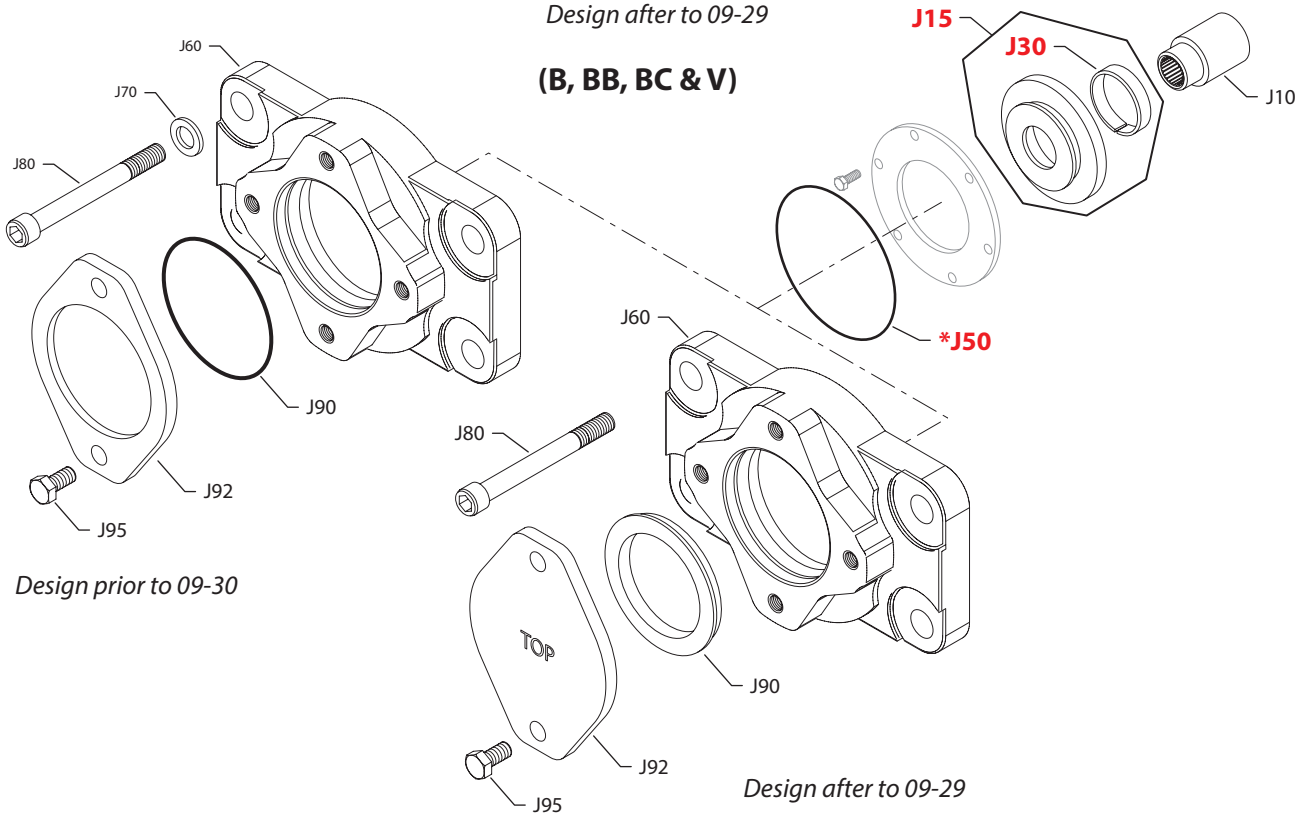


Variable displacement pump

(A & BA)



(B, BB, BC & V)



E100 093E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

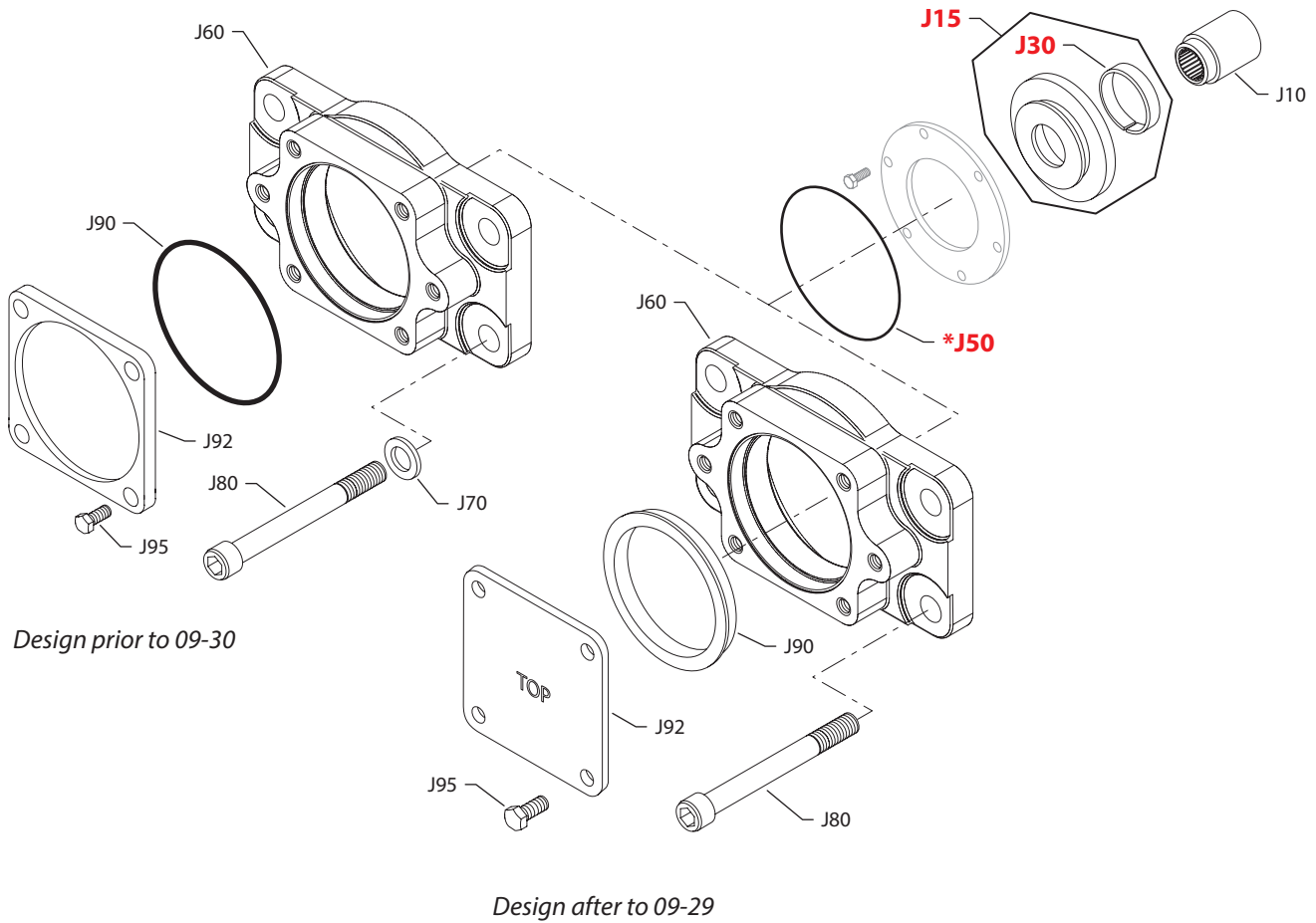

Variable displacement pump
Auxiliary mounting

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|--------|------------|----------|-----------------------|-------------------------------------|--------------------|
| AB & A | J10 | 95-28 | | 11053336 | Coupling, 9 tooth | 1 |
| | J15 | 95-28 | | 501402 | Cover assembly, CW | 1 |
| | J15 | 95-28 | | 501401 | Cover assembly, CCW | 1 |
| | J30 | 95-28 | | 303651 | Bushing | 1 |
| | J50 | 95-28 | | 505068 | O-ring | 1 |
| | J60 | 09-30 | | 520949 | Flange adaptor, SAE A | 1 |
| | J60 | 95-28 | 09-29 | 505136 | Flange adaptor, SAE A (SB-2009-074) | 1 |
| | J70 | 95-28 | 09-29 | 279729 | Washer (SB-2009-074) | 4 |
| | J80 | 89-46 | | 505260 | Screw | 4 |
| | J90 | 09-30 | | 4800482 | A pad seal | 1 |
| | J90 | 95-28 | 09-29 | 726950 (9004104-0420) | O-ring (SB-2009-074) | 1 |
| | J92 | 09-30 | | 4460586 | Cover plate | 1 |
| | J92 | 95-28 | 09-29 | 545475 (9802336) | Cover plate (SB-2009-074) | 1 |
| | J95 | 95-28 | | 9007200-3714 | Screw | 2 |
| | BB & V | J10 | 95-28 | | 11053334 | Coupling, 15 tooth |
| J15 | | 95-28 | | 501402 | Cover assembly, CW | 1 |
| J15 | | 95-28 | | 501401 | Cover assembly, CCW | 1 |
| J30 | | 95-28 | | 303651 | Bushing | 1 |
| J50 | | 95-28 | | 505068 | O-ring | 1 |
| J60 | | 09-30 | | 520950 | Flange adaptor, SAE B | 1 |
| J60 | | 95-28 | 09-29 | 505132 | Flange adaptor, SAE B (SB-2009-075) | 1 |
| J70 | | 95-28 | 09-29 | 279729 | Washer (SB-2009-075) | 4 |
| J80 | | 89-46 | | 505260 | Screw | 4 |
| J90 | | 09-30 | | 8801061 | B pad seal | 1 |
| J90 | | 95-28 | 09-29 | 726935 (9004104-0450) | O-ring (SB-2009-075) | 1 |
| J92 | | 09-30 | | 8801059 | Cover plate | 1 |
| J92 | | 95-28 | 09-29 | 4460370 | Cover plate (SB-2009-075) | 1 |
| J95 | | 95-28 | | 9007200-5021 | Screw | 2 |
| BC & B | | J10 | 95-28 | | 11053289 | Coupling, 13 tooth |
| | J15 | 95-28 | | 501402 | Cover assembly, CW | 1 |
| | J15 | 95-28 | | 501401 | Cover assembly, CCW | 1 |
| | J30 | 95-28 | | 303651 | Bushing | 1 |
| | J50 | 95-28 | | 505068 | O-ring | 1 |
| | J60 | 09-30 | | 520950 | Flange adaptor, SAE B | 1 |
| | J60 | 95-28 | 09-29 | 505132 | Flange adaptor, SAE B (SB-2009-075) | 1 |
| | J70 | 95-28 | 09-29 | 279729 | Washer (SB-2009-075) | 4 |
| | J80 | 89-46 | | 505260 | Screw | 4 |
| | J90 | 09-30 | | 8801061 | B pad seal | 1 |
| | J90 | 95-28 | 09-29 | 726935 (9004104-0450) | O-ring (SB-2009-075) | 1 |
| | J92 | 09-30 | | 8801059 | Cover plate | 1 |
| | J92 | 95-28 | 09-29 | 4460370 | Cover plate (SB-2009-075) | 1 |
| | J95 | 95-28 | | 9007200-5021 | Screw | 2 |



Variable displacement pump

(C, C1, C5 & CD)



* = included in overhaul seal kit Q210

E100 094E

Enlarged **bold** type item numbers are recommended part to stock for servicing.



