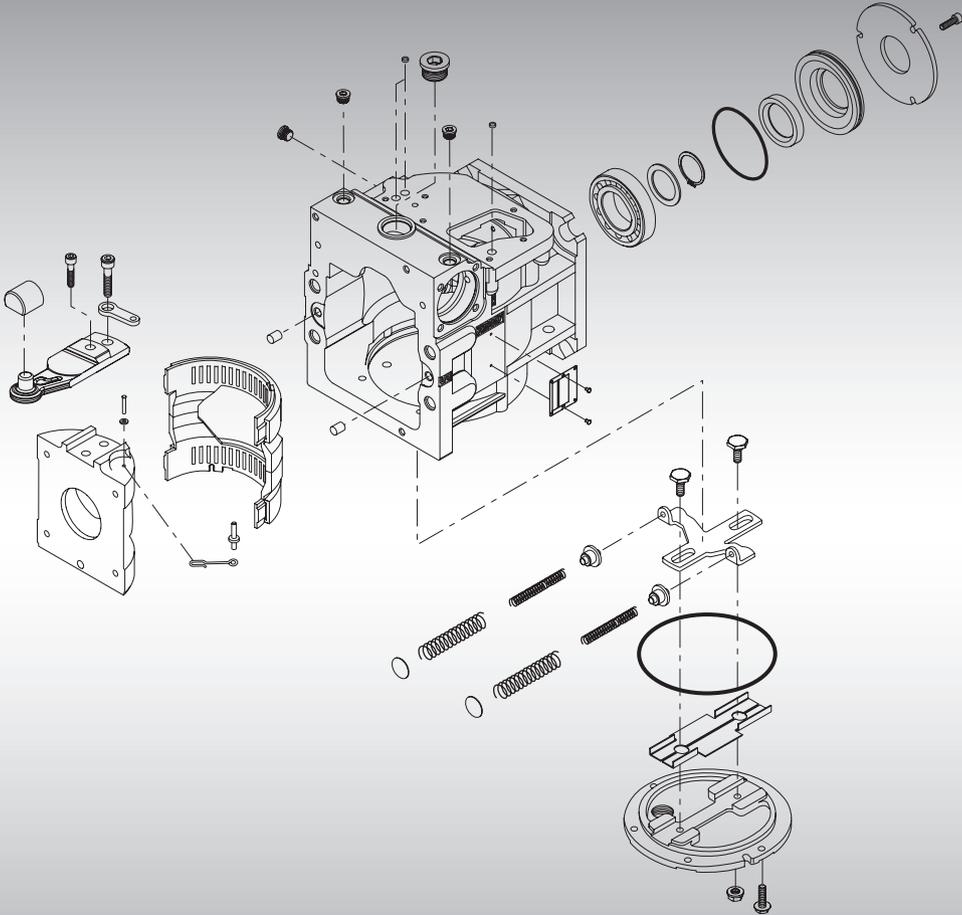




Parts Manual

Series 90

# 130cc Axial Piston Pump





**Contents**

**General information**

Service parts identification..... 4  
Nameplate ..... 4  
Date code ..... 5  
Service bulletins ..... 5  
Procedure to identify a part ..... 5  
Order code..... 7

**Variable displacement pump**

Common parts ..... 8-9  
Special hardware ..... 10-57  
Displacement limitation ..... 58-71  
End cap ..... 72-91  
Charging system..... 92-95  
Auxiliary mounting..... 96-111  
Charge pressure relief..... 110-111  
Shaft..... 112-113  
Control ..... 114-149  
Filtration ..... 150-155  
High pressure protection ..... 156-161  
Orifice ..... 162-173  
Overhaul seal kit..... 174



Contents

<b>Service bulletin</b>	BLN-10107 (charge pump design change) .....	176-177
	SB-1991-014 (multi-function valve installation torque).....	178
	SB-1992-003 (pump redesign).....	179-181
	SB-1994-025 (change pump design change) .....	182-183
	SB-1994-036 (intergal filtration manifold) .....	184
	SB-1995-003 (MDC w/electric override manifold).....	185
	SB-1996-004 (side cover redesign) .....	186
	SB-1997-018 (swashplate leveler spring and spring seats).....	187
	SB-1999-010 (swashplate leveler design change).....	188
	SB-1999-041 (side cover insert material change) .....	189
	SB-1999-065 (HDC gasket change).....	190-191
	SB-2000-022 (displacement limiter screw) .....	192-193
	SB-2002-014 (side cover screw change) .....	194
	SB-2007-008A (redesign block point change) .....	195-196
	SB-2009-074 (A pad flange/seal) .....	197
	SB-2009-075 (B pad flange/seal).....	198
	SB-2009-076 (C pad flange/seal).....	199



## 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, 130 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, 130 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 90L130 EA 1 NN 80 L 3 F1 H 03 GBA 35 35 24. Use the following procedures to determine the part number of the drive shaft used on this pump.

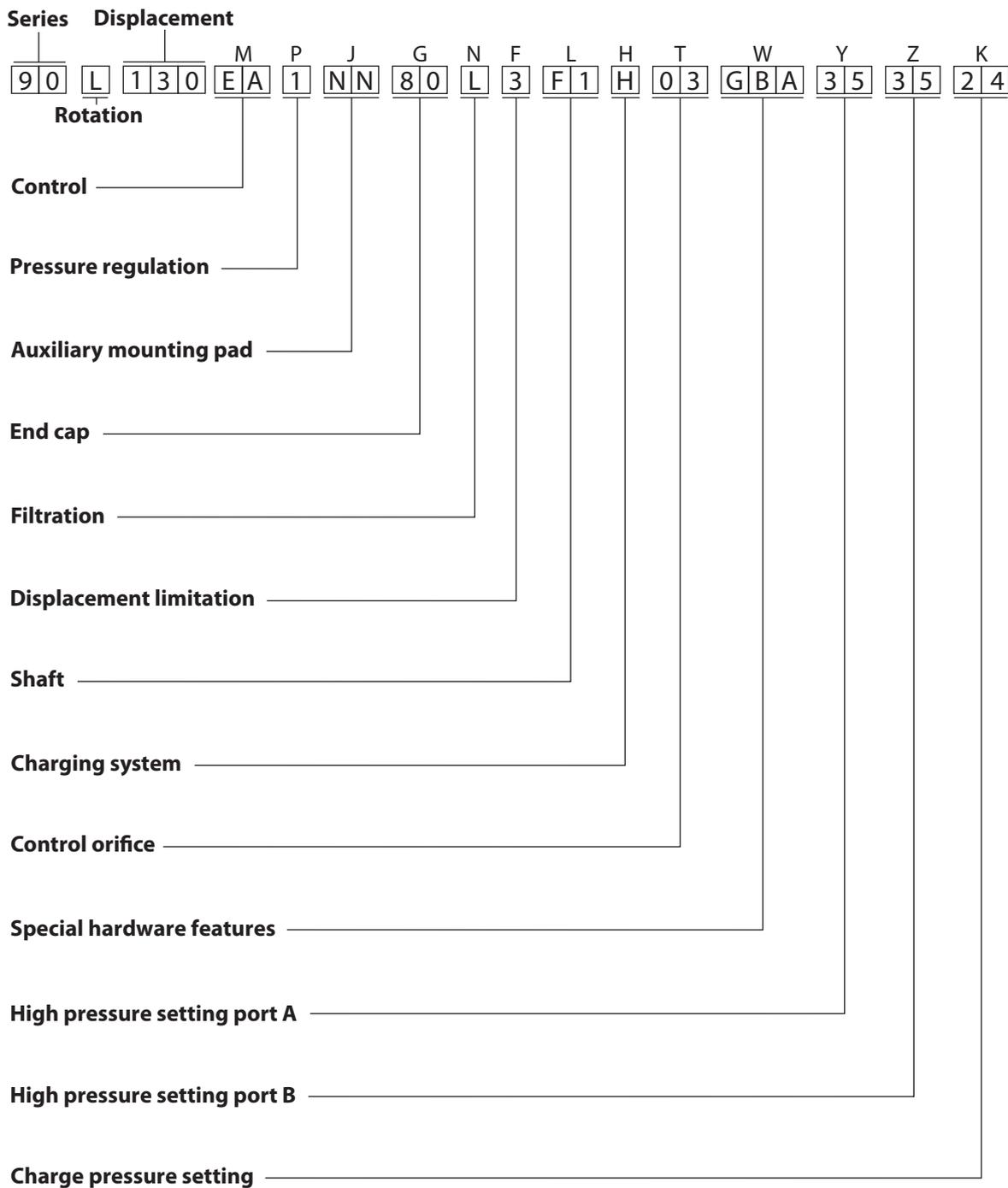
- 1) Referring to the input shaft module in the Order Code (see page 7), the input shaft option for this pump is identified by the code "F1". (90L130 EA 1 NN 80 L 3 **F1** H 03 GBA 35 35 24)
- 2) Referring to the Service Parts List, find the shaft group. Next find the order code that relates to this unit, which is "F1". The shaft is found to be item L100 and part number 335695.