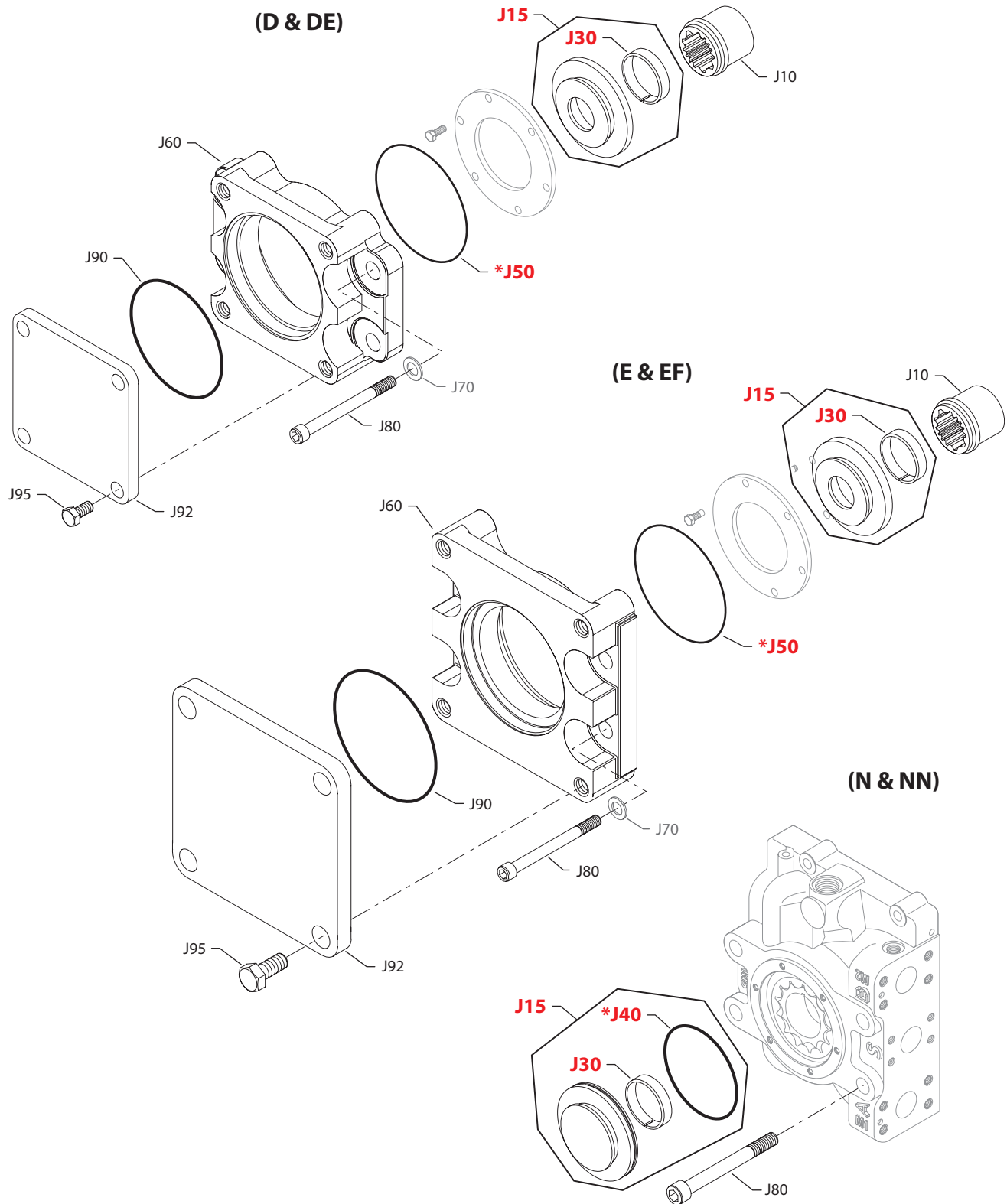
Variable displacement pump

Auxiliary mounting

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-----------------------|-------------------------------------|--------------------|
| C1 | J10 | 06-25 | | 11053337 | Coupling, 17 tooth | 1 |
| | J15 | 95-28 | | 503399 | Cover assembly, CW | 1 |
| | J15 | 95-28 | | 503397 | Cover assembly, CCW | 1 |
| | J30 | 95-28 | | 303651 | Bushing | 1 |
| | J50 | 95-28 | | 505068 | O-ring | 1 |
| | J60 | 09-30 | | 520951 | Flange adaptor, SAE C | 1 |
| | J60 | 95-28 | 09-29 | 505139 | Flange adaptor, SAE C (SB-2009-076) | 1 |
| | J70 | 95-28 | 09-29 | 279729 | Washer (SB-2009-076) | 4 |
| | J80 | 89-46 | | 505260 | Screw | 4 |
| | J90 | 09-30 | | 11081805 | C pad seal | 1 |
| | J90 | 95-28 | 09-29 | 726943 (9004104-0490) | O-ring (SB-2009-076) | 1 |
| | J92 | 09-30 | | 8801060 | Cover plate | 1 |
| | J92 | 95-28 | 09-29 | 307363 (8800406) | Cover plate (SB-2009-076) | 1 |
| | J95 | 95-28 | | 9007200-5021 | Screw | 4 |
| | C5 | J10 | 13-01 | | 11053291 | Coupling, 14 tooth |
| J15 | | 13-01 | | 501402 | Cover assembly, CW | 1 |
| J15 | | 13-01 | | 501401 | Cover assembly, CCW | 1 |
| J30 | | 13-01 | | 303651 | Bushing | 1 |
| J50 | | 13-01 | | 505068 | O-ring | 1 |
| J60 | | 13-01 | | 11117178 | Flange adaptor, SAE C, special | 1 |
| J80 | | 13-01 | | 505260 | Screw | 4 |
| J90 | | 13-01 | | 11081805 | C pad seal | 1 |
| J92 | | 13-01 | | 8801060 | Cover plate | 1 |
| J95 | | 13-01 | | 9007200-5021 | Screw | 4 |
| CD & C | | J10 | 95-28 | | 11053291 | Coupling, 14 tooth |
| | J15 | 95-28 | | 501402 | Cover assembly, CW | 1 |
| | J15 | 95-28 | | 501401 | Cover assembly, CCW | 1 |
| | J30 | 95-28 | | 303651 | Bushing | 1 |
| | J50 | 95-28 | | 505068 | O-ring | 1 |
| | J60 | 09-30 | | 520951 | Flange adaptor, SAE C | 1 |
| | J60 | 95-28 | 09-29 | 505139 | Flange adaptor, SAE C (SB-2009-076) | 1 |
| | J70 | 95-28 | 09-29 | 279729 | Washer (SB-2009-076) | 4 |
| | J80 | 89-46 | | 505260 | Screw | 4 |
| | J90 | 09-30 | | 11081805 | C pad seal | 1 |
| | J90 | 95-28 | 09-29 | 726943 (9004104-0490) | O-ring (SB-2009-076) | 1 |
| | J92 | 09-30 | | 8801060 | Cover plate | 1 |
| | J92 | 95-28 | 09-29 | 307363 (8800406) | Cover plate (SB-2009-076) | 1 |
| | J95 | 95-28 | | 9007200-5021 | Screw | 4 |



Variable displacement pump



E100 096E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.



Variable displacement pump

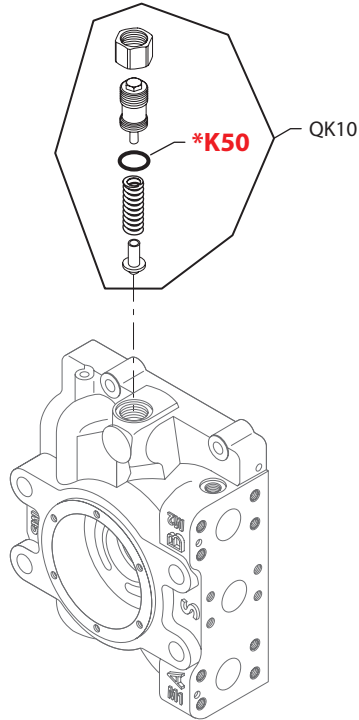
Auxiliary mounting

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|--------|------------|----------|--------------|-----------------------|--------------------|---|
| D & DE | J10 | 95-28 | | 11053290 | Coupling, 13 tooth | 1 | |
| | J15 | 95-28 | | 503663 | Cover assembly, CW | 1 | |
| | J15 | 95-28 | | 503666 | Cover assembly, CCW | 1 | |
| | J30 | 95-28 | | 303651 | Bushing | 1 | |
| | J50 | 95-28 | | 505068 | O-ring | 1 | |
| | J60 | 95-28 | | 505140 | Flange adaptor, SAE D | 1 | |
| | J70 | 95-28 | 15-46 | 279729 | Washer | 4 | |
| | J80 | 95-28 | | 505260 | Screw | 4 | |
| | J90 | 95-28 | | 726927 | O-ring | 1 | |
| | J92 | 95-28 | | 338400 | Cover plate | 1 | |
| | J95 | 95-28 | | 9007200-7524 | Screw | 4 | |
| | E & EF | J10 | 95-28 | | 11053290 | Coupling, 13 tooth | 1 |
| | | J15 | 95-28 | | 503663 | Cover assembly, CW | 1 |
| J15 | | 95-28 | | 503666 | Cover assembly, CCW | 1 | |
| J30 | | 95-28 | | 303651 | Bushing | 1 | |
| J50 | | 95-28 | | 505068 | O-ring | 1 | |
| J60 | | 95-28 | | 505141 | Flange adaptor, SAE E | 1 | |
| J70 | | 95-28 | 15-46 | 279729 | Washer | 4 | |
| J80 | | 95-28 | | 505260 | Screw | 4 | |
| J90 | | 95-28 | | 505068 | O-ring | 1 | |
| J92 | | 95-28 | | 750422 | Cover plate | 1 | |
| J95 | | 95-28 | | 9007200-7524 | Screw | 4 | |
| EG & H | | J10 | 95-28 | | 11053335 | Coupling, 27 tooth | 1 |
| | | J15 | 95-28 | | 503663 | Cover assembly, CW | 1 |
| | J15 | 95-28 | | 503666 | Cover assembly, CCW | 1 | |
| | J30 | 95-28 | | 303651 | Bushing | 1 | |
| | J50 | 95-28 | | 505068 | O-ring | 1 | |
| | J60 | 95-28 | | 505141 | Flange adaptor, SAE E | 1 | |
| | J70 | 95-28 | 15-46 | 279729 | Washer | 4 | |
| | J80 | 95-28 | | 505260 | Screw | 4 | |
| | J90 | 95-28 | | 505068 | O-ring | 1 | |
| | J92 | 95-28 | | 750422 | Cover plate | 1 | |
| | J95 | 95-28 | | 9007200-7524 | Screw | 4 | |
| | N & NN | J15 | 95-28 | | 501400 | Cover assembly | 1 |
| | | J30 | 95-28 | | 303651 | Bushing | 1 |
| J40 | | 95-28 | | 916940 | O-ring | 1 | |
| J80 | | 95-28 | | 505422 | Screw | 4 | |

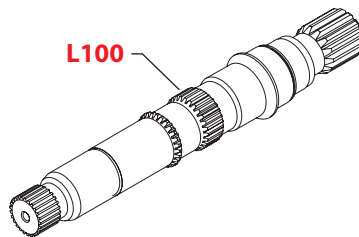


Variable displacement pump

(18-36)



(C8 & F1)



E100 098E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.



Variable displacement pump

Charge pressure relief

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-----------------------|------------------------------------|--------------------|
| 18-32 | QK10 | 95-28 | | 8510272 | Charge relief valve kit, 18-32 bar | 1 |
| | K50 | 95-28 | | 001156 (9004201-7500) | O-ring | 1 |
| 36 | QK10 | 95-28 | | 8510390 | Charge relief valve kit, 34-36 bar | 1 |
| | K50 | 95-28 | | 001156 (9004201-7500) | O-ring | 1 |

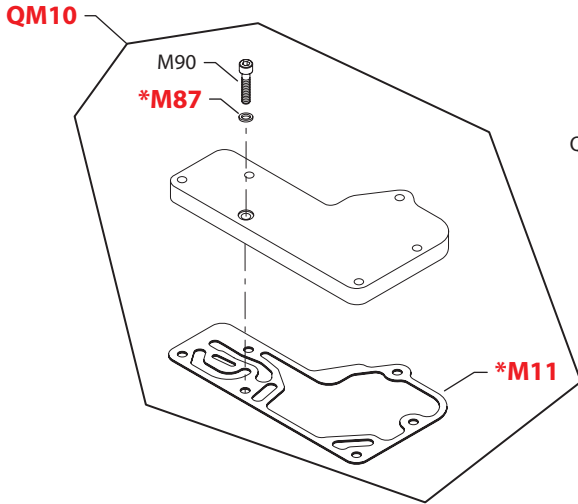
Shaft

| | | | | | | |
|----|------|-------|--|--------|------------------------|---|
| C8 | L100 | 95-28 | | 504338 | Shaft, 27 tooth spline | 1 |
| F1 | L100 | 95-28 | | 504411 | Shaft, 13 tooth spline | 1 |

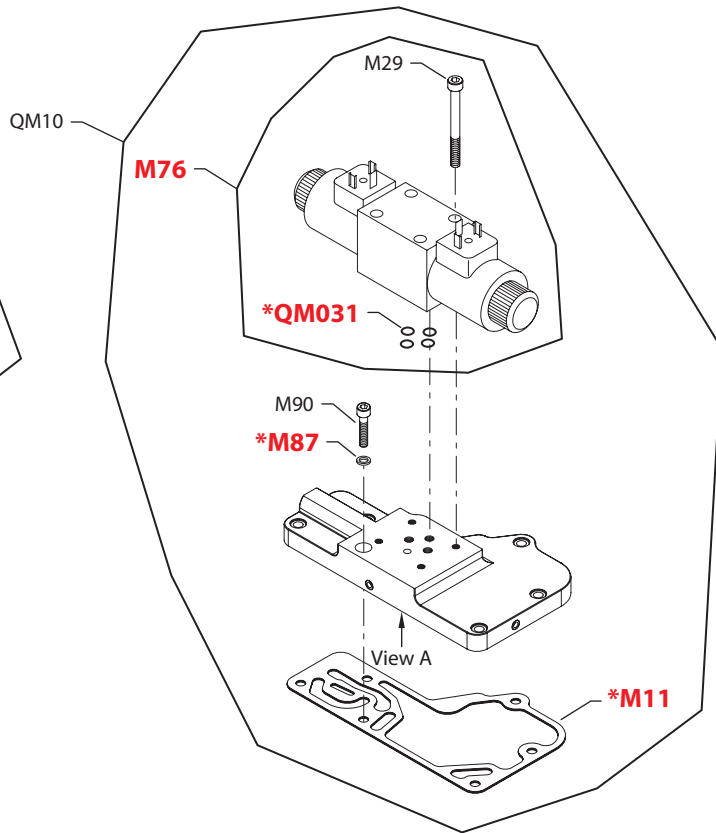


Variable displacement pump

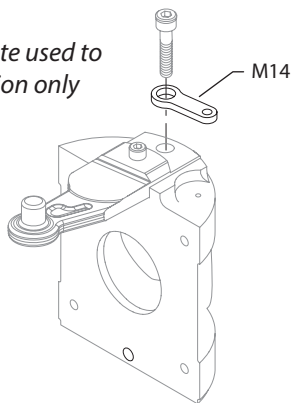
(CA & CB)



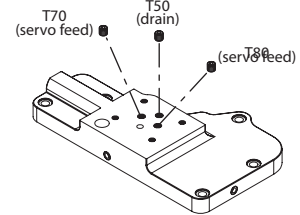
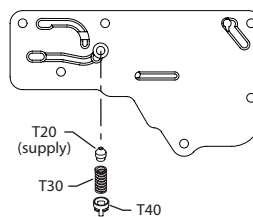
(DD)



Generic swashplate used to show link location only



View "A"



Possible orifice locations

NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E100 099E

* = included in control seal kit QM210

Enlarged **bold** type item numbers are recommended part to stock for servicing.