**Notes**



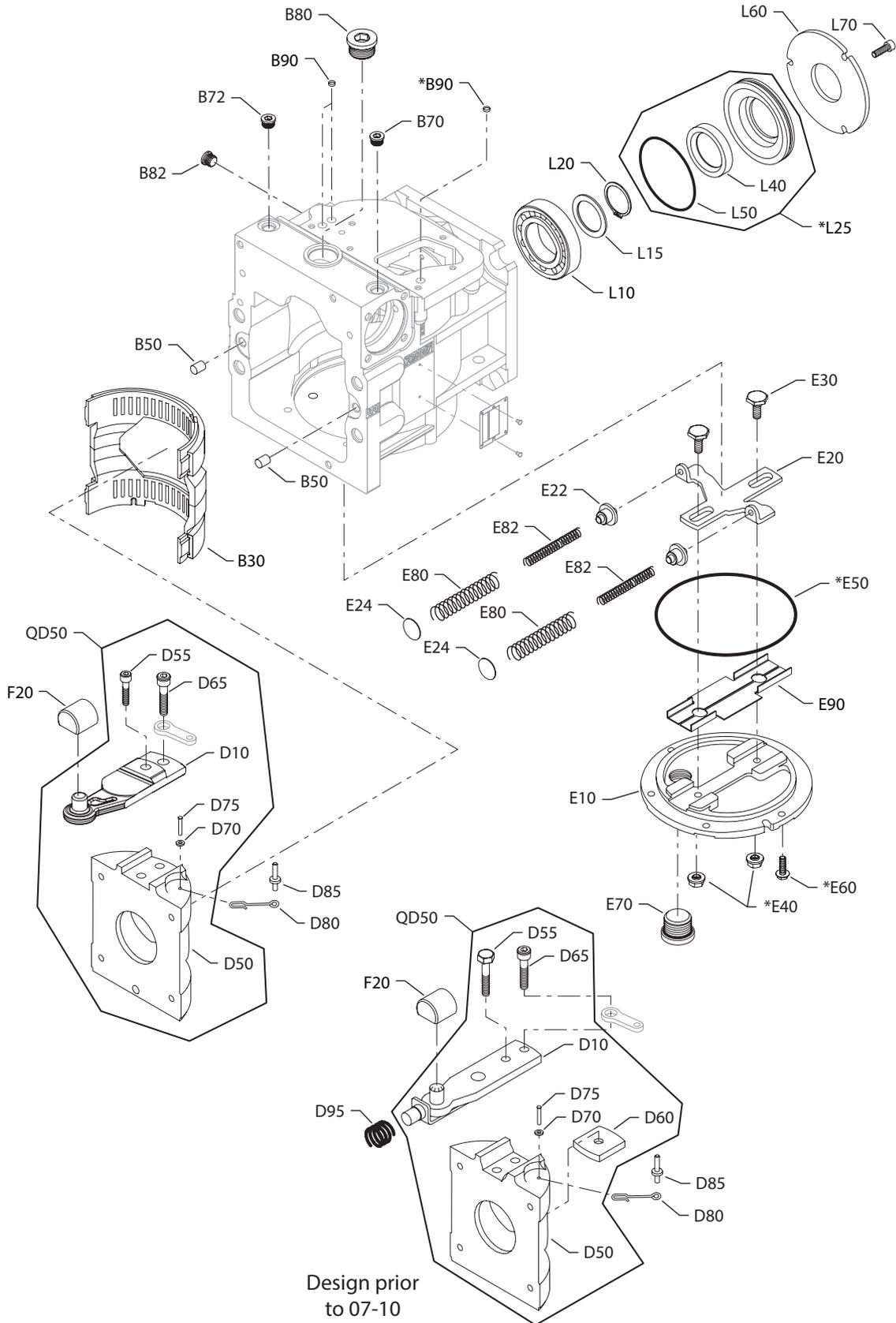
Order Code



P100 713E



Variable displacement pump



E100 879E

\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Common parts**

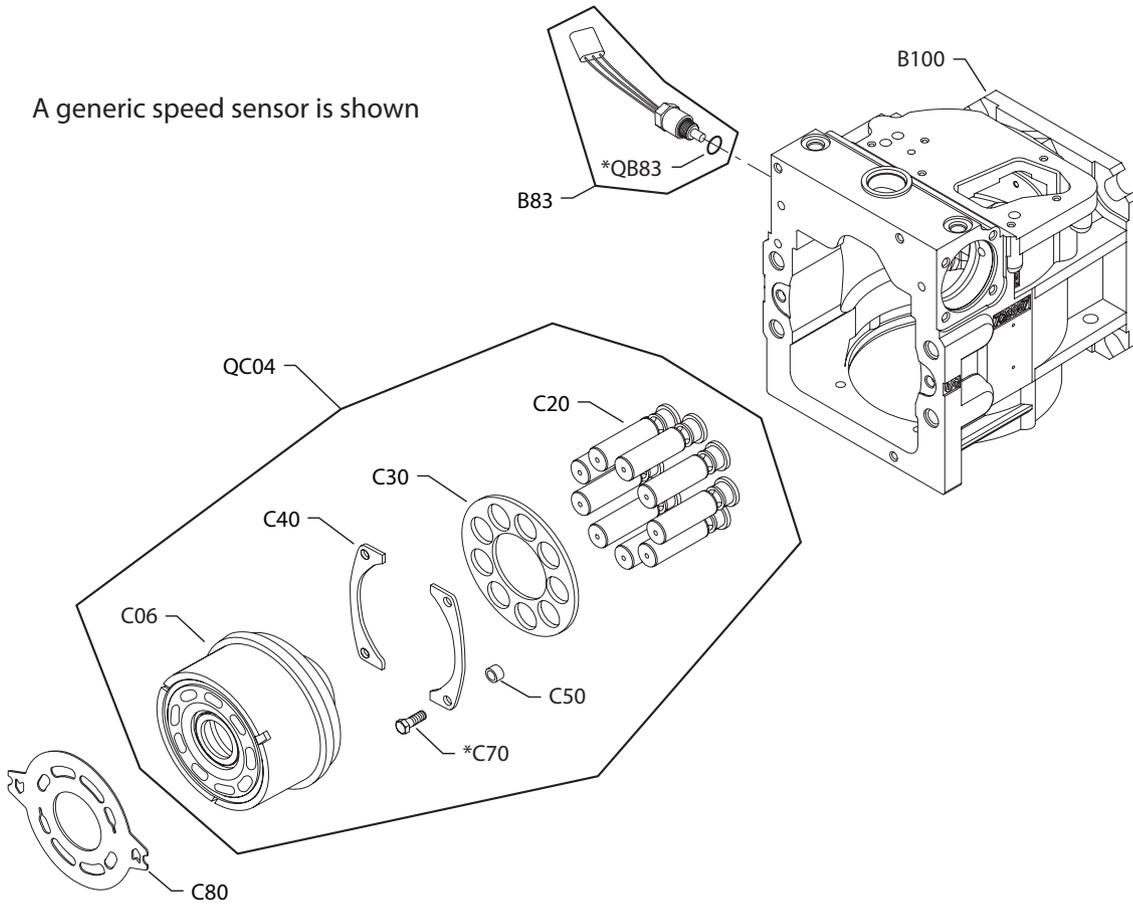
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	B50	89-41		9004800-3708	Pin	2
	B70	89-41		140644	Plug assembly	1
	B72	89-41		140644	Plug assembly	1
	B80	89-41		320002 (9005110-9200)	Plug assembly	1
	B82	92-19		140644	Plug assembly (SB-1992-003)	1
	B90	89-41		9803390	Control filter screen	3
	D10	07-10		11000397	Servo arm (SB-2007-008A)	1
	D10	05-49	07-09	303214	Servo arm assembly	1
	D50	07-10		11001678	Swashplate (SB-2007-008A)	1
	D50	88-16	07-09	516204	Swashplate	1
	D55	07-10		519150	Screw (SB-2007-008A)	1
	D55	89-41	07-09	9007276-0111	Screw	1
	D60	89-41	07-09	766022	Swashplate guide (SB-2007-008A)	1
	D65	89-41		504493	Screw	1
	D70	89-41		127464	Washer	1
	D75	89-41		333369	Spiral head pin	1
	D80	89-41		700948	Cage locator link	1
	D85	89-41		11003805	Pin (SB-2007-008A)	1
	D95	89-41	07-09	303420	Spring (SB-2007-008A)	1
	E10	07-10		11001326	Side cover (SB-2007-008A)	1
	E10	92-19	07-09	11027814	Side cover assembly (SB-1992-003 & SB-1996-004)	1
	E20	99-50		11047979	Leveler (SB-1999-010 & SB-2007-008A)	1
	E22	99-50		11139634	Spring seat (SB-2007-008A)	2
	E24	92-19		359067	Shim	2
	E30	96-03		11056592	Guide post (SB-1996-004)	2
	E30	92-19	96-02	503205	Guide post (SB-1992-003)	2
	E40	89-41		042432	Seal nut	2
	E50	89-41		517379	O-ring	1
	E60	89-41		517230	Screw (SB-2002-014)	6
	E70	89-41		320002 (9005110-9200)	Plug assembly	1
	E80	89-41		517160	Spring (SB-1997-018)	2
	E82	89-41		517161	Spring (SB-1997-018)	2
	E90	96-03		513890	Insert assembly (SB-1996-004 & SB-1999-041)	1
	F20	88-16		11116309	Slider block	1
	L10	89-41		11018484	Roller bearing	1
	L20	89-41		392209	Retaining ring	1
	L25	92-19		519732	Seal carrier assembly (SB-2007-008A)	1
	L40	07-10		519021	Lip seal (SB-2007-008A)	1
	L40	89-41	07-09	9008000-0114	Lip seal	1
	L50	89-41		509353	O-ring	1
	L60	89-41		516769	Retainer plate	1
	L70	89-41		009159	Screw	4
	QB30	07-10		11000866	Cradle bearing assembly (SB-2007-008A)	1
	QB30	89-41	07-09	324657	Cradle bearing assembly	1
	QD50	07-10		11031840	Swashplate kit	1
	QD50	88-16	07-09	521382	Swashplate kit (SB-2007-008A)	1



Variable displacement pump

(EAT, EBA, EDB & EDD)

A generic speed sensor is shown

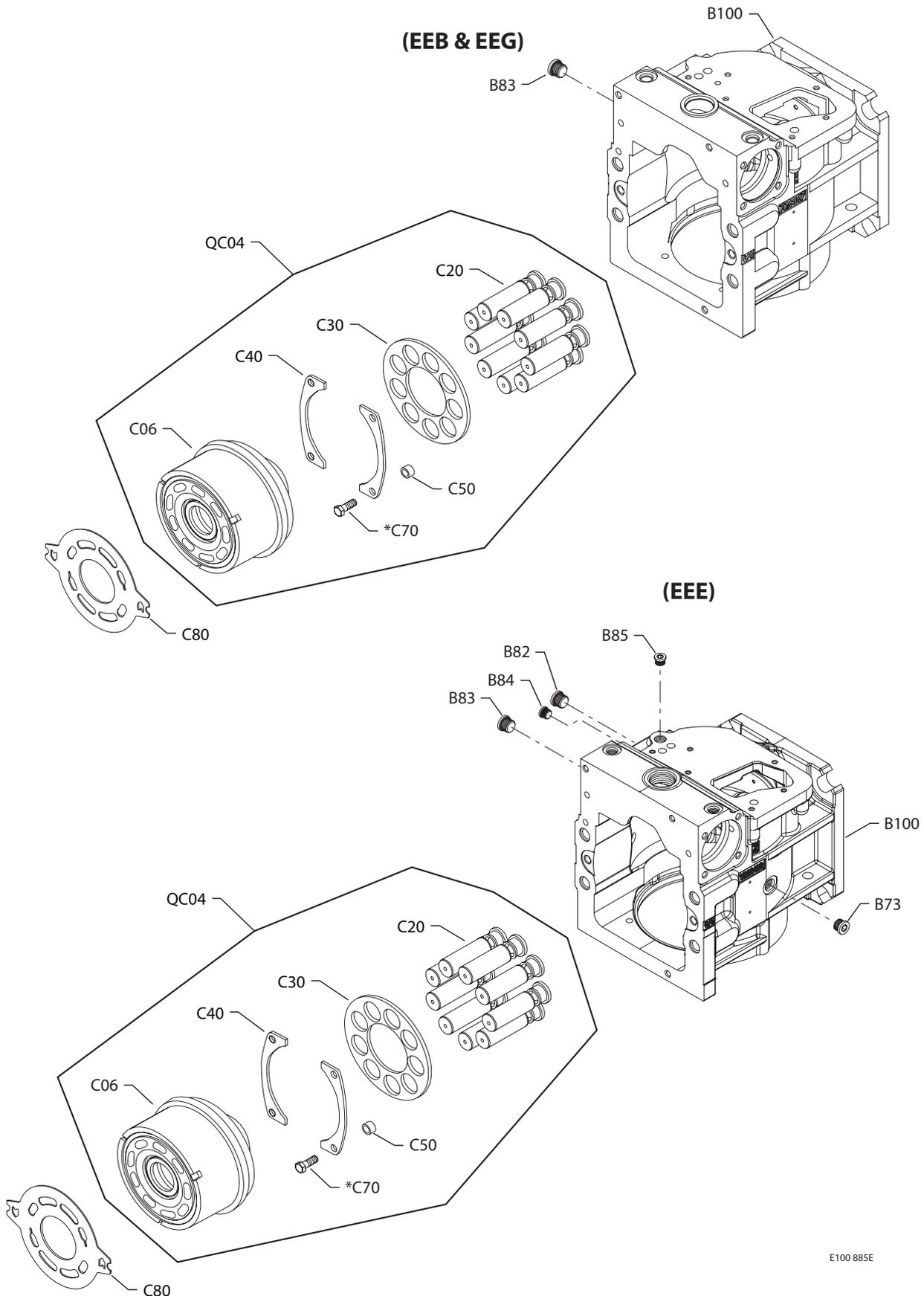



**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
EAT	B83	99-50		11046858	Speed sensor	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	99-50	07-09	8510060	Housing assembly (SB-1992-003)	1
	C06	99-50		519259	Cylinder block assy., with speed ring	1
	C20	99-50		727750	Piston assembly, welded	9
	C30	99-50		11067352	Slipper retainer	1
	C40	99-50		700963	Slipper guide bearing	2
	C50	99-50		509015	Spacer	4
	C70	99-50		308643	Screw	4
	C80	99-50		518807	Valve plate	1
	QB83	99-50		9004201-3700	O-ring	1
	QC04	99-50		519275	Cylinder block kit, with speed ring	1
	EBA	B83	92-19		KPPG13408	Speed sensor
B100		07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
C06		92-19		519259	Cylinder block assy., with speed ring	1
C20		92-19		727750	Piston assembly, welded	9
C30		92-19		11067352	Slipper retainer	1
C40		92-19		700963	Slipper guide bearing	2
C50		92-19		509015	Spacer	4
C70		92-19		308643	Screw	4
C80		92-19		518807	Valve plate	1
QB83		92-19		9004201-3700	O-ring	1
QC04		92-19		519275	Cylinder block kit, with speed ring	1
EDB		B83	92-19	08-03	KPPG15408	Speed sensor
	B100	07-10	08-03	11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
	C06	92-19	08-03	519259	Cylinder block assy., with speed ring	1
	C20	92-19	08-03	727750	Piston assembly, welded	9
	C30	92-19	08-03	11067352	Slipper retainer	1
	C40	92-19	08-03	700963	Slipper guide bearing	2
	C50	92-19	08-03	509015	Spacer	4
	C70	92-19	08-03	308643	Screw	4
	C80	92-19	08-03	518807	Valve plate	1
	QB83	92-19	08-03	9004201-3700	O-ring	1
	QC04	92-19	08-03	519275	Cylinder block kit, with speed ring	1
	EDD	B83	92-19	12-36	KPPG12408	Speed sensor
B100		07-10	12-36	11026913	Housing assembly (SB-2007-008A)	1
B100		92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
C06		92-19	12-36	519259	Cylinder block assy., with speed ring	1
C20		92-19	12-36	727750	Piston assembly, welded	9
C30		92-19	12-36	11067352	Slipper retainer	1
C40		92-19	12-36	700963	Slipper guide bearing	2
C50		92-19	12-36	509015	Spacer	4
C70		92-19	12-36	308643	Screw	4
C80		92-19	12-36	518808	Valve plate	1
QB83		92-19	12-36	9004201-3700	O-ring	1
QC04		92-19	12-36	519275	Cylinder block kit, with speed ring	1



Variable displacement pump



E100 885E

\* = included in overhaul seal kit Q210



Variable displacement pump

Special hardware

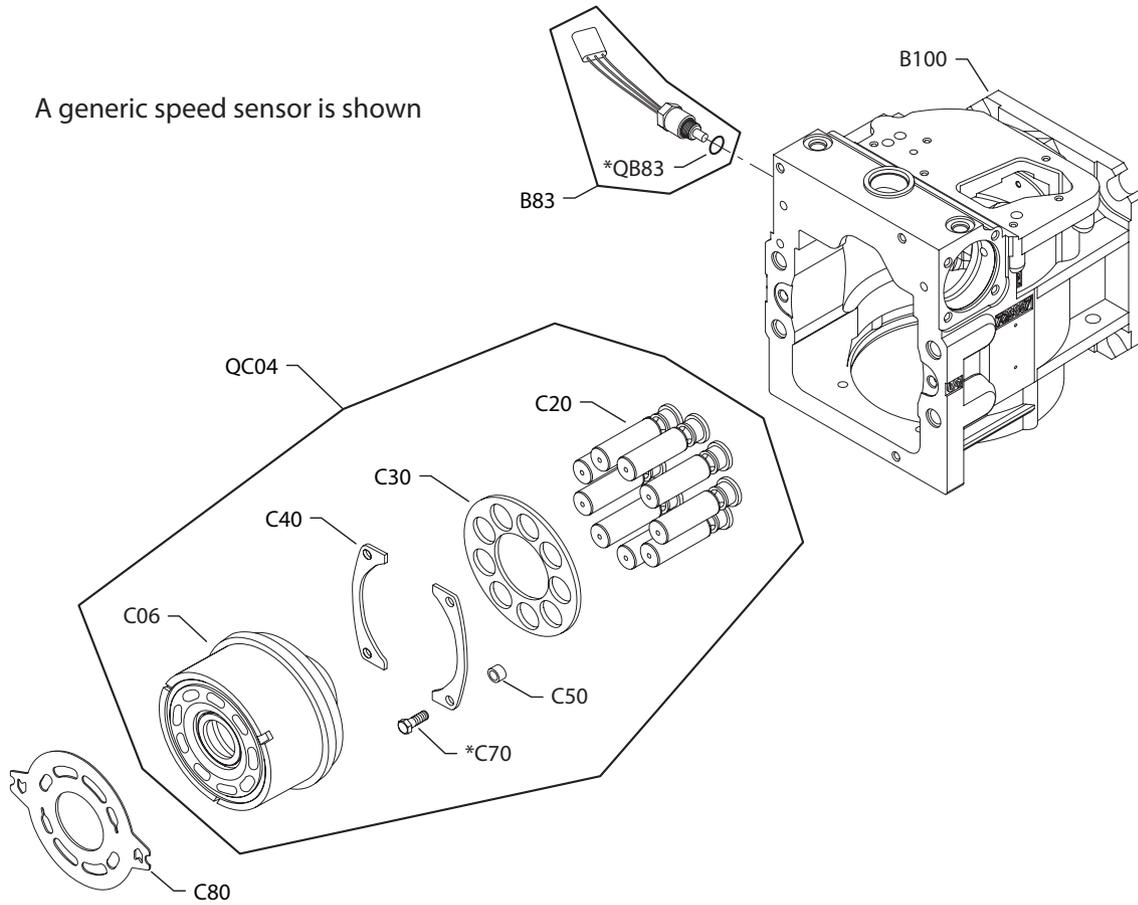
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
EEB	B83	92-19		140644	Plug assembly	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C06	92-19		519259	Cylinder block assy., with speed ring	1	
	C20	92-19		727750	Piston assembly, welded	9	
	C30	92-19		11067352	Slipper retainer	1	
	C40	92-19		700963	Slipper guide bearing	2	
	C50	92-19		509015	Spacer	4	
	C70	92-19		308643	Screw	4	
	C80	92-19		518807	Valve plate	1	
	QC04	92-19		519275	Cylinder block kit, with speed ring	1	
	EEE	B73	00-13	12-36	140644	Plug assembly	1
		B83	00-13	12-36	140644	Plug assembly	1
B84		00-13	12-36	509603	Plug assembly, M10 x 1	1	
B85		00-13	12-36	509603	Plug assembly, M10 x 1	1	
B100		07-10	12-36	11006984	Housing (SB-2007-008A)	1	
C06		00-13	12-36	519259	Cylinder block assy., with speed ring	1	
C20		00-13	12-36	727750	Piston assembly, welded	9	
C30		00-13	12-36	11067352	Slipper retainer	1	
C40		00-13	12-36	700963	Slipper guide bearing	2	
C50		00-13	12-36	509015	Spacer	4	
C70		00-13	12-36	308643	Screw	4	
C80		00-13	12-36	518937	Valve plate, CW, lapped	1	
QC04		00-13	12-36	519275	Cylinder block kit, with speed ring	1	
EEG		B83	00-13		140644	Plug assembly	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	00-13	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C06	00-13		519259	Cylinder block assy., with speed ring	1	
	C20	00-13		727750	Piston assembly, welded	9	
	C30	00-13		11067352	Slipper retainer	1	
	C40	00-13		700963	Slipper guide bearing	2	
	C50	00-13		509015	Spacer	4	
	C70	00-13		308643	Screw	4	
	C80	00-13		518938	Valve plate, CCW, lapped	1	
	C80	00-13		518937	Valve plate, CW, lapped	1	
	QC04	00-13		519275	Cylinder block kit, with speed ring	1	



Variable displacement pump

(EFC, EFI, EFM & EGA)

A generic speed sensor is shown




**Variable displacement pump**
**Special hardware**

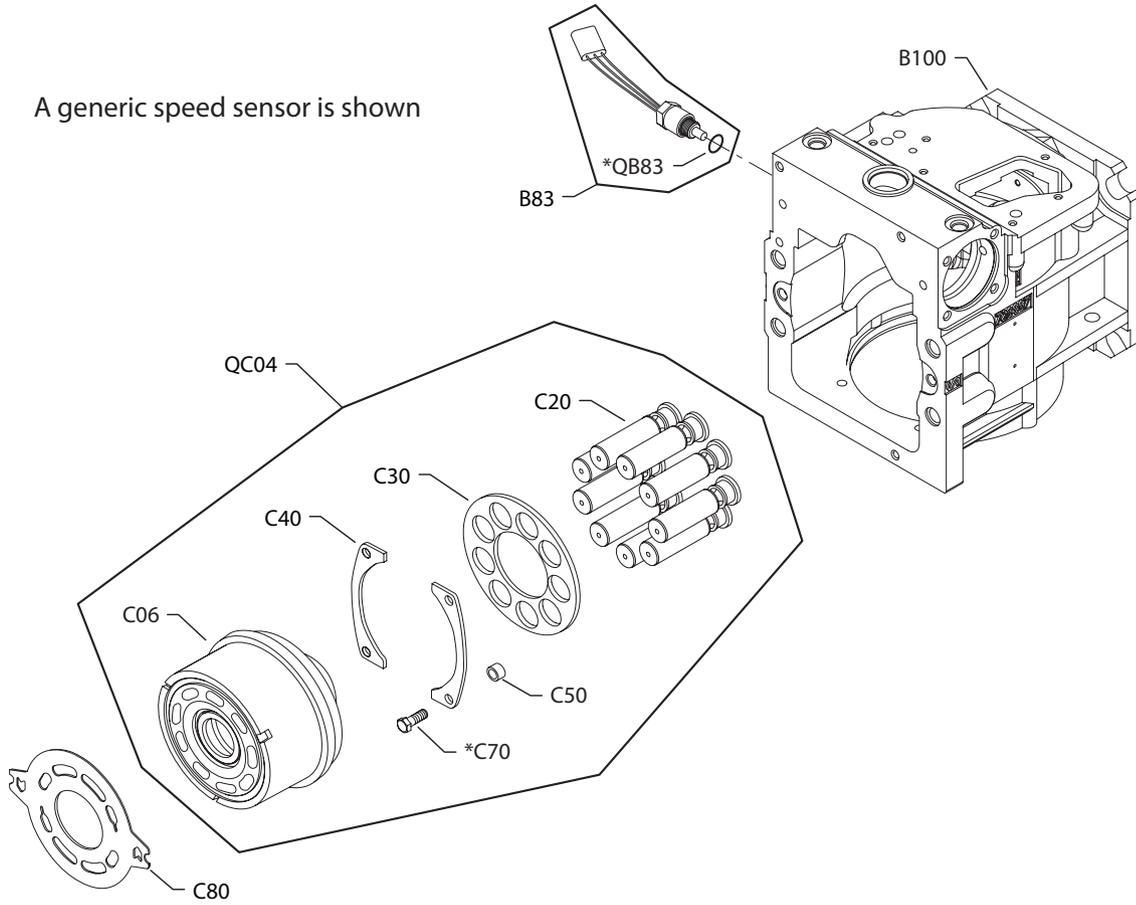
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
EFC	B83	92-19		KPPG156	Speed sensor	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C06	92-19		519259	Cylinder block assy., with speed ring	1	
	C20	92-19		727750	Piston assembly, welded	9	
	C30	92-19		11067352	Slipper retainer	1	
	C40	92-19		700963	Slipper guide bearing	2	
	C50	92-19		509015	Spacer	4	
	C70	92-19		308643	Screw	4	
	C80	92-19		518807	Valve plate	1	
	QB83	99-50		9004201-3700	O-ring	1	
	QC04	92-19		519275	Cylinder block kit, with speed ring	1	
	EFI	B83	98-12		KPPG156	Speed sensor	1
B100		07-10		11026913	Housing assembly (SB-2007-008A)	1	
B100		98-12	07-09	8510060	Housing assembly (SB-1992-003)	1	
C06		98-12		519259	Cylinder block assy., with speed ring	1	
C20		98-12		727750	Piston assembly, welded	9	
C30		98-12		11067352	Slipper retainer	1	
C40		98-12		700963	Slipper guide bearing	2	
C50		98-12		509015	Spacer	4	
C70		98-12		308643	Screw	4	
C80		98-12		518937	Valve plate, CW, lapped	1	
C80		98-12		518938	Valve plate, CCW, lapped	1	
QC04		98-12		519275	Cylinder block kit, with speed ring	1	
EFM		B83	98-31	12-36	KPPG156	Speed sensor	1
	B100	07-10	12-36	11026913	Housing assembly (SB-2007-008A)	1	
	B100	98-31	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C06	98-31	12-36	519259	Cylinder block assy., with speed ring	1	
	C20	98-31	12-36	727750	Piston assembly, welded	9	
	C30	98-31	12-36	11067352	Slipper retainer	1	
	C40	98-31	12-36	700963	Slipper guide bearing	2	
	C50	98-31	12-36	509015	Spacer	4	
	C70	98-31	12-36	308643	Screw	4	
	C80	98-31	12-36	518808	Valve plate	1	
	QC04	98-31	12-36	519275	Cylinder block kit, with speed ring	1	
	EGA	B83	98-49		11046858	Speed sensor	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		98-49	07-09	8510060	Housing assembly (SB-1992-003)	1	
C06		98-49		519259	Cylinder block assy., with speed ring	1	
C20		98-49		727750	Piston assembly, welded	9	
C30		98-49		11067352	Slipper retainer	1	
C40		98-49		700963	Slipper guide bearing	2	
C50		98-49		509015	Spacer	4	
C70		98-49		308643	Screw	4	
C80		98-49		518807	Valve plate	1	
QC04		98-49		519275	Cylinder block kit, with speed ring	1	



Variable displacement pump

(EHA & EHB)

A generic speed sensor is shown

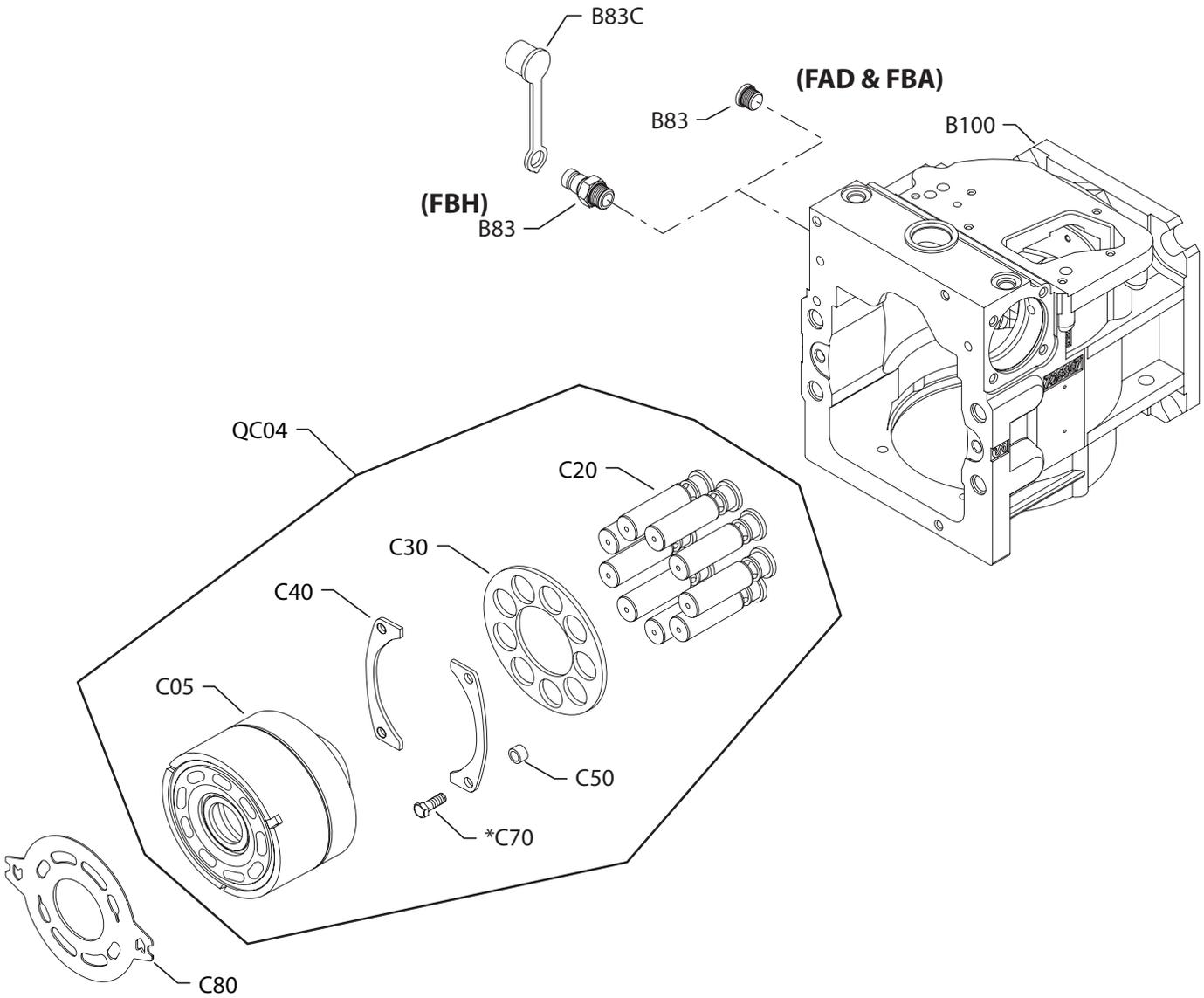



**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
EHA	B83	00-44		KPPG16408	Speed sensor	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	00-44	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C06	00-44		519259	Cylinder block assy., with speed ring	1	
	C20	00-44		727750	Piston assembly, welded	9	
	C30	00-44		11067352	Slipper retainer	1	
	C40	00-44		700963	Slipper guide bearing	2	
	C50	00-44		509015	Spacer	4	
	C70	00-44		308643	Screw	4	
	C80	00-44		518807	Valve plate	1	
	QC04	00-44		519275	Cylinder block kit, with speed ring	1	
	EHB	B83	02-47	12-36	KPPG16408	Speed sensor	1
		B100	07-10	12-36	11026913	Housing assembly (SB-2007-008A)	1
B100		02-47	07-09	8510060	Housing assembly (SB-1992-003)	1	
C06		02-47	12-36	519259	Cylinder block assy., with speed ring	1	
C20		02-47	12-36	727750	Piston assembly, welded	9	
C30		02-47	12-36	11067352	Slipper retainer	1	
C40		02-47	12-36	700963	Slipper guide bearing	2	
C50		02-47	12-36	509015	Spacer	4	
C70		02-47	12-36	308643	Screw	4	
C80		02-47	12-36	518808	Valve plate	1	
QC04		02-47	12-36	519275	Cylinder block kit, with speed ring	1	