Variable displacement pump
Control

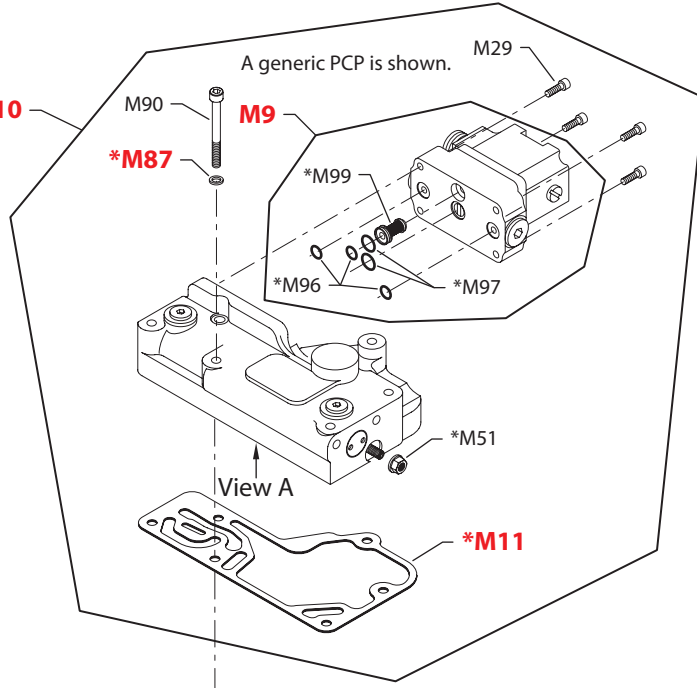
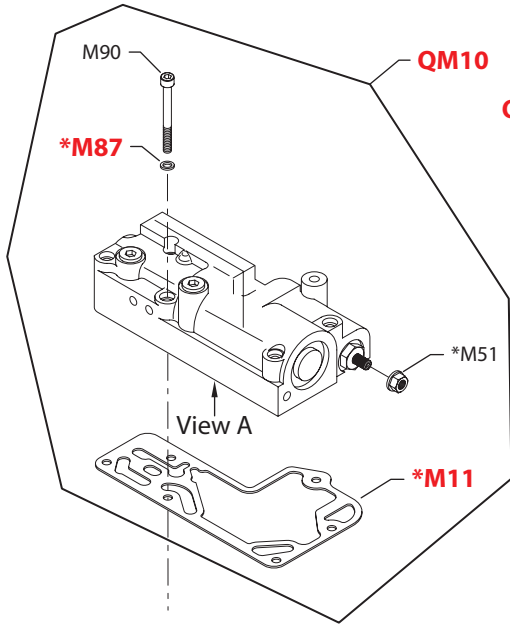
| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|-------|------------|----------|-----------------------|---------------------------------|--------------------|
| CA | M11 | 13-42 | | 8800923 | Control gasket | 1 |
| | M90 | 13.42 | | 693341 (9007314-0606) | Screw | 6 |
| | QM10 | 13.42 | | 11098677 | Control cover plate kit | 1 |
| | QM210 | 13-42 | | 11096320 | Control seal kit | 1 |
| CB | M11 | 95-28 | | 8800923 | Control gasket | 1 |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 |
| | M90 | 95-28 | | 693341 (9007314-0606) | Screw | 6 |
| | QM10 | 95-28 | | 11098677 | Control cover plate kit | 1 |
| | QM210 | 95-28 | | 11096320 | Control seal kit | 1 |
| | | | | | | |
| CF | M11 | 95-28 | | 509718 | Control gasket | 1 |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 |
| | M90 | 95-28 | | 693341 (9007314-0606) | Screw | 6 |
| | QM10 | 95-28 | | 11098675 | Control cover plate kit | 1 |
| | QM210 | 95-28 | | 11097122 | Control seal kit | 1 |
| | | | | | | |
| DD | M11 | 95-28 | | 8800923 | Control gasket | 1 |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 |
| | M90 | 95-28 | | 693341 (9007314-0606) | Screw | 6 |
| | QM10 | 95-28 | | 8102M0DD-A | 3-position control kit, 24 volt | 1 |
| | QM031 | 95-28 | | 11099647 | Valve seal kit | 1 |
| | QM210 | 95-28 | | 11096172 | Control seal kit | 1 |
| | | | | | | |



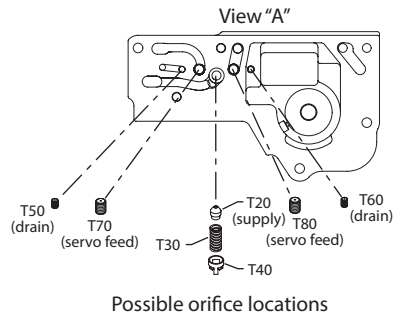
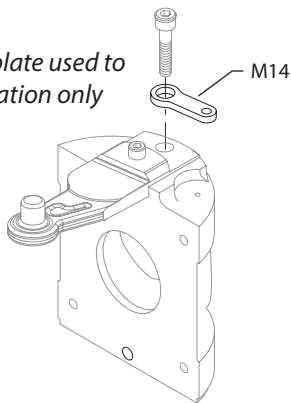
Variable displacement pump

(HF, HM & HS)

(K7 & K8)



Generic swashplate used to show link location only



NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E100 100E

* = included in control seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

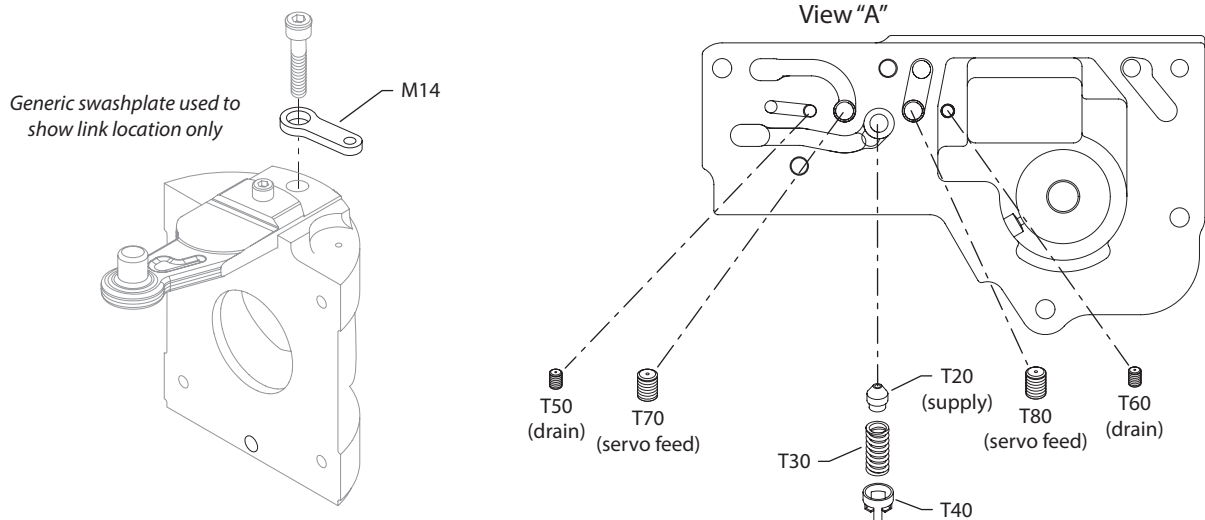
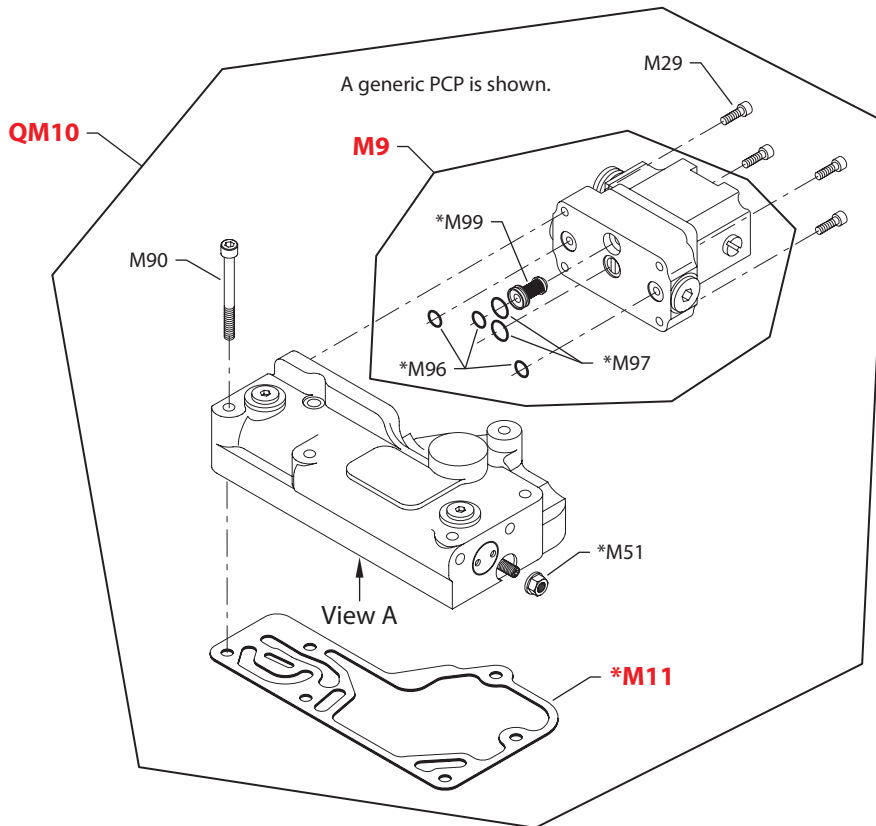

Variable displacement pump
Control

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|-------|------------|----------|-----------------------|------------------------------|--------------------|---|
| HF | M11 | 95-28 | | 8801241 | Control gasket (SB-1999-065) | 1 | |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 | |
| | M51 | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| | QM10 | 95-28 | | 8510157 | HDC kit, 3-11 bar | 1 | |
| | QM210 | 95-28 | | 11096266 | Control seal kit | 1 | |
| | HM | M11 | 95-28 | | 8801241 | Control gasket | 1 |
| M14 | | 95-28 | | 11070308 | Feedback link | 1 | |
| M51 | | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| M87 | | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| M90 | | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| QM10 | | 95-28 | | 11013637 | HDC kit, 1.1 - 6.7 bar | 1 | |
| QM210 | | 95-28 | | 11096266 | Control seal kit | 1 | |
| HS | | M11 | 95-28 | | 8801241 | Control gasket | 1 |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 | |
| | M51 | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| | QM10 | 95-28 | | 11020565 | HDC kit, 6 - 18 bar | 1 | |
| | QM210 | 95-28 | | 11096266 | Control seal kit | 1 | |
| | K7 | M9 | 14-31 | | 11101116 | PCP, MS connector | 1 |
| M11 | | 14-31 | | 8800923 | Control gasket | 1 | |
| M14 | | 14-31 | | 11070308 | Feedback link | 1 | |
| M29 | | 14-31 | | K07067 | Screw | 4 | |
| M51 | | 14-31 | | 9003509-0008 | Seal nut | 1 | |
| M90 | | 14-31 | | 692889 (9007314-0611) | Screw | 6 | |
| M96 | | 14-31 | | 011296 (9004105-0120) | O-ring | 3 | |
| M97 | | 14-31 | | 9004105-0130 | O-ring | 2 | |
| M99 | | 14-31 | | K08572 | Filter assembly | 1 | |
| QM10 | | 14-31 | | 11139997 | EDC kit, MS connector | 1 | |
| QM210 | | 14-31 | | 11095724 | Control seal kit | 1 | |
| K8 | | M9 | 15-28 | | 11101106 | PCP, MS connector | 1 |
| | | M11 | 15-28 | | 8800923 | Control gasket | 1 |
| | M14 | 15-28 | | 11070308 | Feedback link | 1 | |
| | M29 | 15-28 | | K07067 | Screw | 4 | |
| | M51 | 15-28 | | 9003509-0008 | Seal nut | 1 | |
| | M90 | 15-28 | | 692889 (9007314-0611) | Screw | 6 | |
| | M96 | 15-28 | | 011296 (9004105-0120) | O-ring | 3 | |
| | M97 | 15-28 | | 9004105-0130 | O-ring | 2 | |
| | M99 | 15-28 | | K08572 | Filter assembly | 1 | |
| | QM10 | 15-28 | | 11168552 | EDC3 kit, MS connector | 1 | |
| | QM210 | 15-28 | | 11095724 | Control seal kit | 1 | |



Variable displacement pump

(KA, KE, KN & KP)



Possible orifice locations

NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

* = included in control seal kit QM210

E100 926E

Enlarged **bold** type item numbers are recommended part to stock for servicing.