Variable displacement pump

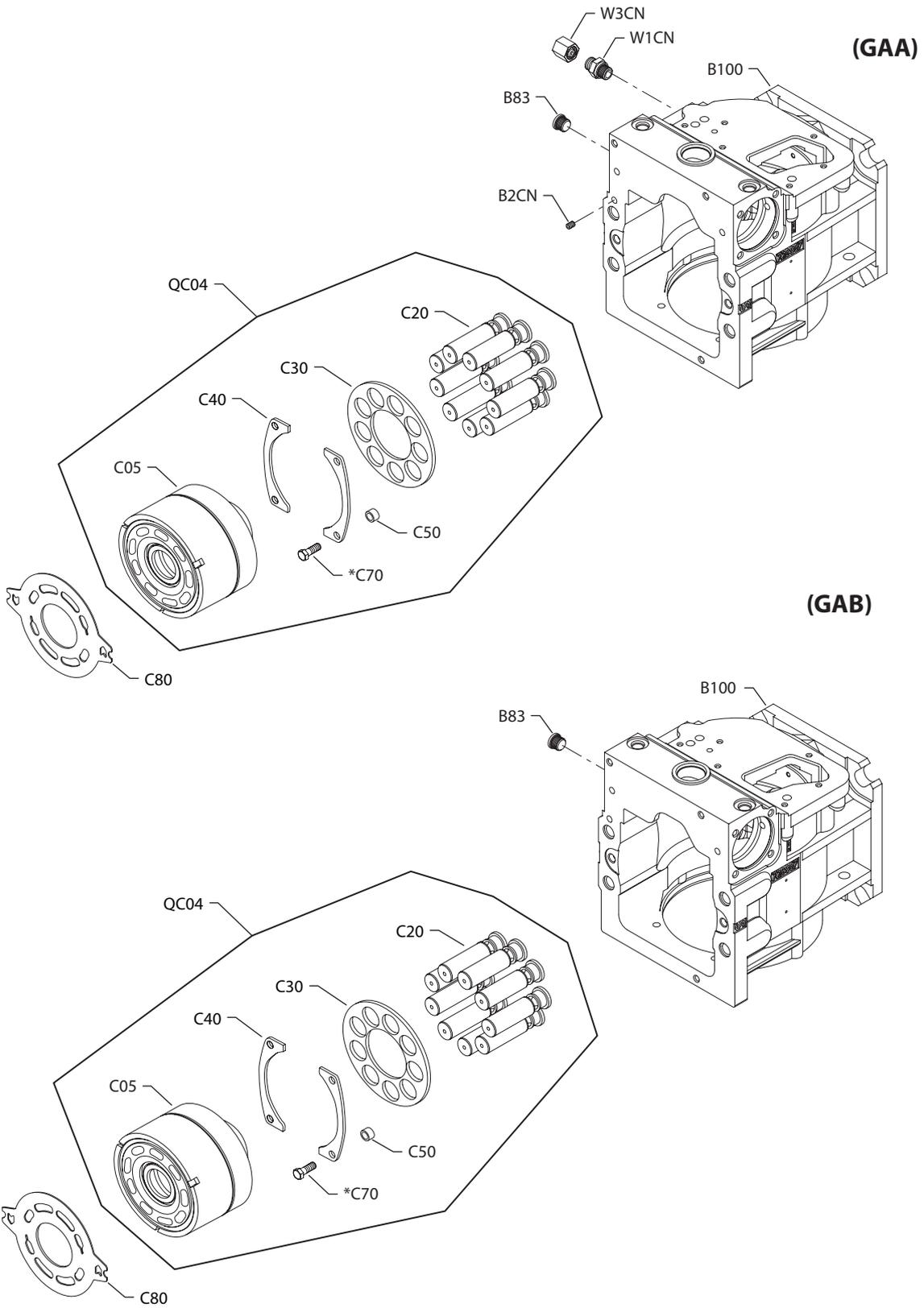



**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
FAD	B83	92-19		140644	Plug assembly	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	13-49		11033869	Cylinder block assembly	1	
	C05	92-19	13-49	519258	Cylinder block assembly	1	
	C20	92-19		727750	Piston assembly, welded	9	
	C30	92-19		11067352	Slipper retainer	1	
	C40	92-19		700963	Slipper guide bearing	2	
	C50	92-19		509015	Spacer	4	
	C70	92-19		308643	Screw	4	
	C80	92-19		518807	Valve plate	1	
	QC04	92-19		519274	Cylinder block kit	1	
	FBA	B83	08-44		140644	Plug assembly	1
B100		08-44		11026913	Housing assembly	1	
C05		13-49		11033869	Cylinder block assembly	1	
C05		08-44	13-49	519258	Cylinder block assembly	1	
C20		08-44		727750	Piston assembly, welded	9	
C30		08-44		11067352	Slipper retainer	1	
C40		08-44		700963	Slipper guide bearing	2	
C50		08-44		509015	Spacer	4	
C70		08-44		308643	Screw	4	
C80		08-44		518808	Valve plate	1	
QC04		08-44		519274	Cylinder block kit	1	
FBH		B83	10-06		8700127	Diagnostic receptical assembly	1
		B83C	10-06		8700128	Dust cover	1
	B100	10-06		11026913	Housing assembly	1	
	C05	13-49		11033869	Cylinder block assembly	1	
	C05	10-06	13-49	519258	Cylinder block assembly	1	
	C20	10-06		727750	Piston assembly, welded	9	
	C30	10-06		11067352	Slipper retainer	1	
	C40	10-06		700963	Slipper guide bearing	2	
	C50	10-06		509015	Spacer	4	
	C70	10-06		308643	Screw	4	
	C80	10-06		518808	Valve plate	1	
	QC04	10-06		519274	Cylinder block kit	1	



Variable displacement pump



E100 886E

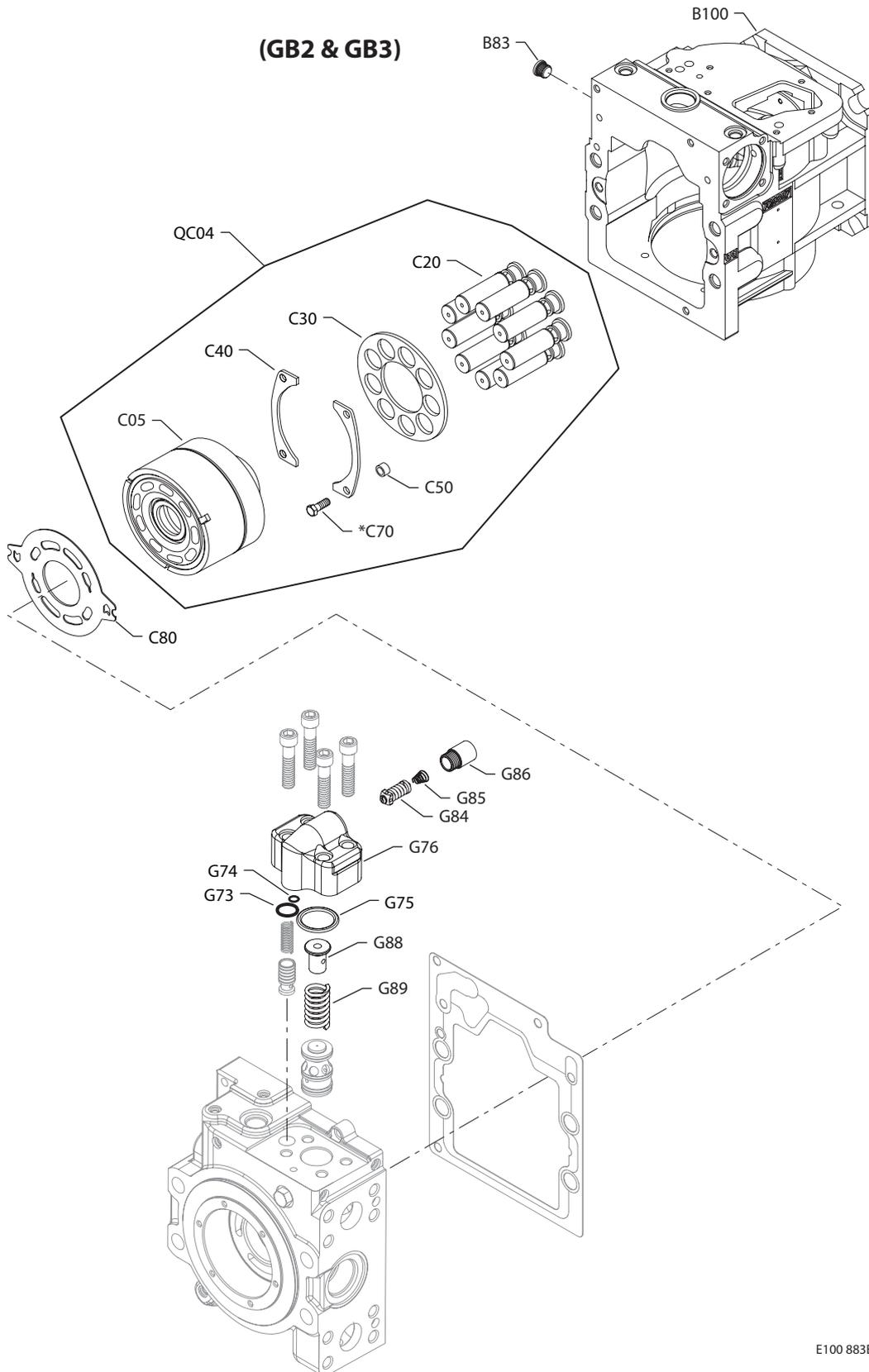
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
GAA	B83	92-19		140644	Plug assembly	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	92-19		11033869	Cylinder block assembly	1	
	C20	92-19		727750	Piston assembly, welded	9	
	C30	92-19		11067352	Slipper retainer	1	
	C40	92-19		700963	Slipper guide bearing	2	
	C50	92-19		509015	Spacer	4	
	C70	92-19		308643	Screw	4	
	C80	92-19		518934	Valve plate	1	
	QC04	92-19		519274	Cylinder block kit	1	
	GAB	B2CN	92-19	08-03	775312	Set screw	1
		B83	92-19	08-03	140644	Plug assembly	1
B100		07-10	08-03	11026913	Housing assembly (SB-2007-008A)	1	
B100		92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
C05		92-19		11033869	Cylinder block assembly	1	
C20		92-19	08-03	727750	Piston assembly, welded	9	
C30		92-19	08-03	11067352	Slipper retainer	1	
C40		92-19	08-03	700963	Slipper guide bearing	2	
C50		92-19	08-03	509015	Spacer	4	
C70		92-19	08-03	308643	Screw	4	
C80		92-19	08-03	518934	Valve plate	1	
QC04		92-19	08-03	519274	Cylinder block kit	1	
W1CN		92-19	08-03	723726	Connector	1	
W3CN		92-19	08-03	574095	Cap	1	



Variable displacement pump



\* = included in overhaul seal kit Q210

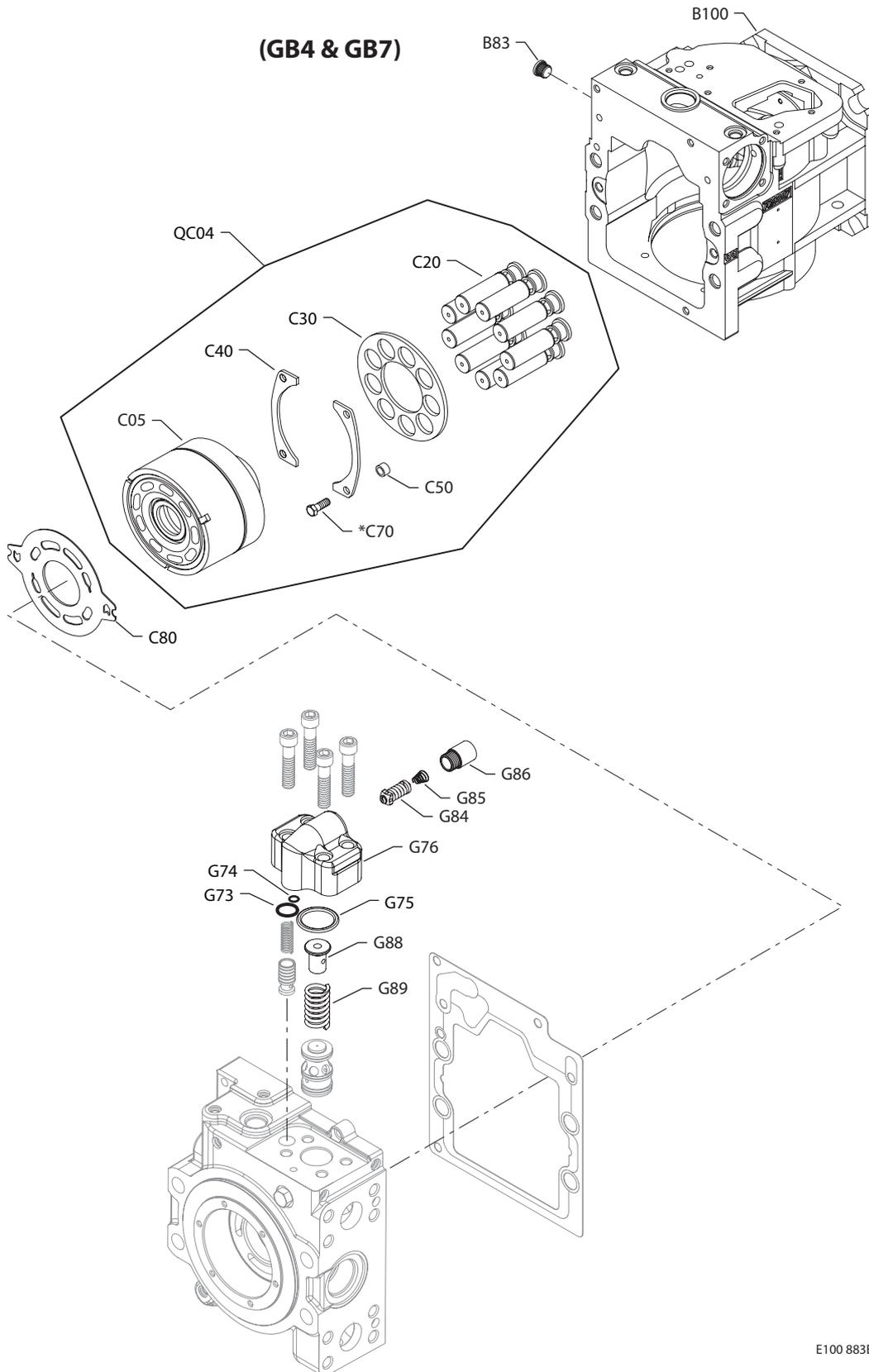
E100 883E


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GB2	B83	02-30		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	02-30	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	02-30		11033869	Cylinder block assembly	1
	C20	02-30		727750	Piston assembly, welded	9
	C30	02-30		11067352	Slipper retainer	1
	C40	02-30		700963	Slipper guide bearing	2
	C50	02-30		509015	Spacer	4
	C70	02-30		308643	Screw	4
	C80	02-30		518807	Valve plate	1
	G73	02-30		519873	Seal	1
	G74	02-30		144725 (9004105-0110)	O-ring	1
	G75	02-30		518329	O-ring	1
	G76	02-30		517828	Valve housing	1
	G84	02-30		3103375-0250	SCR valve, 250 bar [3625 psi]	1
	G85	02-30		4800780	Conial spring	1
	G86	02-30		11126727	Plug assembly	1
	G88	02-30		517829	Spring guide	1
	G89	02-30		517831	Spring	1
	QC04	02-30		519274	Cylinder block kit	1
GB3	B83	02-30		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	02-30	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	02-30		11033869	Cylinder block assembly	1
	C20	02-30		727750	Piston assembly, welded	9
	C30	02-30		11067352	Slipper retainer	1
	C40	02-30		700963	Slipper guide bearing	2
	C50	02-30		509015	Spacer	4
	C70	02-30		308643	Screw	4
	C80	02-30		518807	Valve plate	1
	G73	02-30		519873	Seal	1
	G74	02-30		144725 (9004105-0110)	O-ring	1
	G75	02-30		518329	O-ring	1
	G76	02-30		517828	Valve housing	1
	G84	02-30		3103375-0175	SCR valve, 175 bar [2538 psi]	1
	G85	02-30		4800780	Conial spring	1
	G86	02-30		11126727	Plug assembly	1
	G88	02-30		517829	Spring guide	1
	G89	02-30		517831	Spring	1
	QC04	02-30		519274	Cylinder block kit	1



Variable displacement pump



E100 883E

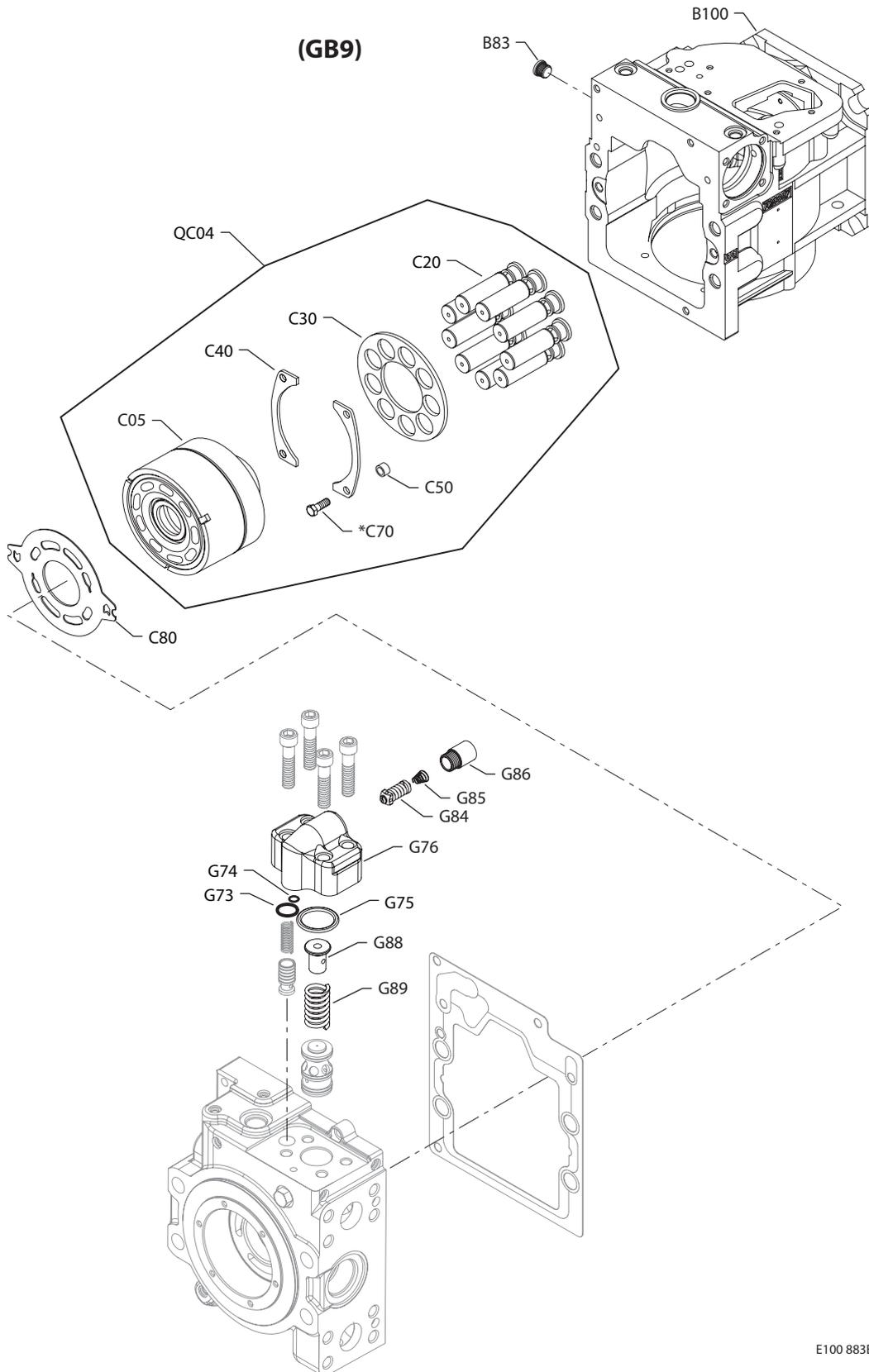
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GB4	B83	92-19		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	92-19		11033869	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		11067352	Slipper retainer	1
	C40	92-19		700963	Slipper guide bearing	2
	C50	92-19		509015	Spacer	4
	C70	92-19		308643	Screw	4
	C80	92-19		518807	Valve plate	1
	G73	92-19		519873	Seal	1
	G74	92-19		144725 (9004105-0110)	O-ring	1
	G75	92-19		518329	O-ring	1
	G76	92-19		517828	Valve housing	1
	G84	92-19		3103375-0140	SCR valve, 140 bar [2030 psi]	1
	G85	92-19		4800780	Conial spring	1
	G86	92-19		11126727	Plug assembly	1
	G88	92-19		517829	Spring guide	1
	G89	92-19		517831	Spring	1
	QC04	92-19		519274	Cylinder block kit	1
GB7	B83	05-34		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	05-34	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	05-34		11033869	Cylinder block assembly	1
	C20	05-34		727750	Piston assembly, welded	9
	C30	05-34		11067352	Slipper retainer	1
	C40	05-34		700963	Slipper guide bearing	2
	C50	05-34		509015	Spacer	4
	C70	05-34		308643	Screw	4
	C80	05-34		518937	Valve plate, CW, lapped	1
	C80	05-34		518938	Valve plate, CCW, lapped	1
	G73	05-34		519873	Seal	1
	G74	05-34		144725 (9004105-0110)	O-ring	1
	G75	05-34		518329	O-ring	1
	G76	05-34		517828	Valve housing	1
	G84	05-34		3103375-0175	SCR valve, 175 bar [2030 psi]	1
	G85	05-34		4800780	Conial spring	1
	G86	05-34		11126727	Plug assembly	1
	G88	05-34		517829	Spring guide	1
	G89	05-34		517831	Spring	1
QC04	05-34		519274	Cylinder block kit	1	



Variable displacement pump



E100 883E

\* = included in overhaul seal kit Q210

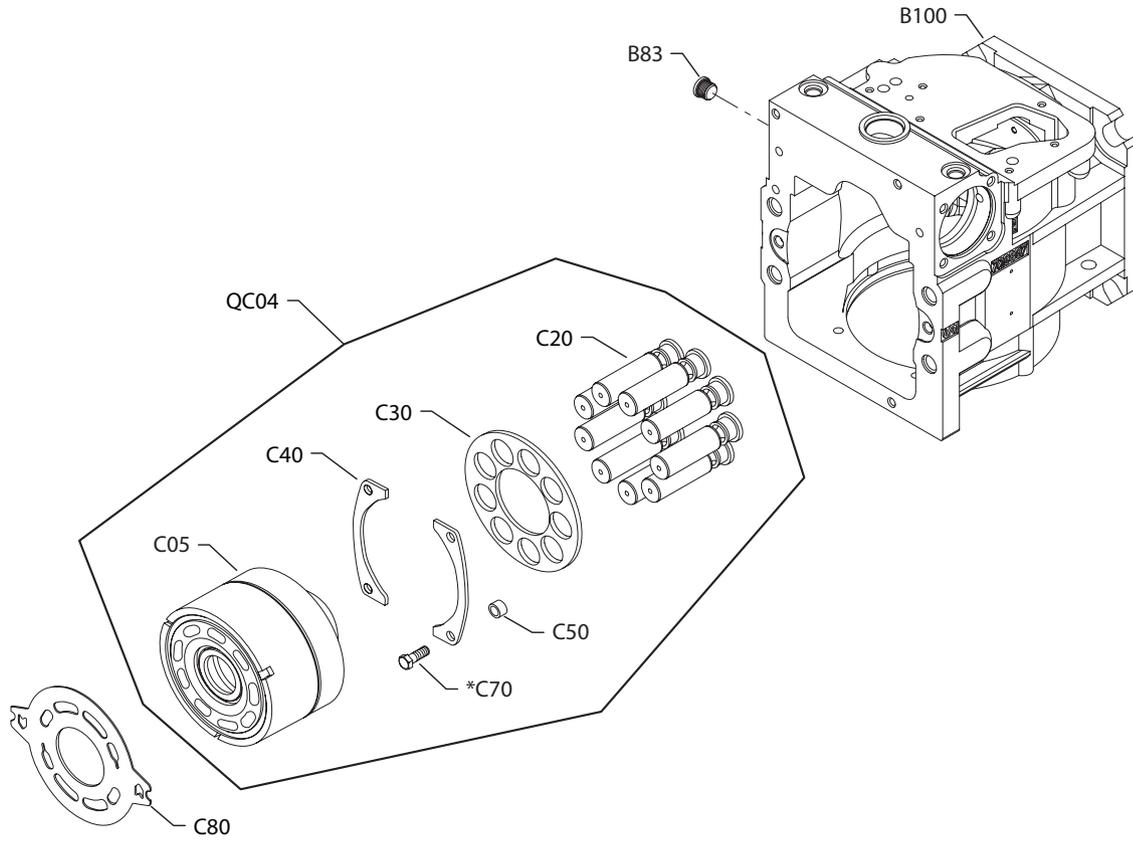

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GB9	B83	06-34		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	06-34	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	06-34		11033869	Cylinder block assembly	1
	C20	06-34		727750	Piston assembly, welded	9
	C30	06-34		11067352	Slipper retainer	1
	C40	06-34		700963	Slipper guide bearing	2
	C50	06-34		509015	Spacer	4
	C70	06-34		308643	Screw	4
	C80	06-34		518807	Valve plate	1
	G73	06-34		519873	Seal	1
	G74	06-34		144725 (9004105-0110)	O-ring	1
	G75	06-34		518329	O-ring	1
	G76	06-34		517828	Valve housing	1
	G84	06-34		3103375-0140	SCR valve, 140 bar [2030 psi]	1
	G85	06-34		4800780	Conial spring	1
	G86	06-34		11126727	Plug assembly	1
	G88	06-34		517829	Spring guide	1
	G89	06-34		517831	Spring	1
	QC04	06-34		519274	Cylinder block kit	1



Variable displacement pump

(GBA, GBE & GBK)

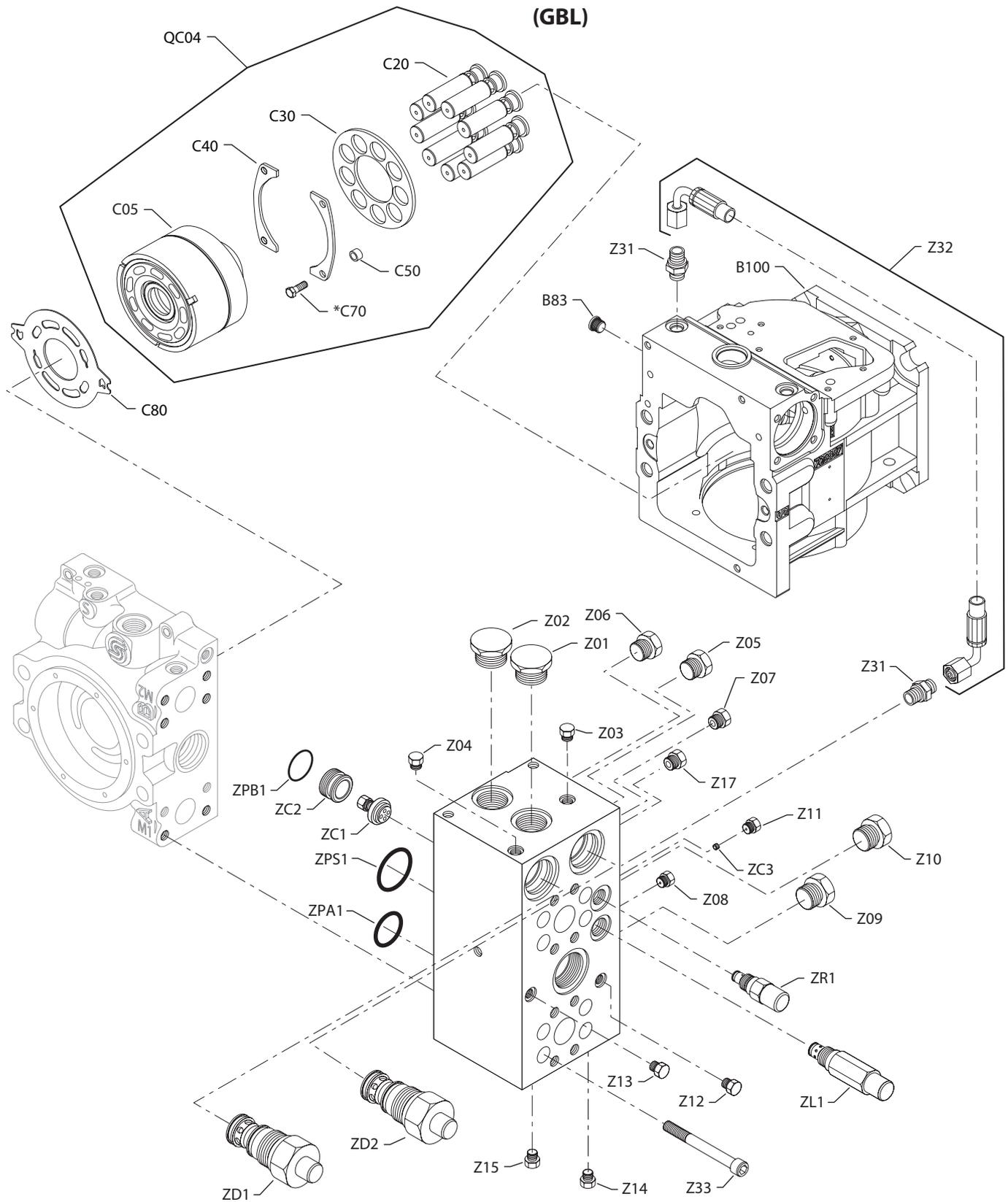



**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
GBA	B83	89-41		140644	Plug assembly	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	89-41	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	89-41		11033869	Cylinder block assembly, without speed ring	1	
	C20	89-41		727750	Piston assembly, welded	9	
	C30	89-41		11067352	Slipper retainer	1	
	C40	89-41		700963	Slipper guide bearing	2	
	C50	89-41		509015	Spacer	4	
	C70	89-41		308643	Screw	4	
	C80	89-41		518807	Valve plate	1	
	QC04	89-41		519274	Cylinder block kit, without speed ring, welded piston	1	
	GBE	B83	89-41		140644	Plug assembly	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		89-41	07-09	8510060	Housing assembly (SB-1992-003)	1	
C05		89-41		11033869	Cylinder block assembly, without speed ring	1	
C20		89-41		727750	Piston assembly, welded	9	
C30		89-41		11067352	Slipper retainer	1	
C40		89-41		700963	Slipper guide bearing	2	
C50		89-41		509015	Spacer	4	
C70		89-41		308643	Screw	4	
C80		89-41		518807	Valve plate	1	
QC04		89-41		519274	Cylinder block kit, without speed ring, welded piston	1	
GBK		B83	08-04		140644	Plug assembly	1
		B100	08-04		11026913	Housing assembly	1
	C05	89-41		11033869	Cylinder block assembly, without speed ring	1	
	C20	89-41		727750	Piston assembly, welded	9	
	C30	89-41		11067352	Slipper retainer	1	
	C40	89-41		700963	Slipper guide bearing	2	
	C50	89-41		509015	Spacer	4	
	C70	89-41		308643	Screw	4	
	C80	89-41		518807	Valve plate	1	
	QC04	89-41		519274	Cylinder block kit, without speed ring, welded piston	1	