Variable displacement pump
Control

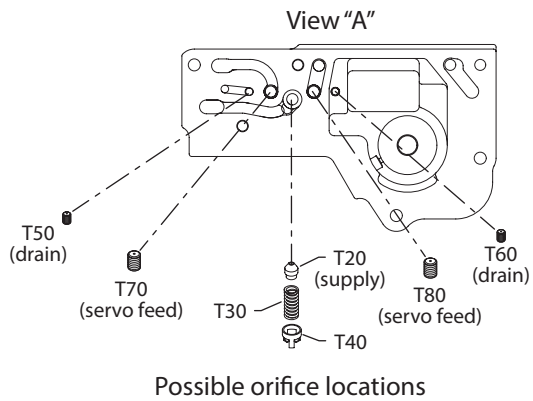
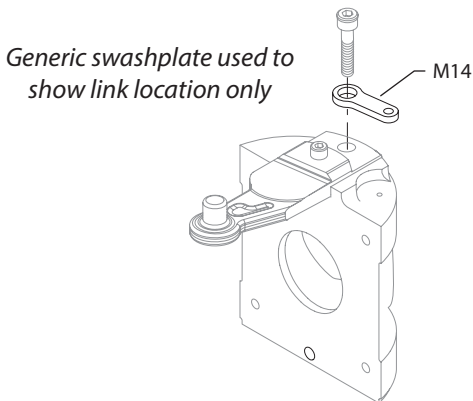
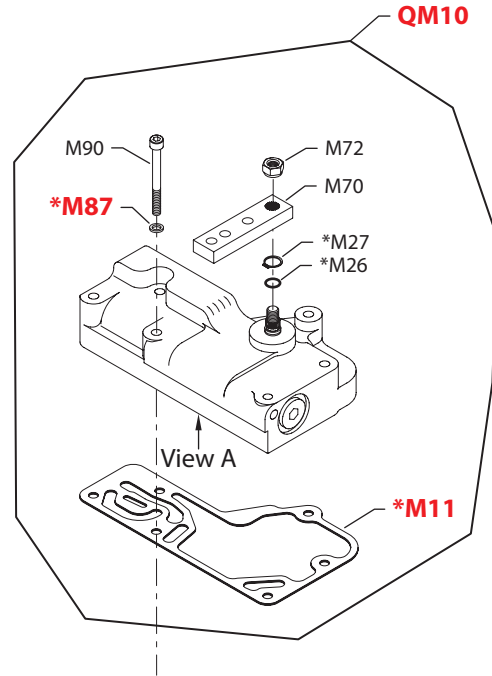
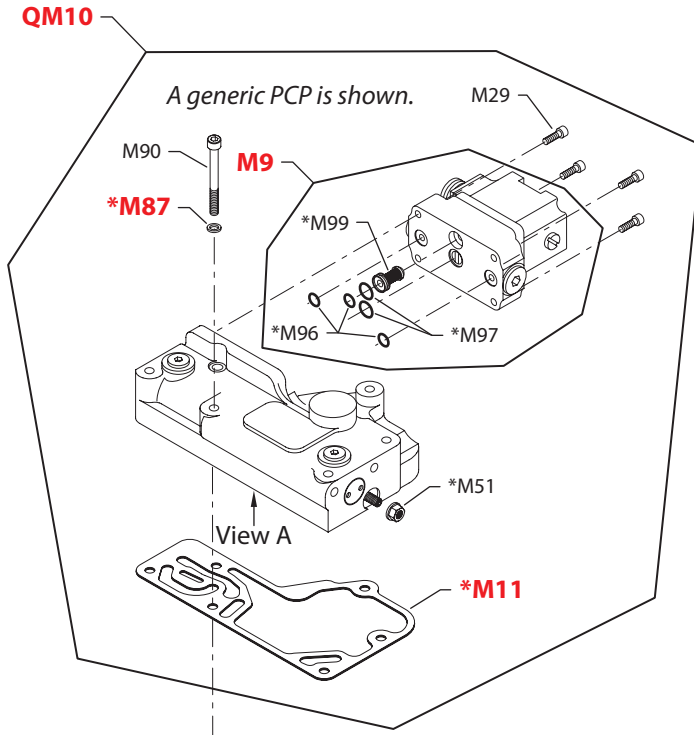
| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|-------|------------|----------|-----------------------|---------------------------------|----------------------------|---|
| KA | M9 | 95-28 | | MCV116G4201 | PCP, MS connector | 1 | |
| | M11 | 95-28 | | 8800923 | Control gasket | 1 | |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 | |
| | M29 | 95-28 | | K07067 | Screw | 4 | |
| | M51 | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| | M96 | 95-28 | | 011296 (9004105-0120) | O-ring | 3 | |
| | M97 | 95-28 | | 9004105-0130 | O-ring | 2 | |
| | M99 | 95-28 | | K08572 | Filter assembly | 1 | |
| | QM10 | 95-28 | | 8510155 | EDC3 kit, MS connector | 1 | |
| | QM210 | 95-28 | | 11095724 | Control seal kit | 1 | |
| | KE | M9 | 13-43 | | MCV116F3118 | PCP, Deutsch connector | 1 |
| M11 | | 13-43 | | 8800923 | Control gasket | 1 | |
| M14 | | 13-43 | | 11070308 | Feedback link | 1 | |
| M29 | | 13-43 | | K07067 | Screw | 4 | |
| M51 | | 13-43 | | 9003509-0008 | Seal nut | 1 | |
| M90 | | 13-43 | | 692889 (9007314-0611) | Screw | 6 | |
| M96 | | 13-43 | | 011296 (9004105-0120) | O-ring | 3 | |
| M97 | | 13-43 | | 9004105-0130 | O-ring | 2 | |
| M99 | | 13-43 | | K08572 | Filter assembly | 1 | |
| QM10 | | 13-43 | | 11099382 | EDC3 kit, Deutsch connector | 1 | |
| QM210 | | 13-43 | | 11095724 | Control seal kit | 1 | |
| KN | | M9 | 95-28 | | MCV116A3501 | PCP, MS connector | 1 |
| | | M11 | 95-28 | | 8800923 | Control gasket | 1 |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 | |
| | M29 | 95-28 | | K07067 | Screw | 4 | |
| | M51 | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| | M96 | 95-28 | | 011296 (9004105-0120) | O-ring | 3 | |
| | M97 | 95-28 | | 9004105-0130 | O-ring | 2 | |
| | M99 | 95-28 | | K08572 | Filter assembly | 1 | |
| | QM10 | 95-28 | | 8510185 | EDC3 kit, MS connector | 1 | |
| | QM210 | 95-28 | | 11095724 | Control seal kit | 1 | |
| | KP | M9 | 95-28 | | MCV116G4204 | PCP, Weather-Pac connector | 1 |
| M11 | | 95-28 | | 8800923 | Control gasket | 1 | |
| M14 | | 95-28 | | 11070308 | Feedback link | 1 | |
| M29 | | 95-28 | | K07067 | Screw | 4 | |
| M51 | | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| M87 | | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| M90 | | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| M96 | | 95-28 | | 011296 (9004105-0120) | O-ring | 3 | |
| M97 | | 95-28 | | 9004105-0130 | O-ring | 2 | |
| M99 | | 95-28 | | K08572 | Filter assembly | 1 | |
| QM10 | | 95-28 | | 8510156 | EDC3 kit, Weather-Pac connector | 1 | |
| QM210 | | 95-28 | | 11095724 | Control seal kit | 1 | |



Variable displacement pump

(KT)

(MA)



NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E101 794E

* = included in control seal kit Q210

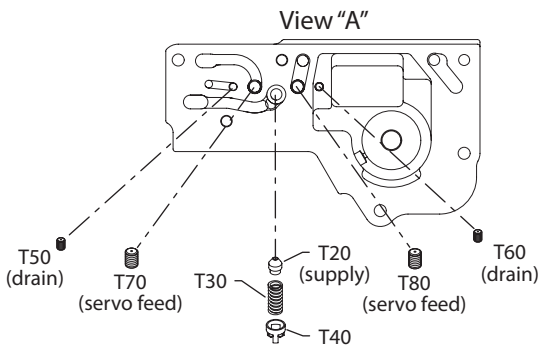
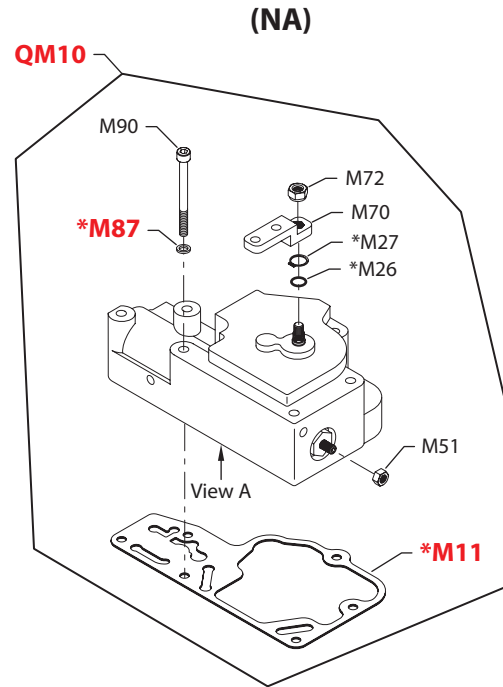
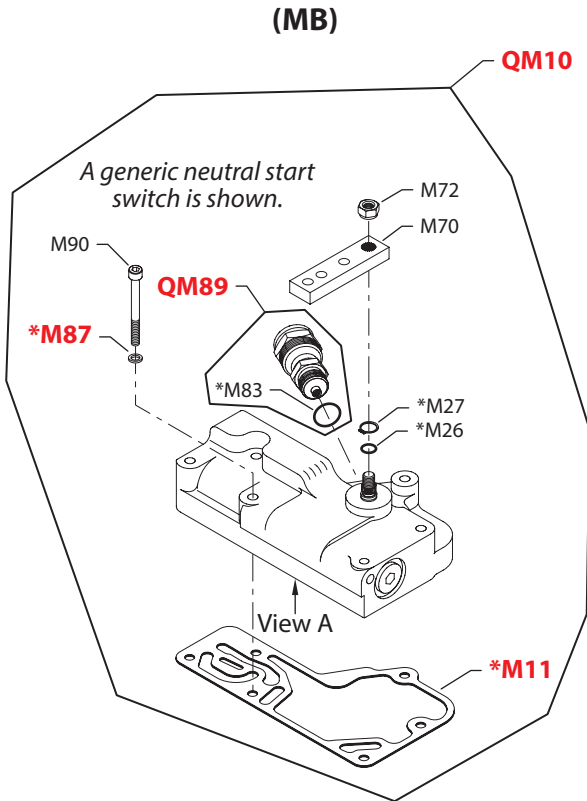
Enlarged **bold** type item numbers are recommended part to stock for servicing.


Variable displacement pump
Control

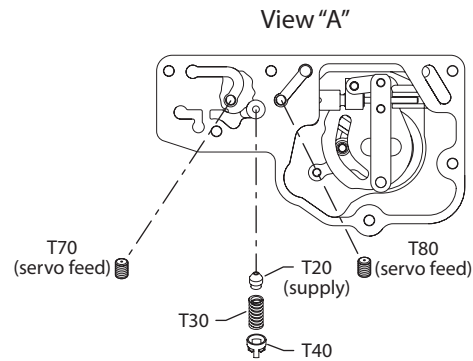
| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit | |
|------------|-------|------------|----------|-----------------------|---------------------------------|--------------------|---|
| KT | M9 | 95-28 | | MCV116G4214 | PCP, Deutsch connector | 1 | |
| | M11 | 95-28 | | 8800923 | Control gasket | 1 | |
| | M14 | 95-28 | | 11070308 | Feedback link | 1 | |
| | M29 | 95-28 | | K07067 | Screw | 4 | |
| | M51 | 95-28 | | 9003509-0008 | Seal nut | 1 | |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| | M96 | 95-28 | | 011296 (9004105-0120) | O-ring | 3 | |
| | M97 | 95-28 | | 9004105-0130 | O-ring | 2 | |
| | M99 | 95-28 | | K08572 | Filter assembly | 1 | |
| | QM10 | 95-28 | | 8510268 | EDC3 kit, Weather-Pac connector | 1 | |
| | QM210 | 95-28 | | 11095724 | Control seal kit | 1 | |
| | MA | M11 | 95-28 | | 8800923 | Control gasket | 1 |
| | | M14 | 95-28 | | 11072308 | Feedback link | 1 |
| M26 | | 95-28 | | 144725 (9004105-0110) | O-ring | 1 | |
| M27 | | 95-28 | | 9006300-0044 | Retaining ring | 1 | |
| M70 | | 95-28 | | 9800916 | Control handle | 1 | |
| M72 | | 95-28 | | 040642 (9003513-0800) | Nut | 1 | |
| M87 | | 95-28 | 12-23 | 592386 | Seal washer | 1 | |
| M90 | | 95-28 | | 692889 (9007314-0611) | Screw | 6 | |
| QM10 | | 95-28 | | 8510158 | Control kit | 1 | |
| QM210 | | 95-28 | | 11096274 | Control seal kit | 1 | |



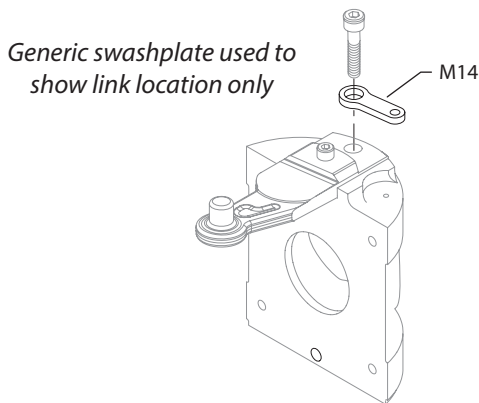
Variable displacement pump



Possible orifice locations



Possible orifice locations



NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E101 795E

* = included in control seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.