Variable displacement pump



E100 888E

\* = included in overhaul seal kit Q210

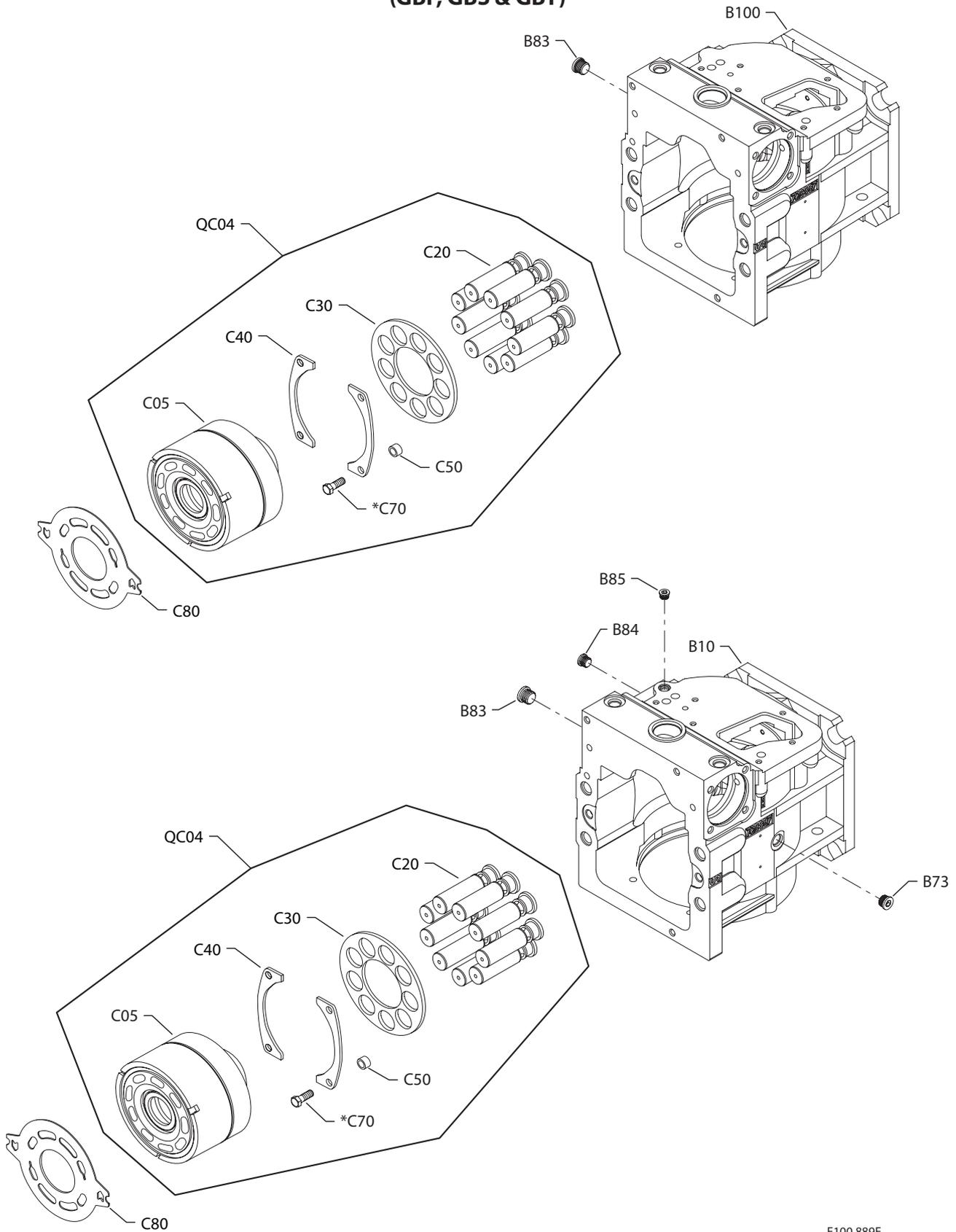

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GBL	B83	00-25	10-49	140644	Plug assembly	1
	B100	07-10	10-49	11026913	Housing assembly (SB-2007-008A)	1
	B100	00.25	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	00-25	10-49	11033869	Cylinder block assembly, without speed ring	1
	C20	00-25	10-49	727750	Piston assembly, welded	9
	C30	00-25	10-49	11067352	Slipper retainer	1
	C40	00-25	10-49	700963	Slipper guide bearing	2
	C50	00-25	10-49	509015	Spacer	4
	C70	00-25	10-49	308643	Screw	4
	C80	00-25	10-49	518807	Valve plate	1
	QC04	00-25	10-49	519274	Cylinder block kit	1
	Z01	00-25	10-49	516748	Plug assembly	1
	Z02	00-25	10-49	516748	Plug assembly	1
	Z03	00-25	10-49	516742	Plug assembly	1
	Z04	00-25	10-49	516742	Plug assembly	1
	Z05	00-25	10-49	516744	Plug assembly	1
	Z06	00-25	10-49	516744	Plug assembly	1
	Z07	00-25	10-49	516745	Plug assembly	1
	Z08	00-25	10-49	516742	Plug assembly	1
	Z09	00-25	10-49	516748	Plug assembly	1
	Z10	00-25	10-49	516748	Plug assembly	1
	Z11	00-25	10-49	516742	Plug assembly	1
	Z12	00-25	10-49	516750	Plug assembly	1
	Z13	00-25	10-49	516750	Plug assembly	1
	Z14	00-25	10-49	516750	Plug assembly	1
	Z15	00-25	10-49	516750	Plug assembly	1
	Z17	00-25	10-49	516745	Plug assembly	1
	Z31	00-25	10-49	516137	Connector	2
	Z32	00-25	10-49	516134	Hydraulic hose	1
	Z33	00-25	10-49	019471	Screw	8
	ZC1	00-25	10-49	516720	Check valve	1
	ZC2	00-25	10-49	516721	Retainer	1
	ZC3	00-25	10-49	516747	Headless screw	1
	ZD1	00-25	10-49	516754	Pressure regulator	1
	ZD2	00-25	10-49	516754	Pressure regulator	1
	ZL1	00-25	10-49	516729	Relief valve	1
	ZR1	00-25	10-49	516733	Relief valve	1



Variable displacement pump

(GBP, GBS & GBT)



E100 889E

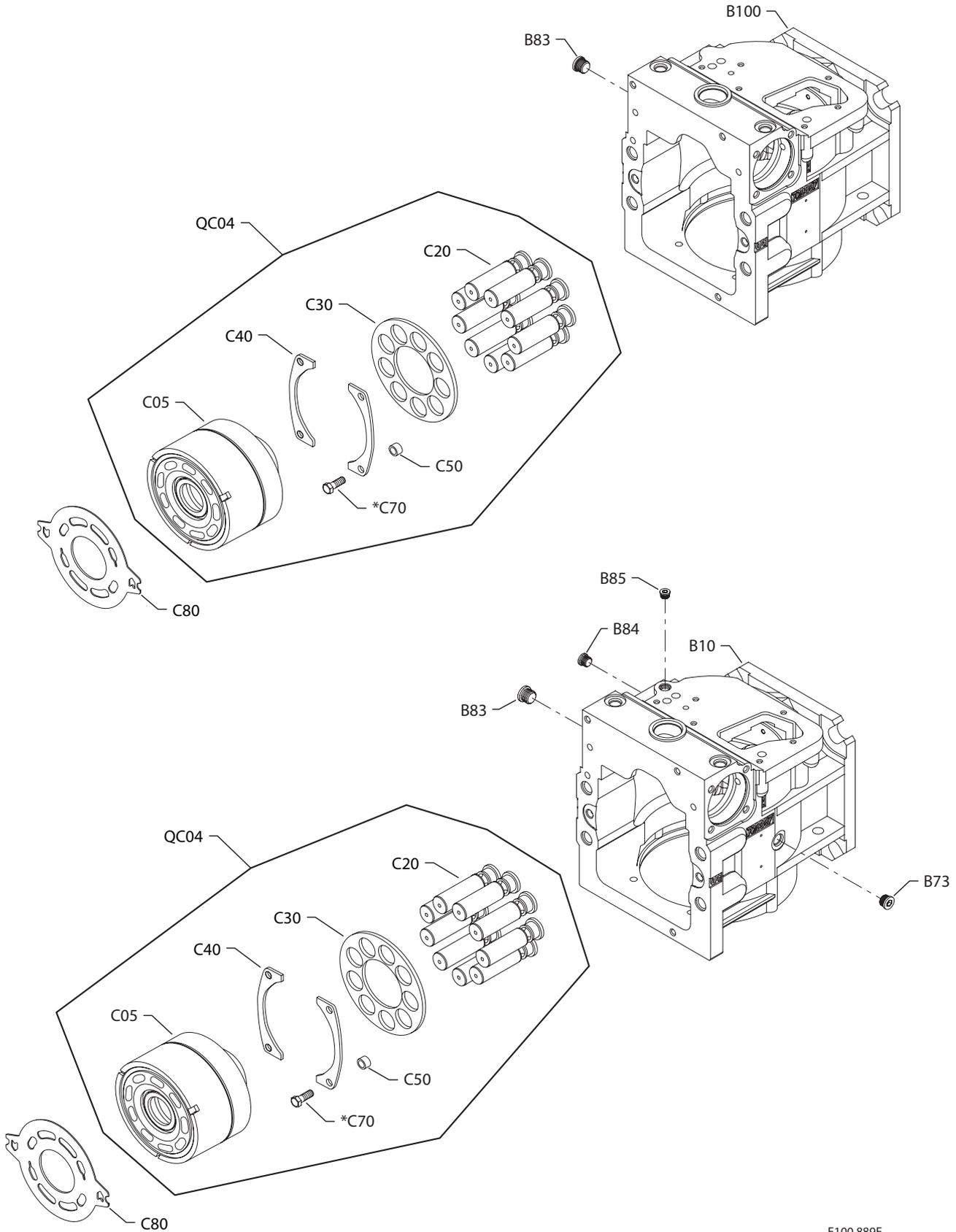

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GBP	B83	06-17		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	06-17	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	06-17		11033869	Cylinder block assembly	1
	C20	06-17		727750	Piston assembly, welded	9
	C30	06-17		11067352	Slipper retainer	1
	C40	06-17		700963	Slipper guide bearing	2
	C50	06-17		509015	Spacer	4
	C70	06-17		308643	Screw	4
	C80	06-17		518807	Valve plate	1
	QC04	06-17		519274	Cylinder block kit	1
	GBS	B83	92-19		140644	Plug assembly
B100		07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
C05		92-19		11033869	Cylinder block assembly	1
C20		92-19		727750	Piston assembly, welded	9
C30		92-19		11067352	Slipper retainer	1
C40		92-19		700963	Slipper guide bearing	2
C50		92-19		509015	Spacer	4
C70		92-19		308643	Screw	4
C80		92-19		518807	Valve plate	1
QC04		92-19		519274	Cylinder block kit	1
GBT		B10	07-10		11006984	Housing
	B73	92-19		140644	Plug assembly	1
	B83	92-19		140644	Plug assembly	1
	B84	92-19		509603	Plug assembly, M10 x 1	1
	B85	92-19		509603	Plug assembly, M10 x 1	1
	C05	92-19		11033869	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		11067352	Slipper retainer	1
	C40	92-19		700963	Slipper guide bearing	2
	C50	92-19		509015	Spacer	4
	C70	92-19		308643	Screw	4
	C80	92-19		518807	Valve plate	1
	QC04	92-19		519274	Cylinder block kit	1



Variable displacement pump

(GBV, GBW & GBY)