Variable displacement pump
Control

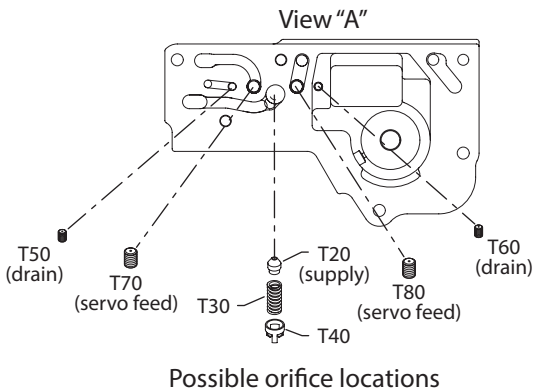
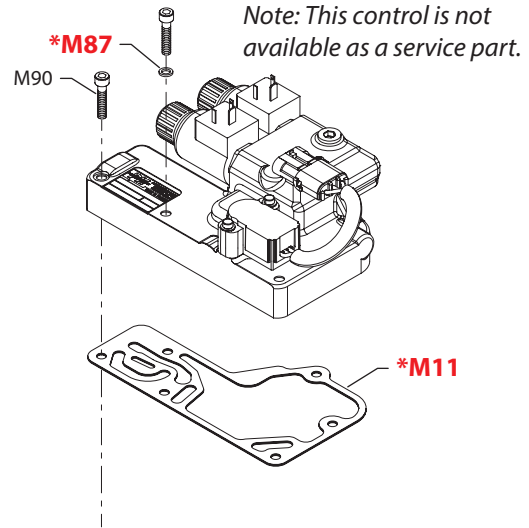
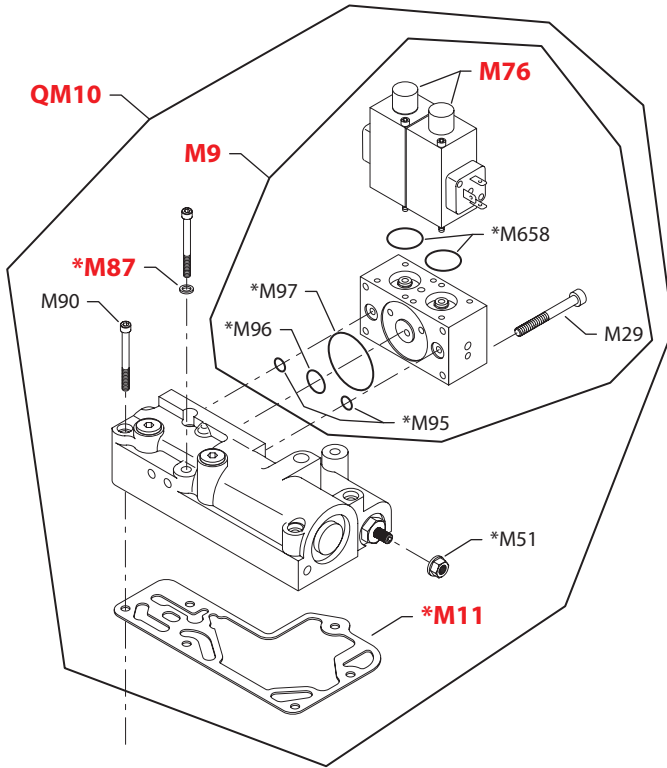
| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|-------|------------|----------|-----------------------|---------------------------------------|--------------------|
| MB | M11 | 95-28 | | 8800923 | Control gasket | 1 |
| | M14 | 95-28 | | 11072308 | Feedback link | 1 |
| | M26 | 95-28 | | 144725 (9004105-0110) | O-ring | 1 |
| | M27 | 95-28 | | 9006300-0044 | Retaining ring | 1 |
| | M70 | 95-28 | | 9800916 | Control handle | 1 |
| | M72 | 95-28 | | 040642 (9003513-0800) | Nut | 1 |
| | M83 | 95-28 | | 001131 (9004201-5000) | O-ring | 1 |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 |
| | QM10 | 95-28 | | 8510186 | Control kit with neutral start switch | 1 |
| | QM89 | 95-28 | | 80020540 | Neutral start switch | 1 |
| | QM210 | 95-28 | | 11096274 | Control seal kit | 1 |
| | NA | M11 | 95-46 | | 504733 | Control gasket |
| M14 | | 95-46 | | 11072308 | Feedback link | 1 |
| M26 | | 95-46 | | 144725 (9004105-0110) | O-ring | 1 |
| M27 | | 95-46 | | 9006300-0044 | Retaining ring | 1 |
| M51 | | 95-46 | | 345462 | Nut | 1 |
| M70 | | 95-46 | | 769075 | Control handle | 1 |
| M72 | | 95-46 | | 040642 (9003513-0800) | Nut | 1 |
| M87 | | 95-46 | 12-23 | 592386 | Seal washer | 1 |
| M90 | | 95-46 | | 9007314-0614 | Screw | 6 |
| QM10 | | 95-46 | | 11098672 | Control kit | 1 |
| QM210 | | 95-46 | | 11096273 | Control seal kit | 1 |



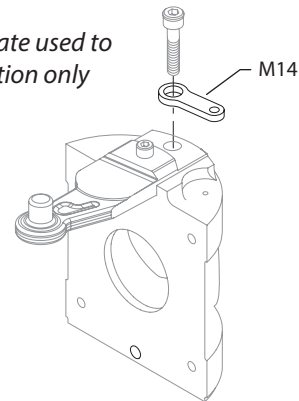
Variable displacement pump

(PB)

(SA & SB)



Generic swashplate used to show link location only



NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

* = included in control seal kit Q210

E101 796E

Enlarged **bold** type item numbers are recommended part to stock for servicing.

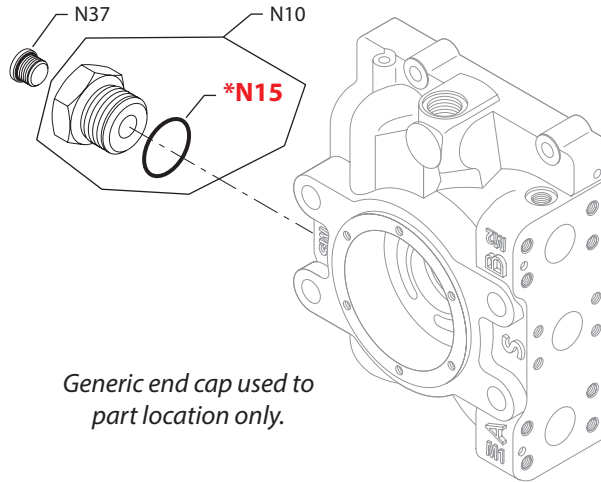

Variable displacement pump
Control

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|-------|------------|----------|-----------------------|----------------------|--------------------|
| PB | M9 | 95-28 | | 782045 | PDC, 24 volt | 1 |
| | M11 | 95-28 | | 8801241 | Gasket | 1 |
| | M14 | 95-28 | | 11072308 | Feedback link | 1 |
| | M29 | 95-28 | | 035592 | Screw | 4 |
| | M51 | 95-28 | | 9003509-0008 | Seal nut | 1 |
| | M76 | 95-28 | | 11001794 | Solenoid, 24 volt | 2 |
| | M87 | 95-28 | 12-37 | 592386 | Seal washer | 1 |
| | M90 | 95-28 | | 692889 (9007314-0611) | Screw | 6 |
| | M95 | 95-28 | | 011296 (9004105-0120) | O-ring | 2 |
| | M96 | 95-28 | | 688721 (9004104-0170) | O-ring | 1 |
| | M97 | 95-28 | | 314534 (9004104-0310) | O-ring | 1 |
| | M658 | 95-28 | | 635938 (9004100-0210) | O-ring | 2 |
| | QM10 | 95-28 | | 8510378 | Control kit, 24 volt | 1 |
| | QM210 | 95-28 | | 11096251 | Control seal kit | 1 |
| | SA | M11 | 95-28 | | 8800923 | Control gasket |
| M14 | | 95-28 | | 11072308 | Feedback link | 1 |
| M87 | | 95-28 | 12-23 | 592386 | Seal washer | 1 |
| M90 | | 95-28 | | 694356 | Screw | 6 |
| QM210 | | 95-28 | | 11096320 | Control seal kit | 1 |
| SB | M11 | 95-28 | | 8800923 | Control gasket | 1 |
| | M14 | 95-28 | | 11072308 | Feedback link | 1 |
| | M87 | 95-28 | 12-23 | 592386 | Seal washer | 1 |
| | M90 | 95-28 | | 694356 | Screw | 6 |
| | QM210 | 95-28 | | 11096320 | Control seal kit | 1 |



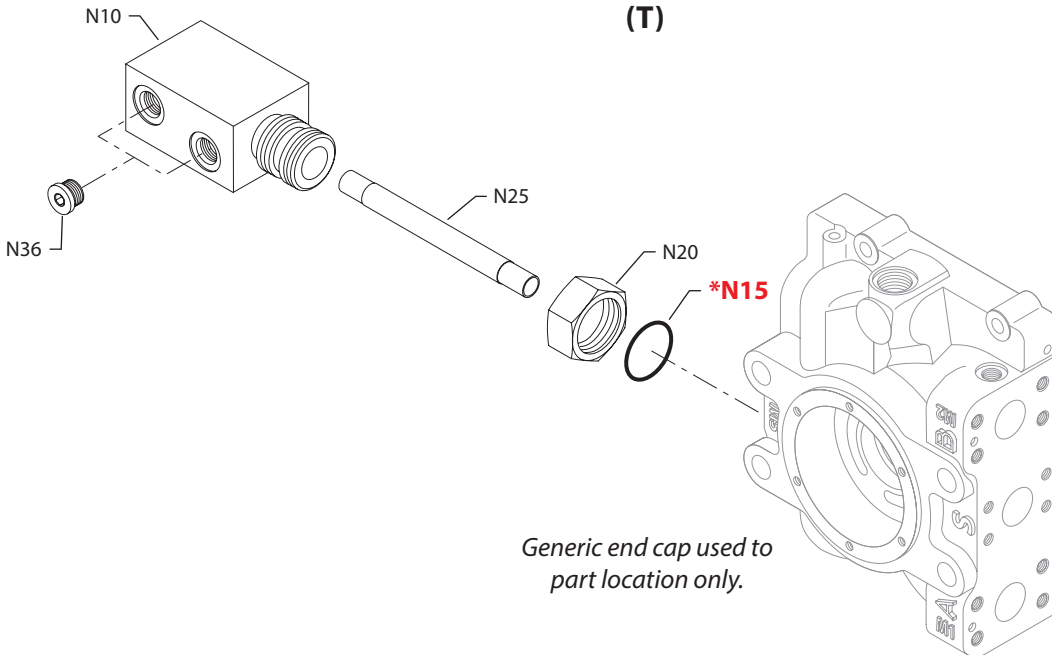
Variable displacement pump

(S)



Generic end cap used to part location only.

(T)



Generic end cap used to part location only.

E100 101E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.



Variable displacement pump

Filtration

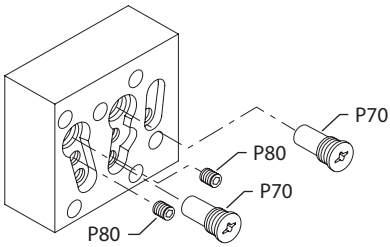
| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-----------------------|--------------------------|--------------------|
| D | | | | None | | |
| S | N10 | 95-28 | | 757831 | Reducer fitting assembly | 1 |
| | N15 | 95-28 | | 093823 (9004201-9200) | O-ring | 1 |
| | N37 | 95-28 | | 140644 | Plug assembly | 1 |
| T | N10 | 95-28 | | 507014 | Filter manifold | 1 |
| | N15 | 95-28 | | 093823 (9004201-9200) | O-ring | 1 |
| | N20 | 95-28 | | 11139975 | Nut | 1 |
| | N25 | 95-28 | | 507016 | Tube | 1 |
| | N36 | 95-28 | | 140644 | Plug assembly | 2 |



Variable displacement pump

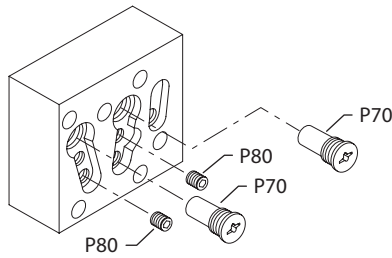
(1, 5, 6 & P)

View A
CW rotation



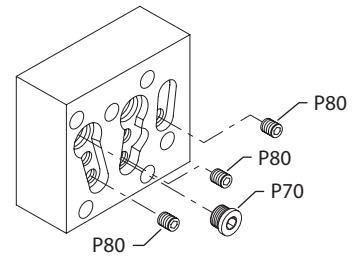
(1, 5, 6 & P)

View A
CCW rotation

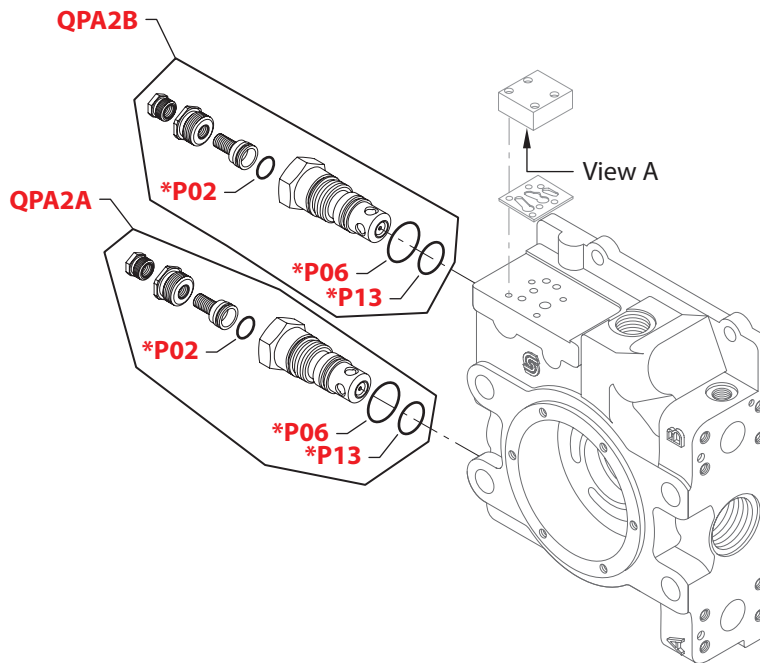


(2)

View A



(1, 2, 5, 6 & P)



E100 102E

* = included in overhaul seal kit Q210

Enlarged **bold** type item numbers are recommended part to stock for servicing.

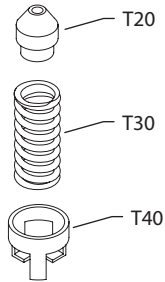

Variable displacement pump
High pressure regulation

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|-------|------------|----------|-----------------------|--------------------------|--------------------|
| 1 | P02 | 94-20 | | 775080 | O-ring | 2 |
| | P06 | 94-20 | | 360784 (9004105-0290) | O-ring | 2 |
| | P13 | 94-20 | | 775155 | O-ring | 2 |
| | P70 | 94-20 | | 8800188 | Check valve | 2 |
| | P80 | 94-20 | | 9005475-0004 | Special plug | 2 |
| | QPA2A | 94-20 | | 8510023-1 | Multi-function valve kit | 1 |
| | QPA2B | 94-20 | | 8510023-1 | Multi-function valve kit | 1 |
| | 2 | P02 | 94-20 | | 775080 | O-ring |
| P06 | | 94-20 | | 360784 (9004105-0290) | O-ring | 2 |
| P13 | | 94-20 | | 775155 | O-ring | 2 |
| P70 | | 94-20 | | 327007 (9005110-4400) | Plug assembly | 1 |
| P80 | | 94-20 | | 9005475-0004 | Pipe plug | 3 |
| QPA2A | | 94-20 | | 8510023-2 | Multi-function valve kit | 1 |
| QPA2B | | 94-20 | | 8510023-2 | Multi-function valve kit | 1 |
| 5 | | P02 | 94-20 | | 775080 | O-ring |
| | P06 | 94-20 | | 360784 (9004105-0290) | O-ring | 2 |
| | P13 | 94-20 | | 775155 | O-ring | 2 |
| | P70 | 94-20 | | 8800188 | Check valve | 2 |
| | P80 | 94-20 | | 9005475-0004 | Special plug | 2 |
| | QPA2A | 94-20 | | 8510274 | Multi-function valve kit | 1 |
| | QPA2B | 94-20 | | 8510274 | Multi-function valve kit | 1 |
| | 6 | P02 | 94-20 | | 775080 | O-ring |
| P06 | | 94-20 | | 360784 (9004105-0290) | O-ring | 2 |
| P13 | | 94-20 | | 775155 | O-ring | 2 |
| P70 | | 94-20 | | 8800188 | Check valve | 2 |
| P80 | | 94-20 | | 9005475-0004 | Special plug | 2 |
| QPA2A | | 94-20 | | 8510023-6 | Multi-function valve kit | 1 |
| QPA2B | | 94-20 | | 8510023-6 | Multi-function valve kit | 1 |
| P | | P02 | 94-20 | | 775080 | O-ring |
| | P06 | 94-20 | | 360784 (9004105-0290) | O-ring | 2 |
| | P13 | 94-20 | | 775155 | O-ring | 2 |
| | P70 | 94-20 | | 8800188 | Check valve | 2 |
| | P80 | 94-20 | | 9005475-0004 | Special plug | 2 |
| | QPA2A | 94-20 | | 8510292 | Multi-function valve kit | 1 |
| | QPA2B | 94-20 | | 8510292 | Multi-function valve kit | 1 |



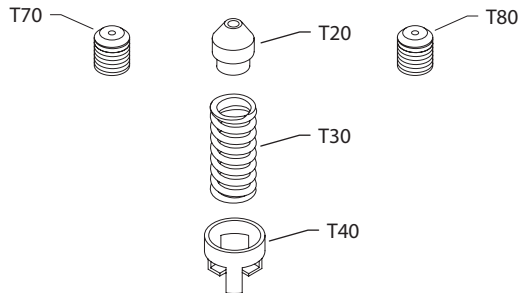
Variable displacement pump

**(01, 02, 03, 04, 05,
06, 09 & 22)**



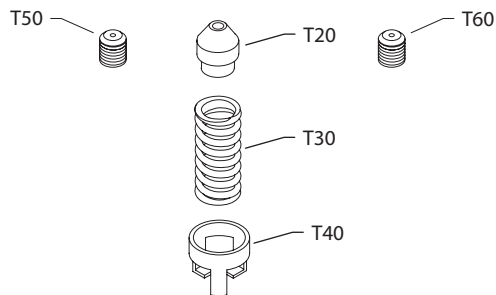
See control drawing
for orifice location

(38)



See control drawing
for orifice location

(26)



See control drawing
for orifice location

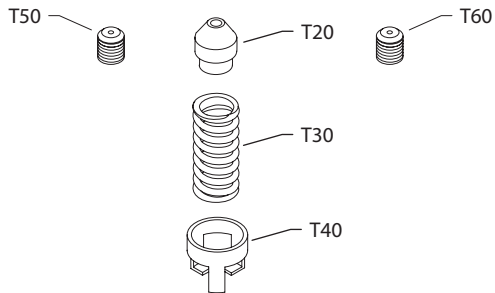

Variable displacement pump
Orifice

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|------------------|------------------------------|--------------------|
| 00 | | | | None | | |
| 01 | T20 | 95-28 | | 8801136 | Orificed check valve, .018" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 02 | T20 | 95-28 | | 8801139 | Orificed check valve, .026" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 03 | T20 | 95-28 | | 11061958 | Orificed check valve, .81mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 04 | T20 | 95-28 | | 11061970 | Orificed check valve, 1.02mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 05 | T20 | 95-28 | | 11061981 | Orificed check valve, 1.37mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 06 | T20 | 95-28 | | 11061993 | Orificed check valve, 1.57mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 09 | T20 | 95-28 | | 11062006 | Orificed check valve, 2.34mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 22 | T20 | 95-28 | | 8801137 | Orificed check valve, .022" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| 26 | T20 | 95-28 | | 11061958 | Orificed check valve, 0.81mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 598292 | Orifice plug, 0.8mm, M5 x 6 | 1 |
| | T60 | 95-28 | | 598292 | Orifice plug, 0.8mm, M5 x 6 | 1 |
| 33 | | | | None | | |
| 38 | T20 | 95-28 | | 8801139 | Orificed check valve, 0.26" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T70 | 95-28 | | 716837 | Orifice plug, 0.6mm, M8 x 8 | 1 |
| | T80 | 95-28 | | 716837 | Orifice plug, 0.6mm, M8 x 8 | 1 |



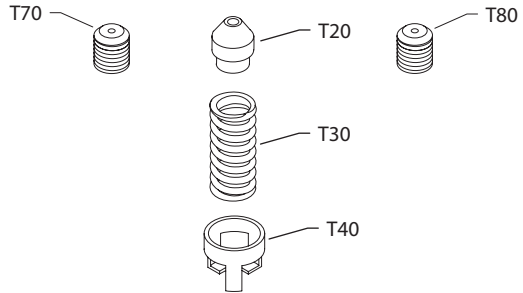
Variable displacement pump

(49, C3, C5 & C6)



See control drawing
for orifice location

(54 & 76)



See control drawing
for orifice location

(72 & C4)



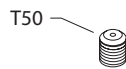
See control drawing
for orifice location

(A4)



See control drawing
for orifice location

(B1)



See control drawing
for orifice location

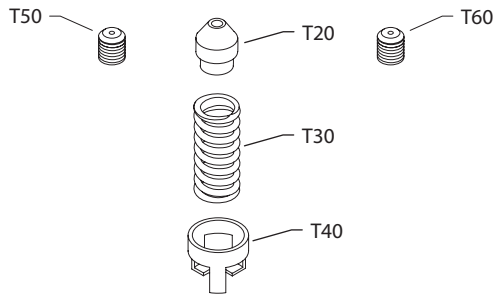

Variable displacement pump
Orifice

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|------------------|------------------------------|------------------------------|
| 49 | T20 | 95-28 | | 11061958 | Orificed check valve, 0.81mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 639120 | Orifice plug, 1.0mm, M5 x 6 | 1 |
| | T60 | 95-28 | | 639120 | Orifice plug, 1.0mm, M5 x 6 | 1 |
| | 54 | T20 | 95-28 | 12-29 | 11061970 | Orificed check valve, 1.02mm |
| T30 | | 95-28 | 12-29 | 679506 (8700007) | Spring | 1 |
| T40 | | 95-28 | 12-29 | 8801303 | Spring retainer | 1 |
| T70 | | 95-28 | 12-29 | 755793 | Orifice plug, 1.0mm, M8 x 8 | 1 |
| T80 | | 95-28 | 12-29 | 755793 | Orifice plug, 1.0mm, M8 x 8 | 1 |
| 72 | | T50 | 95-28 | | 617159 | Orifice plug, 1.8mm, M5 x 6 |
| | T60 | 95-28 | | 617159 | Orifice plug, 1.8mm, M5 x 6 | 1 |
| 76 | T20 | 95-28 | | 8801139 | Orificed check valve, 0.26" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T70 | 95-28 | | 578542 | Orifice plug, 0.8mm, M6 x 8 | 1 |
| | T80 | 95-28 | | 578542 | Orifice plug, 0.8mm, M6 x 8 | 1 |
| | A4 | T70 | 95-28 | | 578542 | Orifice plug, 0.8mm, M6 x 8 |
| T80 | | 95-28 | | 578542 | Orifice plug, 0.8mm, M6 x 8 | 1 |
| B1 | T50 | 95-28 | | 507042 | Orifice plug, 1.5mm, M6 x 8 | 1 |
| C3 | T20 | 95-28 | | 8801139 | Orificed check valve, 0.26" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 639153 | Orifice plug, 1.3 mm, M5 x 6 | 1 |
| | T60 | 95-28 | | 639153 | Orifice plug, 1.3 mm, M5 x 6 | 1 |
| | C4 | T50 | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 |
| T60 | | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |
| C5 | T20 | 95-28 | | 11061958 | Orificed check valve, 0.81mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |
| | T60 | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |
| | C6 | T20 | 95-28 | | 11061970 | Orificed check valve, 1.02mm |
| T30 | | 95-28 | | 679506 (8700007) | Spring | 1 |
| T40 | | 95-28 | | 8801303 | Spring retainer | 1 |
| T50 | | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |
| T60 | | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |



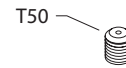
Variable displacement pump

(C7 & K3)



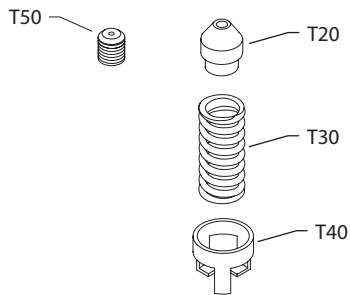
See control drawing
for orifice location

(G1)



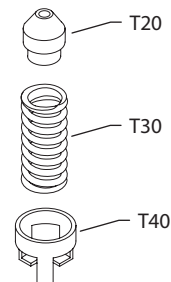
See control drawing
for orifice location

(G4, G8, GB, GD, GF & GJ)



See control drawing
for orifice location

(K1)



See control drawing
for orifice location

(P1)



See control drawing
for orifice location


Variable displacement pump
Orifice

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|------------------|------------------------------|--------------------|
| C7 | T20 | 95-28 | | 11061981 | Orificed check valve, 1.02mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |
| | T60 | 95-28 | | 639161 | Orifice plug, 1.4 mm, M5 x 6 | 1 |
| G1 | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| G4 | T20 | 95-28 | | 8801136 | Orificed check valve, .018" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| G8 | T20 | 95-28 | | 8801139 | Orificed check valve, .026" | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| GB | T20 | 95-28 | | 11061958 | Orificed check valve, 0.81mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| GD | T20 | 95-28 | | 11061993 | Orificed check valve, 1.57mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| GF | T20 | 95-28 | | 11061970 | Orificed check valve, 1.02mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| GJ | T20 | 95-28 | | 11061981 | Orificed check valve, 1.37mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 310771 | Orifice plug, 1.2 mm, M6 x 6 | 1 |
| K1 | T20 | 95-28 | | 11061981 | Orificed check valve, 1.37mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| K3 | T20 | 95-28 | | 11061993 | Orificed check valve, 1.57mm | 1 |
| | T30 | 95-28 | | 679506 (8700007) | Spring | 1 |
| | T40 | 95-28 | | 8801303 | Spring retainer | 1 |
| | T50 | 95-28 | | 639120 | Orifice plug, 1.0 mm, M5 x 6 | 1 |
| | T60 | 95-28 | | 639120 | Orifice plug, 1.0 mm, M5 x 6 | 1 |
| P1 | T70 | 94-20 | | 508014 | Orifice plug, 1.0 mm, M6 x 8 | 1 |
| | T80 | 94-20 | | 508014 | Orifice plug, 1.0 mm, M6 x 8 | 1 |


Variable displacement pump
Overhaul seal kit

| Order Code | Item | Date Begin | Date End | Part Number | Part Name | Qty. per Model/Kit |
|------------|------|------------|----------|-----------------------|------------------------------------|--------------------|
| | Q210 | 95-28 | | 11095664 | Service seal kit, base pump, 250cc | 1 |
| | C70 | 95-28 | | 308643 | Screw | 4 |
| | E40 | 95-28 | | 042432 | Seal nut, M10 | 2 |
| | E50 | 95-28 | | 517380 | O-ring | 1 |
| | E60 | 95-28 | | 517231 | Screw | 6 |
| | F11 | 95-28 | | 504627 | O-ring | 2 |
| | F12 | 95-28 | | 507802 | Piston ring | 2 |
| | F40 | 95-28 | | 9004104-1520 | O-ring | 2 |
| | F50 | 95-28 | | 755272 | O-ring | 2 |
| | F112 | 95-28 | | 649822 | Seal nut, M14 | 1 |
| | F212 | 95-28 | | 649822 | Seal nut, M14 | 1 |
| | G30 | 95-28 | | 511809 | End cap gasket | 1 |
| | J40 | 95-28 | | 11147582 | O-ring | 1 |
| | J50 | 95-28 | | 505068 | O-ring | 1 |
| | K50 | 95-28 | | 001156 (9004201-7500) | O-ring | 1 |
| | L25 | 95-28 | | 11053971 | Shaft seal carrier assembly | 1 |
| | N15 | 95-28 | | 093823 (9004201-9200) | O-ring | 1 |
| | P02 | 95-28 | | 775080 (9004100-0170) | O-ring | 2 |
| | P06 | 95-28 | | 360784 (9004105-0290) | O-ring | 2 |
| | P13 | 95-28 | | 775155 | O-ring | 2 |



Service Bulletin: SB-1996-004

Products affected Series 90 42, 130, 180, and 250cc variable pumps

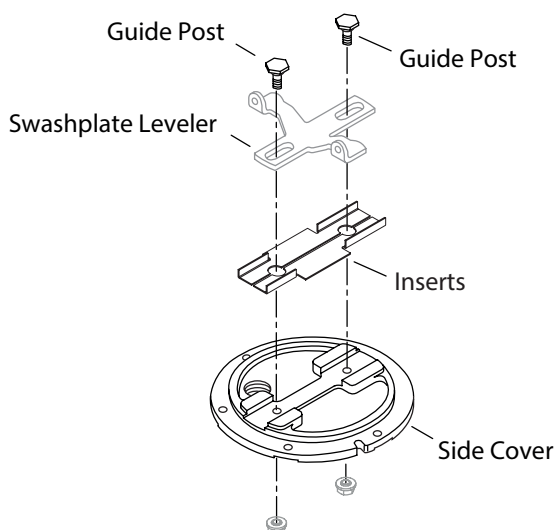
Subject Side cover design change

Description As a product improvement, Sauer-Sundstrand is changing the side cover and swashplate leveler (T-Bar) guide post design.