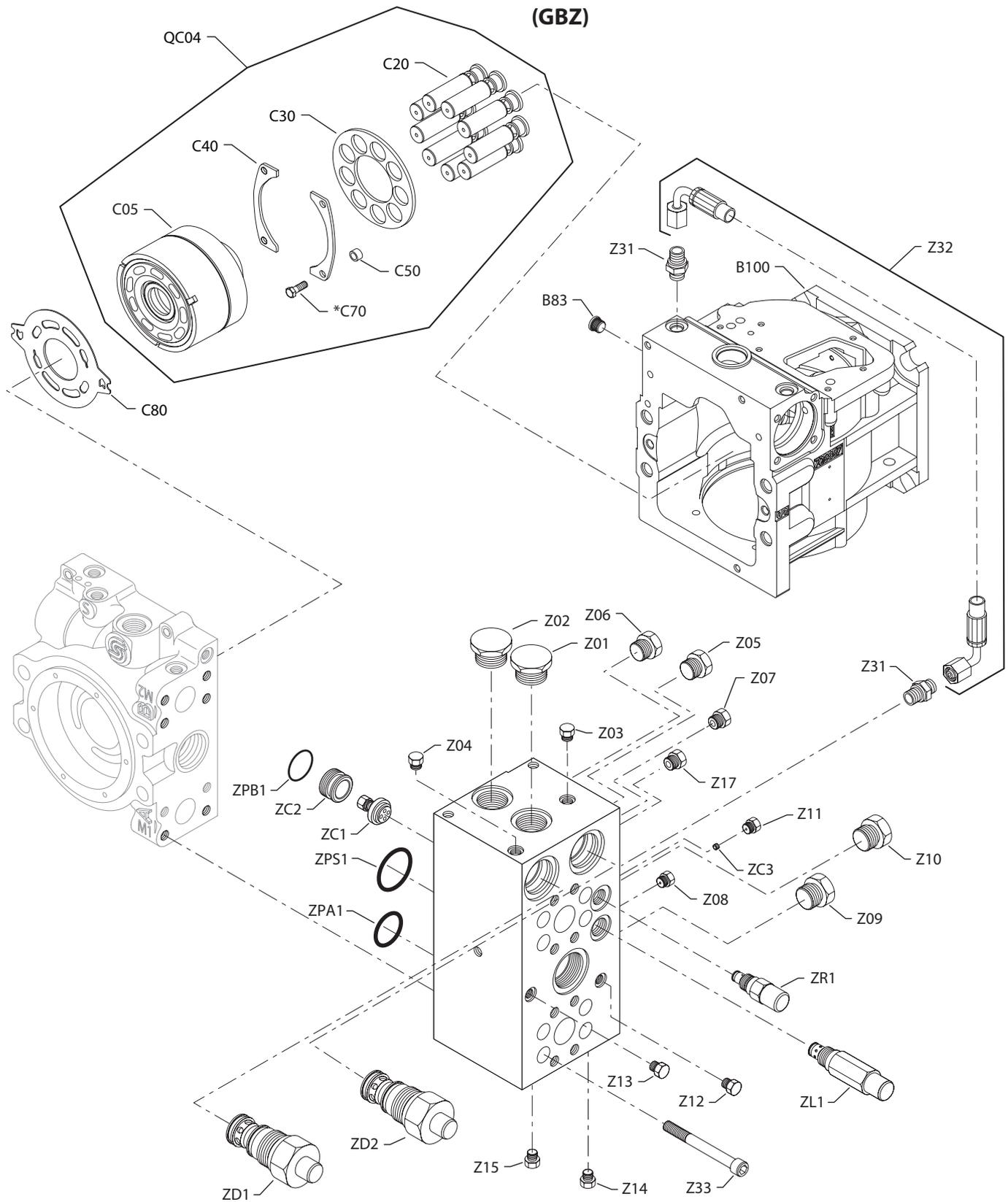



**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
GBV	B83	00-05		140644	Plug assembly	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	00-05	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	00-05		11033869	Cylinder block assembly	1	
	C20	00-05		727750	Piston assembly, welded	9	
	C30	00-05		11067352	Slipper retainer	1	
	C40	00-05		700963	Slipper guide bearing	2	
	C50	00-05		509015	Spacer	4	
	C70	00-05		308643	Screw	4	
	C80	00-05		518807	Valve plate	1	
	QC04	00-05		519274	Cylinder block kit	1	
	GBW	B83	99-50		140644	Plug assembly	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		99-50	07-09	8510060	Housing assembly (SB-1992-003)	1	
C05		99-50		11033869	Cylinder block assembly	1	
C20		99-50		727750	Piston assembly, welded	9	
C30		99-50		11067352	Slipper retainer	1	
C40		99-50		700963	Slipper guide bearing	2	
C50		99-50		509015	Spacer	4	
C70		99-50		308643	Screw	4	
C80		99-50		518807	Valve plate	1	
QC04		99-50		519274	Cylinder block kit	1	
GBY		B83	99-52		140644	Plug assembly	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	99-52	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	99-52		11033869	Cylinder block assembly	1	
	C20	99-52		727750	Piston assembly, welded	9	
	C30	99-52		11067352	Slipper retainer	1	
	C40	99-52		700963	Slipper guide bearing	2	
	C50	99-52		509015	Spacer	4	
	C70	99-52		308643	Screw	4	
	C80	99-52		518934	Valve plate	1	
	QC04	99-52		519274	Cylinder block kit	1	



Variable displacement pump



E100 888E

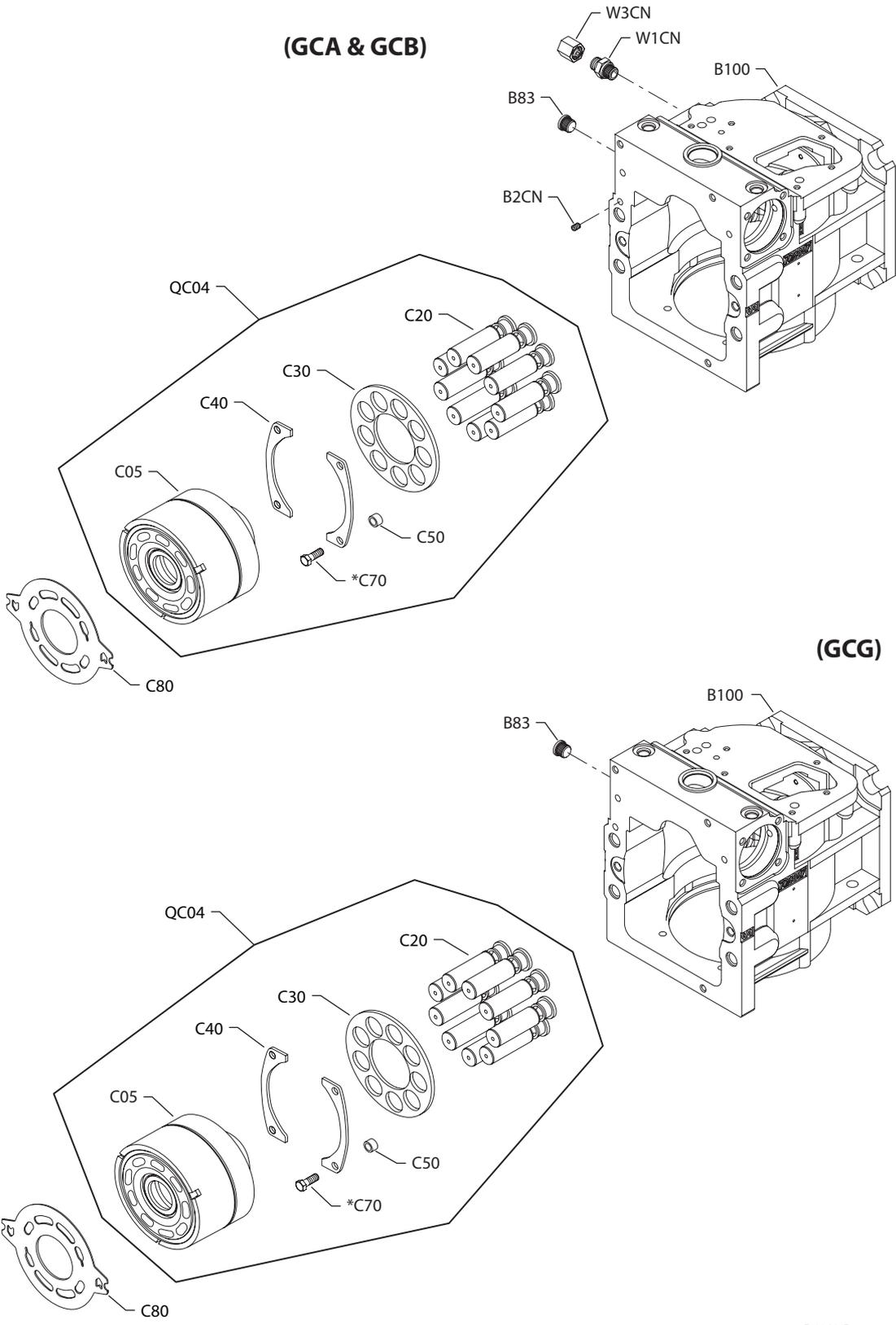
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GBZ	B83	99-52	15-40	140644	Plug assembly	1
	B100	07-10	15-40	11026913	Housing assembly (SB-2007-008A)	1
	B100	99-52	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	99-52	15-40	11033869	Cylinder block assembly	1
	C20	99-52	15-40	727750	Piston assembly, welded	9
	C30	99-52	15-40	11067352	Slipper retainer	1
	C40	99-52	15-40	700963	Slipper guide bearing	2
	C50	99-52	15-40	509015	Spacer	4
	C70	99-52	15-40	308643	Screw	4
	C80	99-52	15-40	518807	Valve plate	1
	QC04	99-52	15-40	519274	Cylinder block kit	1
	Z01	99-52	15-40	516748	Plug assembly	1
	Z02	99-52	15-40	516748	Plug assembly	1
	Z03	99-52	15-40	516742	Plug assembly	1
	Z04	99-52	15-40	516742	Plug assembly	1
	Z05	99-52	15-40	516744	Plug assembly	1
	Z06	99-52	15-40	516744	Plug assembly	1
	Z07	99-52	15-40	516745	Plug assembly	1
	Z08	99-52	15-40	516742	Plug assembly	1
	Z09	99-52	15-40	516748	Plug assembly	1
	Z10	99-52	15-40	516748	Plug assembly	1
	Z11	99-52	15-40	516742	Plug assembly	1
	Z12	99-52	15-40	516750	Plug assembly	1
	Z13	99-52	15-40	516750	Plug assembly	1
	Z14	99-52	15-40	516750	Plug assembly	1
	Z15	99-52	15-40	516750	Plug assembly	1
	Z17	99-52	15-40	516745	Plug assembly	1
	Z31	99-52	15-40	516137	Connector	2
	Z32	99-52	15-40	516134	Hydraulic hose	1
	Z33	99-52	15-40	019471	Screw	8
	ZC1	99-52	15-40	516720	Check valve	1
	ZC2	99-52	15-40	516721	Retainer	1
	ZC3	99-52	15-40	516747	Headless screw	1
	ZD1	99-52	15-40	516722	Pressure regulator	1
	ZD2	99-52	15-40	516722	Pressure regulator	1
	ZL1	99-52	15-40	516729	Relief valve	1
	ZR1	99-52	15-40	516733	Relief valve	1



Variable displacement pump



E100 886E

\* = included in overhaul seal kit Q210

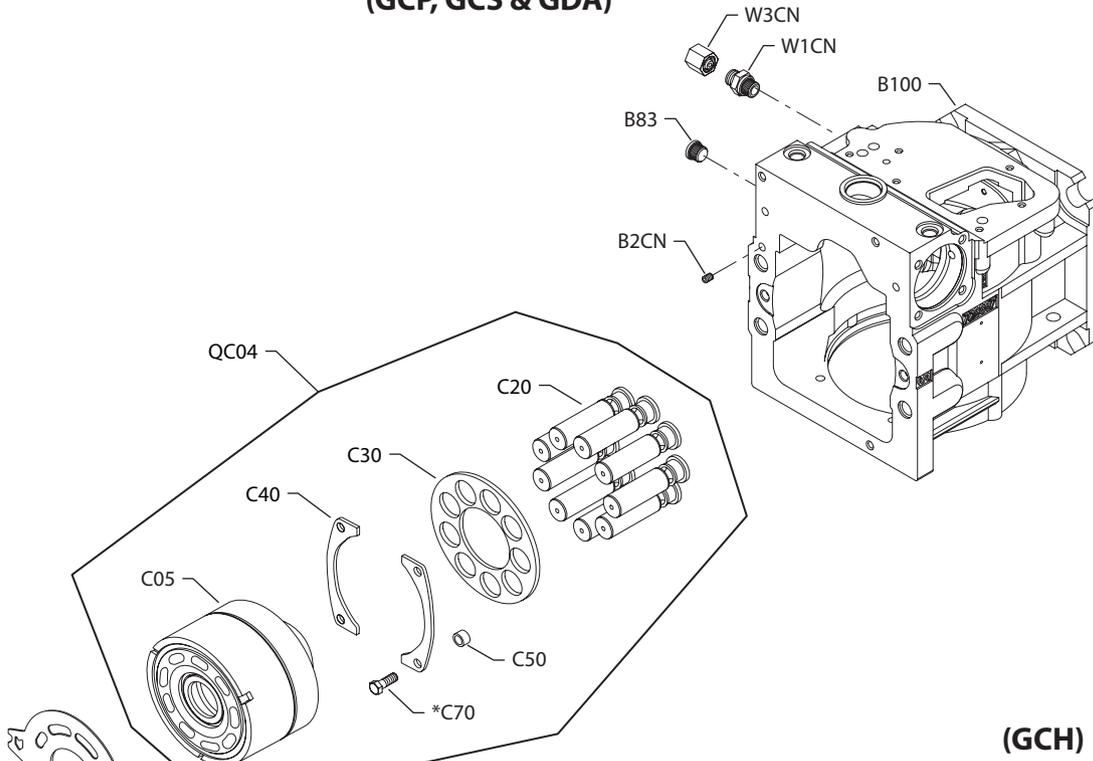

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GCA	B83	92-19		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	92-19		11033869	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		11067352	Slipper retainer	1
	C40	92-19		700963	Slipper guide bearing	2
	C50	92-19		509015	Spacer	4
	C70	92-19		308643	Screw	4
	C80	92-19		518808	Valve plate	1
	QC04	92-19		519274	Cylinder block kit	1
	GCB	B83	92-19		140644	Plug assembly
B100		07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
C05		92-19		11033869	Cylinder block assembly	1
C20		92-19		727750	Piston assembly, welded	9
C30		92-19		11067352	Slipper retainer	1
C40		92-19		700963	Slipper guide bearing	2
C50		92-19		509015	Spacer	4
C70		92-19		308643	Screw	4
C80		92-19		518808	Valve plate	1
QC04		92-19		519274	Cylinder block kit	1
GCG		B2CN	92-19		775312	Set screw, M8 x 8
	B83	92-19		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	92-19		11033869	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		11067352	Slipper retainer	1
	C40	92-19		700963	Slipper guide bearing	2
	C50	92-19		509015	Spacer	4
	C70	92-19		308643	Screw	4
	C80	92-19		518808	Valve plate	1
	QC04	92-19		519274	Cylinder block kit	1
	W1CN	92-19		723726	Connector	1
	W3CN	92-19		574095	Cap	1