The new design side cover will have two hardened inserts in the machined slot which serves as a guide for the swashplate leveler, and modified guide posts. The swashplate leveler does not change.

Old guide posts will remain available for service requirements of pumps with the old design side cover.

The old style side cover will be obsoleted and no longer available as a service part. A service kit has been created for replacing the old design side cover. The kit includes the new side cover, guide posts and inserts. Piece parts are not interchangeable..



Models affected All series 42, 130, 180, and 250cc variable pumps

Serial numbers Change occurred at serial number N-96-08-xxxxx.

Part numbers affected

| Description | Old part numbers | | New part numbers | | |
|-------------|------------------|------------|------------------|------------|-----------------|
| | Guide post | Side cover | Insert assy. | Guide post | Replacement kit |
| 42 cc | 344465 | 751305 | 506916 | 506369 | 506380 |
| 130 cc | 503205 | 746107 | 8300004 | 506368 | 11027814 |
| 180 cc | 503205 | 746404 | 506914 | 506368 | 506290 |
| 250 cc | 503205 | 746404 | 506914 | 506368 | 506290 |

Parts disposition ■ Interchangeable - piece parts are not interchangeable

**Service Bulletin: SB-1999-065A**

| | |
|--------------------------|---|
| Products affected | Series 90 75, 100, 130, 180, and 250cc variable displacement pumps |
| Subject | Hydraulic displacement control gasket and washplate bearing locator pin retention |
| Description | <p>The Series 90 75cc, 100cc, 130cc, 180cc, and 250cc variable displacement pumps utilize a common gasket to seal the joint between the displacement control housing and main pump housing.</p> <p>In November 1998, Sauer-Danfoss introduced a new gasket design for Hydraulic Displacement Controls (HDC - all options), version 2 Electrical Displacement Controls (EDC2 - options EE and EN), and two amp current control (options PA and PB) equipped pumps (see SB-1998-038). The purpose of this gasket is primarily to seal the joint and aid in the retention of the bearing cage locator pin in the main pump housing. Sauer-Danfoss has identified that the new gasket may not adequately aid in the retention of this pin in 75cc pump sizes due to casting and machining tolerances. Installations which are particularly sensitive to pin retention include those oriented with the control on the side or on the bottom when the pump is installed. In these types of installations, it is possible for the pin to come out of its position in the pump housing. This will result in a loss of alignment between the swashplate and swashplate bearing assembly and the potential for erratic pump control and/or system performance.</p> <p>To address this situation, Sauer-Danfoss has introduced a design modification to the control gasket. The modification will insure that the cage locator pin is retained in 75cc pumps in all circumstances, while still maintaining the desired gasket clamp load to avoid leaks.</p> <p>The new gasket is completely interchangeable with the previous gasket. Sauer-Danfoss recommends that the previous control gasket be replaced immediately on 75cc pump assemblies, with controls noted above, in which the control is on the side or on the bottom of the pump. The pump serial numbers involved are A-98-41-xxxx through A-99-49-xxxx. It is not required to replace the gasket in pumps with the control in the top position, until the initial servicing of the pump assembly.</p> <p>The 100cc, 130cc, 180cc, and 250cc pumps are not dependent upon the gasket to maintain retention of the bearing cage locator pin and are not affected by the information above.</p> <p>The new gasket has replaced the previous gasket in all new pump assemblies with Hydraulic Displacement Control (HDC), version 2 Electrical Displacement Control (EDC2 - EE and EN), and two amp current (PA and PB) controls. The new gasket has also been placed in all appropriate control kits and overhaul seal kits. Page 3 of this bulletin will assist you in identifying the new gasket from the previous gasket.</p> |
| Models affected | 95-2xxx, 952xxxx, 96-2xxx, 962xxxx, 97-2xxx, 972xxxx, 98-2xxx, 982xxxx, 99-2xxx, and 992xxxx variable displacement pumps equipped with hydraulic displacement controls and specific option electronic displacement control. (EE, EN, PA, PB) |
| Serial numbers | Sauer-Danfoss Ames 75cc pump production: A-99-50-xxxx. Sauer-Danfoss Ames 100cc pump production: A-00-25-xxxx. Sauer-Danfoss Neumunster production: N-00-01-xxxx. |



Service Bulletin: SB-1999-065A

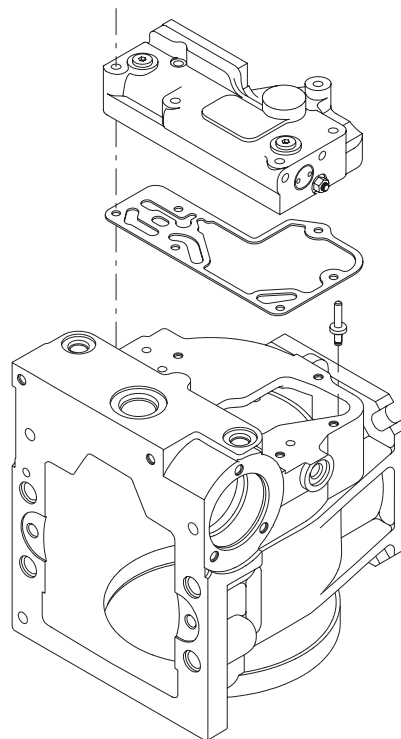
Part numbers affected

| Previous gasket | New gasket |
|-----------------|------------|
| 511608 | 8801241 |

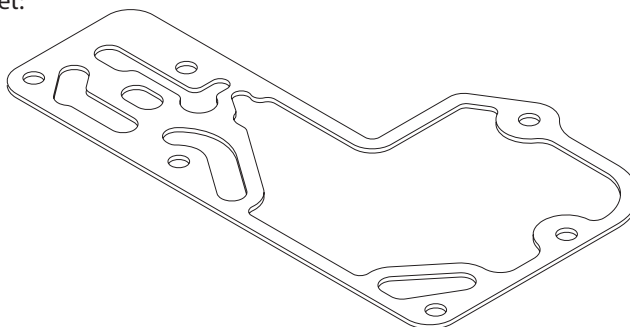
Parts disposition

■ Interchangeable

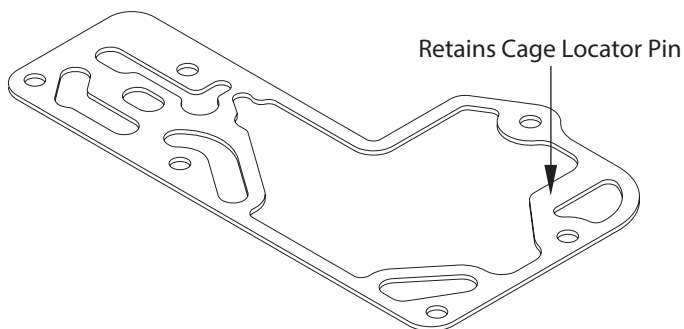
Control Gasket Location:



Previous Gasket:



New Gasket:



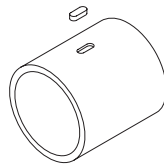


Service Bulletin: SB-2002-040

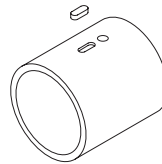
Products affected Series 90 250cc variable pumps

Subject Charge pump shaft

Description As a product improvement, Sauer-Danfoss has changed the charge pump drive shaft. This change will incorporate two drain holes in the shaft. These drain holes will prevent pressure build up at the end of the pump input shaft. Relieving this pressure reduces the axial load on the shaft and increases the life of the front roller bearing. The old charge pump shaft part number will become obsolete and not available for service. The new shaft is a direct replacement and can be used in older 250cc pumps.



Old shaft



New shaft

Models affected All series 250cc variable pumps

Serial numbers Change became effective at serial number N-02-41-xxxxx.

Part numbers affected

| Old part numbers | New part numbers |
|------------------|------------------|
| 513439 | 518691 |

Parts disposition ■ Interchangeable



Service Bulletin: SB-2009-074

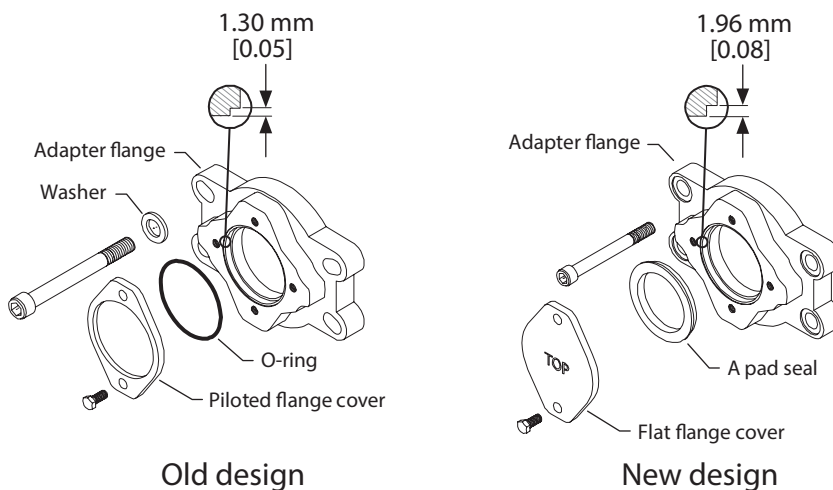
Products affected Series 90 42, 130, 180 and 250cc variable pumps

Subject SAE A auxiliary mounting flange, O-ring seal

Part numbers affected Sauer-Danfoss is pleased to announce a design improvement on the SAE A auxiliary mounting flange adapter on its series 90 pumps. The frame sizes affected by this change are 42, 130, 180 and 250cc. All manufacturing locations producing these pumps will be changed to this configuration.

The improvement comes in the form of a more robust sealing geometry with a larger cross-section O-ring. The O-ring groove in the flange will now be sized to mate with a 2.62mm [0.103"] cross-section O-ring rather than the old 1.78mm [0.070"] cross-section O-ring. The Sauer-Danfoss part number for the new O-ring is 9004104-1520 (2.62mm [0.070"] x 82.22mm [3.237"]). The larger cross-section sealing geometry allows for the use of a donut style A pad seal and a new flat cover for improved assembly. This new configuration is qualified as a running cover. When installing an auxiliary pump, the donut style A pad seal must be discarded and the part number 9004104-1520 O-ring used.

The pumps will now be supplied with the donut style seal and new flat cover, instead of the small O-ring and stepped cover plate (shown in the drawing below).



Models affected All series 90 42, 130, 180 and 250cc pumps with an SAE A auxiliary mounting flange.

Serial numbers Change became effective at serial number N-09-30-xxxxx. (20 July 2009)

Part numbers affected

| Description | Old part number | New part number | Used on |
|------------------|-----------------|-----------------|---------------|
| A flange adapter | 511040 | 520944 | 42cc |
| A flange adapter | 505113 | 520946 | 130cc |
| A flange adapter | 505136 | 520949 | 180 and 250cc |
| O-ring | 9004104-0420 | 9004104-1520 | all sizes |
| A pad seal | N/A | 4800482 | all sizes |
| Flange cover | 9802336 | 4460586 | all sizes |

Parts disposition ■ Interchangeable if new O-ring or if the pad seal and new cover are used.



Service Bulletin: SB-2009-075

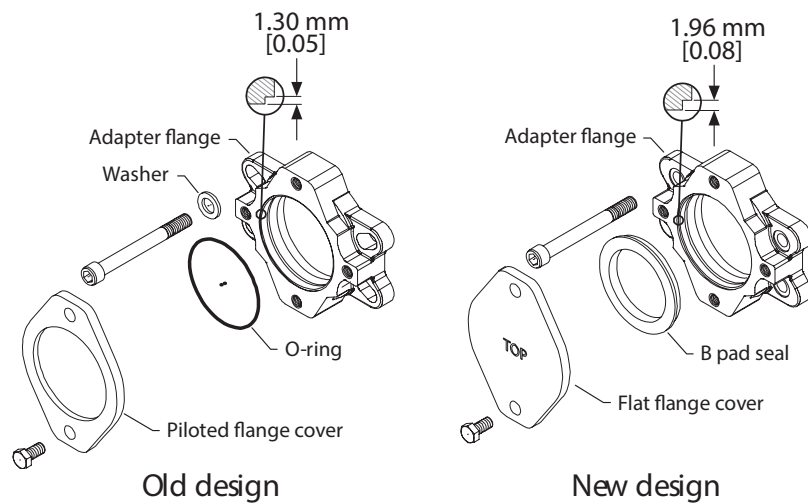
Products affected Series 90 42, 130, 180 and 250cc variable pumps

Subject SAE B auxiliary mounting flange, O-ring seal

Part numbers affected Sauer-Danfoss is pleased to announce a design improvement on the SAE B auxiliary mounting flange adapter on its series 90 pumps. The frame sizes affected by this change are 42, 130, 180 and 250cc. All manufacturing locations producing these pumps will be changed to this configuration.

The improvement comes in the form of a more robust sealing geometry with a larger cross-section O-ring. The O-ring groove in the flange will now be sized to mate with a 2.62mm [0.103"] cross-section O-ring rather than the old 1.78mm [0.070"] cross-section O-ring. The Sauer-Danfoss part number for the new O-ring is 9004104-1540 (2.62mm [0.070"] x 94.92mm [3.737"]). The larger cross-section sealing geometry allows for the use of a donut style B pad seal and a new flat cover for improved assembly. This new configuration is qualified as a running cover. When installing an auxiliary pump, the donut style B pad seal must be discarded and the part number 9004104-1540 O-ring used.

The pumps will now be supplied with the donut style seal and new flat cover, instead of the small O-ring and stepped cover plate (shown in the drawing below).



Models affected All series 90 42, 130, 180 and 250cc pumps with an SAE B auxiliary mounting flange.

Serial numbers Change became effective at serial number N-09-30-xxxxx. (20 July 2009)

Part numbers affected

| Description | Old part number | New part number | Used on |
|------------------|-----------------|-----------------|---------------|
| B flange adapter | 506778 | 520945 | 42cc |
| B flange adapter | 503230 | 520947 | 130cc |
| B flange adapter | 11000255 | 11039180 | 130cc |
| B flange adapter | 505132 | 520950 | 180 and 250cc |
| O-ring | 9004104-0450 | 9004104-1540 | all sizes |
| B pad seal | N/A | 8801061 | all sizes |
| Flange cover | 4460370 | 8801059 | all sizes |

Parts disposition ■ Interchangeable if new O-ring or if the pad seal and new cover are used.



Service Bulletin: SB-2009-076

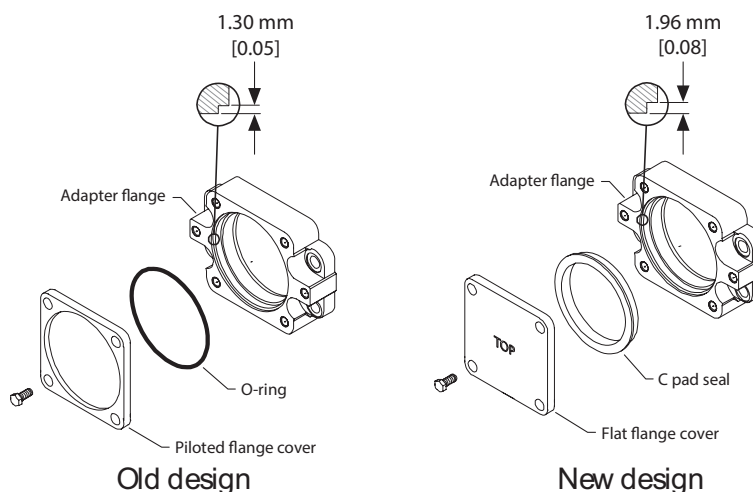
Products affected Series 90 130, 180 and 250cc variable pumps

Subject SAE C auxiliary mounting flange, O-ring seal

Part numbers affected Sauer-Danfoss is pleased to announce a design improvement on the SAE C auxiliary mounting flange adapter on its series 90 pumps. The frame sizes affected by this change are 130, 180 and 250cc. All manufacturing locations producing these pumps will be changed to this configuration.

The improvement comes in the form of a more robust sealing geometry with a larger cross-section O-ring. The O-ring groove in the flange will now be sized to mate with a 2.62mm [0.103"] cross-section O-ring rather than the old 1.78mm [0.070"] cross-section O-ring. The Sauer-Danfoss part number for the new O-ring is 9004104-1580 (2.62mm [0.070"] x 120.32mm [4.737"]). The larger cross-section sealing geometry allows for the use of a donut style C pad seal and a new flat cover for improved assembly. This new configuration is qualified as a running cover. When installing an auxiliary pump, the donut style C pad seal must be discarded and the part number 9004104-1580 O-ring used.

The pumps will now be supplied with the donut style seal and new flat cover, instead of the small O-ring and stepped cover plate (shown in the drawing below).



Models affected All series 90 130, 180 and 250cc pumps with an SAE C auxiliary mounting flange.

Serial numbers Change became effective at serial number N-09-30-xxxxx. (20 July 2009)

Part numbers affected

| Description | Old part number | New part number | Used on |
|------------------|-----------------|-----------------|-----------------|
| C Flange adapter | 505116 | 513617 | 130 cc |
| C Flange adapter | 508407 | 11039184 | 130 cc |
| C Flange adapter | 515116 | 513617 | 130 cc |
| C Flange adapter | 505139 | 520951 | 180cc and 250cc |
| C Flange adapter | 508406 | 11039178 | 180cc and 250cc |
| O-ring | 9004100-0480 | 9004104-1580 | All units |
| C pad seal | NA | 8801062 | All units |
| Flange cover | 8800406 | 8801060 | All units |

Parts disposition ■ Interchangeable if new O-ring or if the pad seal and new cover are used.



Service Bulletin: SB-2011-032

Products affected Series 90 180cc variable pumps

Subject Pump redesign

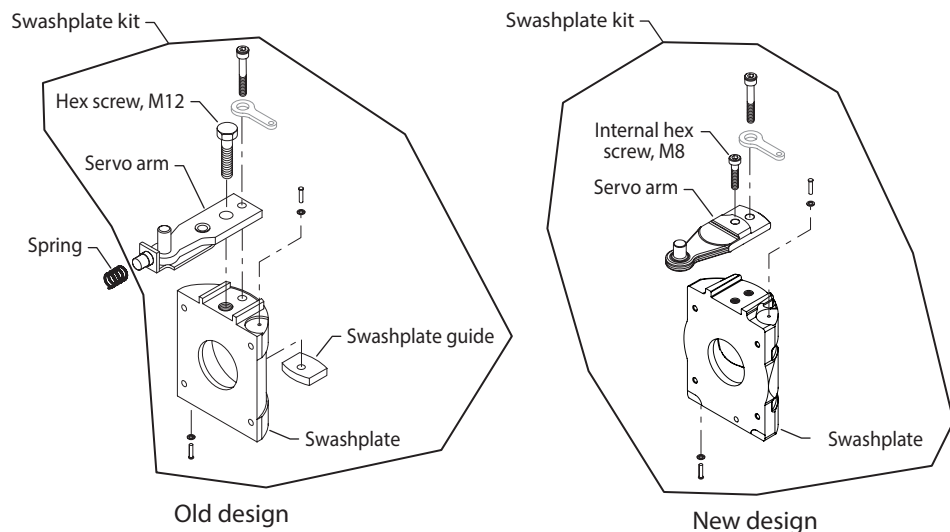
Description As a global improvement, the series 90 180/250cc pumps have redesigned the following components: servo arm, servo arm screw, swashplate guide and pump housing. This is a non-interchangeable change. Model numbers and order codes will not be changed.

A “one piece” servo arm is introduced. The pin that engages the servo piston is now machined as part of the servo arm instead of pressed in. The old servo arm will remain available as a service part for a period of time.

One of the two screws that hold the servo arm to the swashplate has changed from a M12 external hex to a M8 internal hex screw. The old screw will remain available as a service part for a period of time.

The swashplate position is now guided by the fit between the servo arm and the pump housing. A “shelf” on the servo arm fits under a boss in the housing to provide a fixed clearance. The swashplate was previously held down with a spring and bracket, which was riveted to the servo arm. The servo arm to housing clearance now limits lateral movement of the swashplate. The swashplate guide that was bolted to the bottom of the swashplate has been removed. The old swashplate guide will remain available as a service part for a period of time.

The housing is modified internally to provide the servo arm pivot. The old housing will remain available as a service part for a period of time.





Service Bulletin: SB-2011-032

Models affected Series 90, 180cc and 250cc pumps.

Serial numbers This change became effective at serial number A-11-40-xxxxx. (3 Oct 2011)

Part numbers affected

| Description | Old part number | New part number |
|--------------------------------|-----------------|-----------------|
| Housing 180cc assy without PPU | 789438 | 11097202 |
| Housing 180cc assy with PPU | 519646 | 11097202 |
| Swashplate 180cc | 521426 | 11094403 |
| Swashplate kit, 180cc | 11107093 | 11097626 |
| Housing 250cc with PPU assy | 515967 | 11088644 |
| Swashplate 250cc | 521428 | 11088847 |
| Swashplate kit, 250cc | 11107094 | 11097784 |
| Servo arm 180/250cc | 746339 | 11061195 |
| Screw, servo arm | 746362 | 519150 |
| Swashplate guide, 180/250cc | 745703 | not used |
| Spring | 746396 | not used |

Parts disposition ■ Non-interchangeable



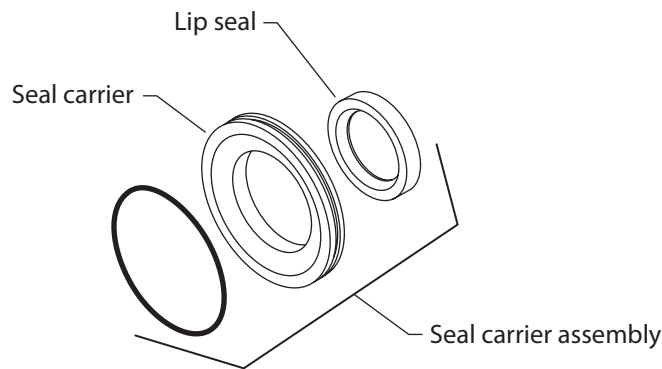
Service Bulletin: SB-2012-039

Products affected Series 90 180 and 250cc pumps

Subject Shaft seal change

Description A supplier change for the shaft seal used in Series 90 180 and 250cc pumps has been made as part of globalization of the entire Sauer-Danfoss product line. The new lip seal has a smaller O.D., and the I.D. of the seal carrier changed accordingly. The old lip seal and seal carrier will become obsolete and not available for service.

The seal carrier assembly part number has changed to better track this change. The new seal carrier assembly is interchangeable, but the piece parts are not.



Models affected Series 90 180 and 250cc pumps

Serial numbers This change became effective at serial number N-12-17-XXXXX (25-Apr-2012)

Part numbers affected

| Description | Old part number | New part number |
|-----------------------|-----------------|-----------------|
| Seal carrier assembly | 512637 | 11053971 |
| Lip seal | 9008000-0114 | 519021 |

Parts disposition Non-interchangeable
Order replacement parts
Revise existing part orders



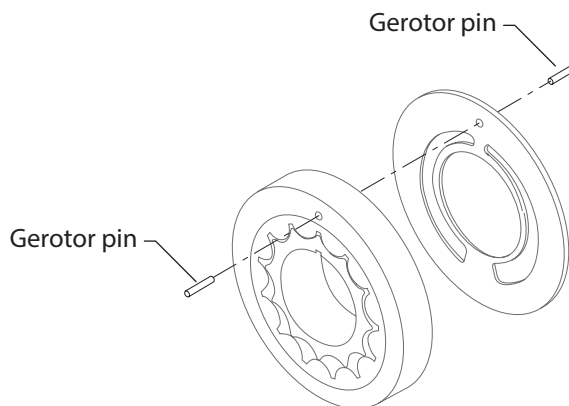
Service Bulletin: SB-2015-038

Products affected Series 90 130, 180 and 250cc pumps

Subject Gerotor pin change

Description As an assembly aid, some of the charge pump gerotor pins used in 130, 180 and 250cc pumps are being changed from one to two pins. This change is being made to reduce the chance of mis-locating the pin in the end cap or gerotor cover during the assembly process.

There will be three new lengths of pins used in these pumps. The new pin lengths will be 16, 20 and 26mm. To aid in the identification of the new pins, the 20mm pins will be yellow/gold in color.



Models affected Series 90, 130, 180 and 250cc pumps

Serial numbers

| Frame size | NMS effectivity date |
|------------|----------------------|
| 130 cc | N-15-14-xxxxx |
| 180 cc | N-15-04-xxxxx |
| 250 cc | N-15-02-xxxxx |

Part numbers affected

| Frame size | Old pin (1) | | New pin (2) | |
|------------|-------------|-------------|-------------|-------------|
| | Length | Part number | Length | Part number |
| 130 cc | 32mm | 308718 | 16mm | 11152774 |
| 180 cc | 40mm | 750133 | 20mm | 11152775 |
| 250 cc | 55mm | 504507 | 26mm | 11152778 |

Parts disposition

Interchangeable
Use parts in stock



Notes



Notes



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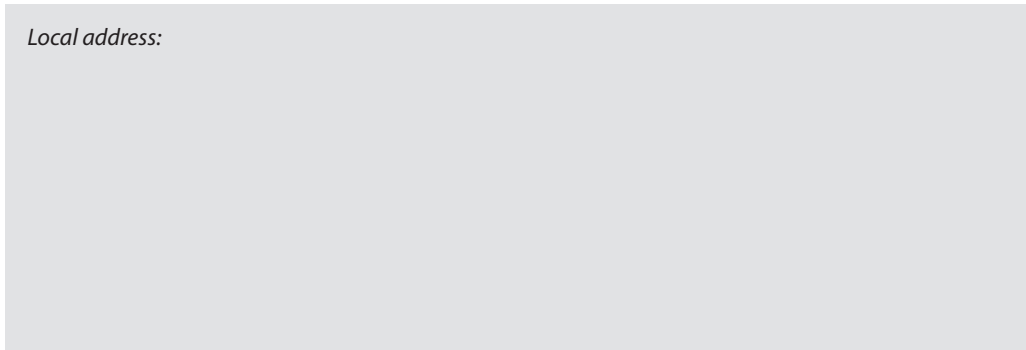
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