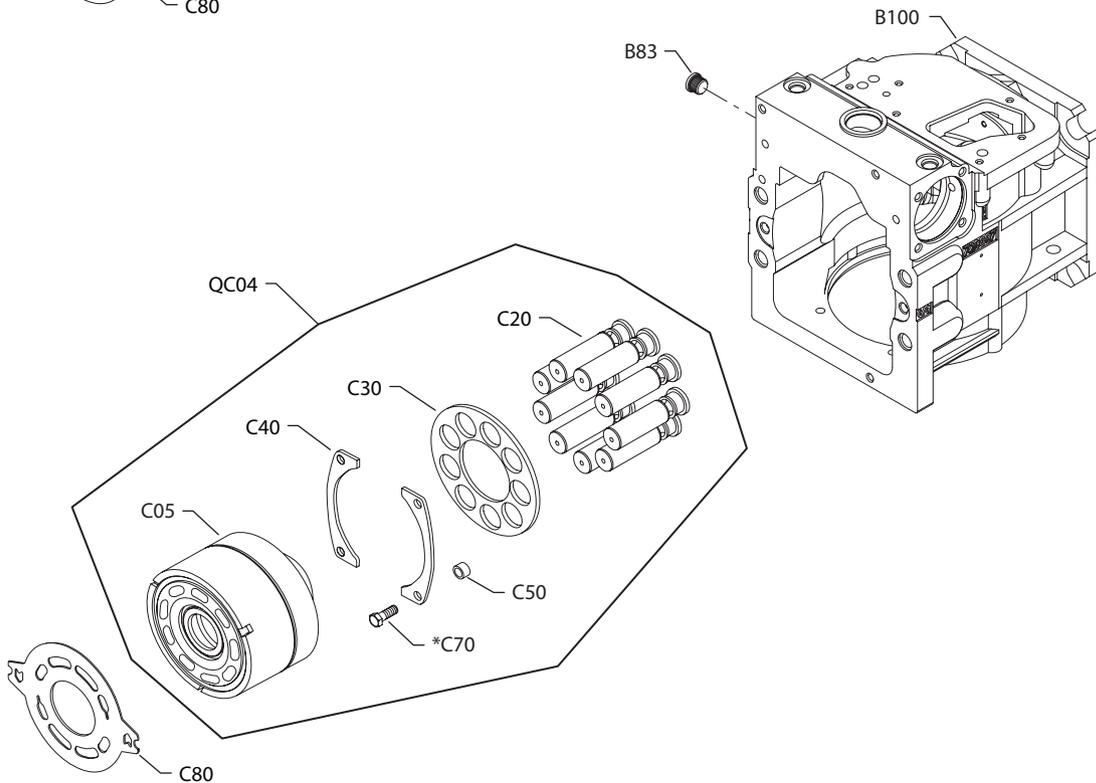


Variable displacement pump

(GCP, GCS & GDA)



(GCH)



E100 886E

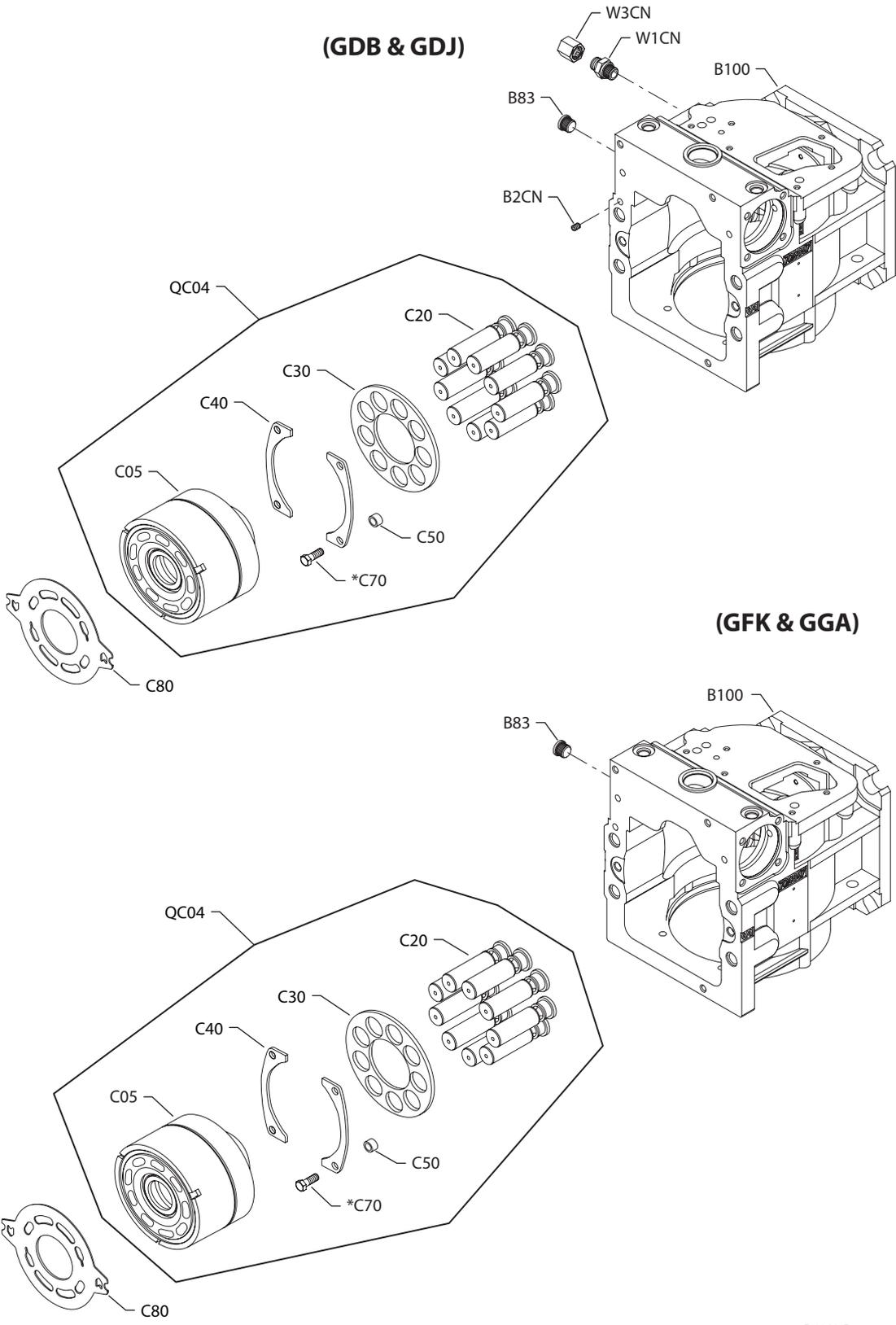
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
GCH	B2CN	13-02		775312	Set screw, M8 x 8	1	
	B83	13-02		140644	Plug assembly	1	
	B100	13-02		11026913	Housing assembly	1	
	C05	13-02		11033869	Cylinder block assembly	1	
	C20	13-02		727750	Piston assembly, welded	9	
	C30	13-02		11067352	Slipper retainer	1	
	C40	13-02		700963	Slipper guide bearing	2	
	C50	13-02		509015	Spacer	4	
	C70	13-02		308643	Screw	4	
	C80	13-02		518808	Valve plate	1	
	QC04	13-02		519274	Cylinder block kit	1	
	W1CN	13-02		723726	Connector	1	
	W3CN	13-02		574095	Cap	1	
GCP	B83	92-19		140644	Plug assembly	1	
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1	
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	92-19		11033869	Cylinder block assembly	1	
	C20	92-19		727750	Piston assembly, welded	9	
	C30	92-19		11067352	Slipper retainer	1	
	C40	92-19		700963	Slipper guide bearing	2	
	C50	92-19		509015	Spacer	4	
	C70	92-19		308643	Screw	4	
	C80	92-19		518808	Valve plate	1	
	QC04	92-19		519274	Cylinder block kit	1	
	GCS	B83	98-06		140644	Plug assembly	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
B100		92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
C05		92-19		11033869	Cylinder block assembly	1	
C20		98-06		727750	Piston assembly, welded	9	
C30		98-06		11067352	Slipper retainer	1	
C40		98-06		700963	Slipper guide bearing	2	
C50		98-06		509015	Spacer	4	
C70		98-06		308643	Screw	4	
C80		98-06		518808	Valve plate	1	
QC04		98-06		519274	Cylinder block kit	1	
GDA		B83	92-19		140644	Plug assembly	1
		B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1	
	C05	92-19		11033869	Cylinder block assembly	1	
	C20	92-19		727750	Piston assembly, welded	9	
	C30	92-19		11067352	Slipper retainer	1	
	C40	92-19		700963	Slipper guide bearing	2	
	C50	92-19		509015	Spacer	4	
	C70	92-19		308643	Screw	4	
	C80	92-19		518932	Valve plate	1	
	QC04	92-19		519274	Cylinder block kit	1	



Variable displacement pump



E100 886E

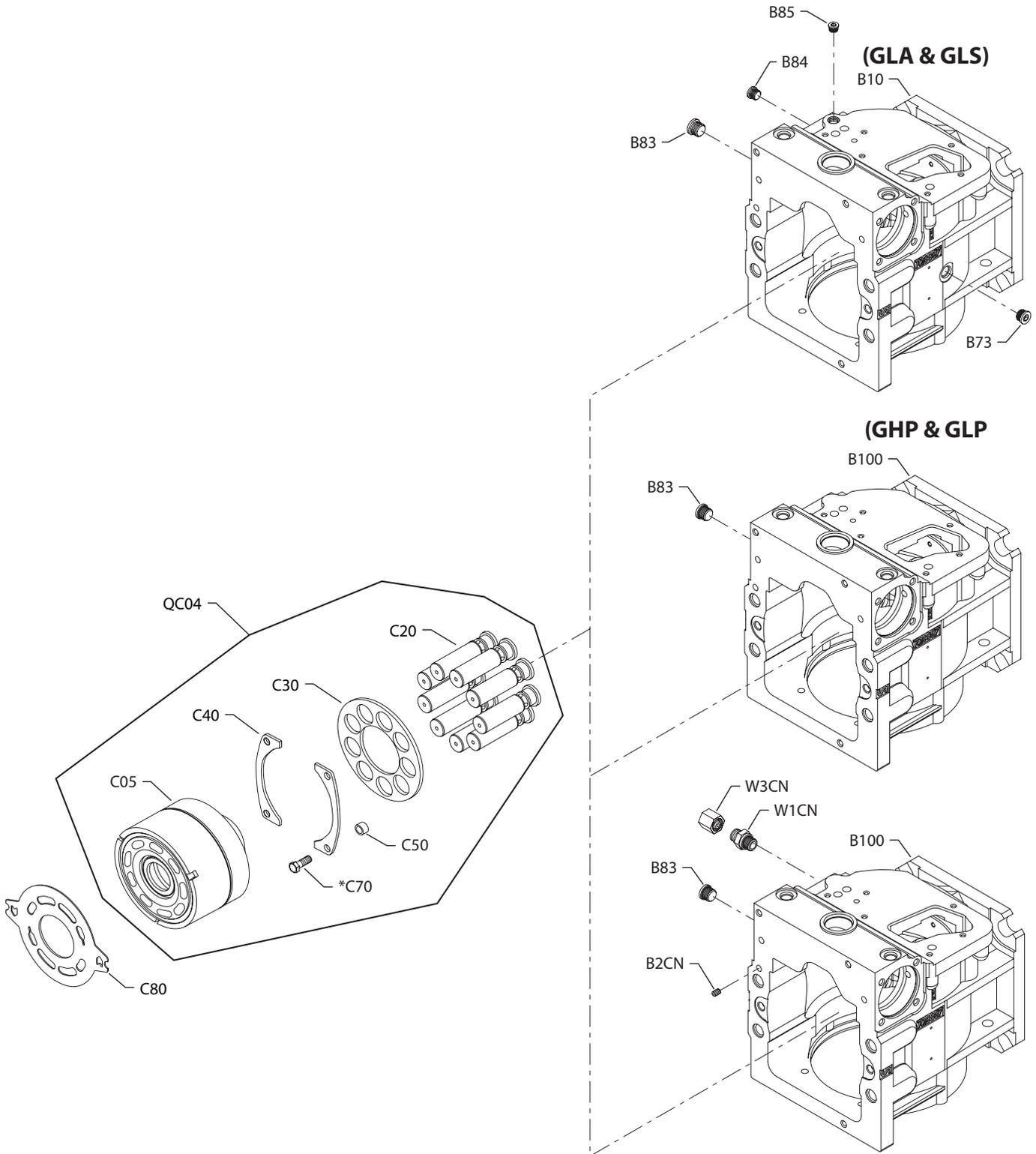
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GDB	B2CN	92-19	08-03	775312	Set screw, M8 x 8	1
	B83	92-19	08-03	140644	Plug assembly	1
	B100	07-10	08-03	11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	92-19	08-03	11033869	Cylinder block assembly	1
	C20	92-19	08-03	727750	Piston assembly, welded	9
	C30	92-19	08-03	11067352	Slipper retainer	1
	C40	92-19	08-03	700963	Slipper guide bearing	2
	C50	92-19	08-03	509015	Spacer	4
	C70	92-19	08-03	308643	Screw	4
	C80	92-19	08-03	518932	Valve plate	1
	QC04	92-19	08-03	519274	Cylinder block kit	1
	W1CN	92-19	08-03	723726	Connector	1
	W3CN	92-19	08-03	574095	Cap	1
GDJ	B83	17-47		140644	Plug assembly	1
	B100	17-47		11026913	Housing assembly	1
	C05	17-47		11033869	Cylinder block assembly, without speed ring	1
	C20	17-47		727750	Piston assembly, welded	9
	C30	17-47		11067352	Slipper retainer	1
	C40	17-47		700963	Slipper guide bearing	2
	C50	17-47		509015	Spacer	4
	C70	17-47		308643	Screw	4
	C80	17-47		518807	Valve plate	1
	QC04	17-47		519274	Cylinder block kit, without speed ring, welded piston	1
	GFK	B83	08-51		140644	Plug assembly
B100		08-51		11026913	Housing assembly	1
C05		08-51		11033869	Cylinder block assembly	1
C20		08-51		727750	Piston assembly, welded	9
C30		08-51		11067352	Slipper retainer	1
C40		08-51		700963	Slipper guide bearing	2
C50		08-51		509015	Spacer	4
C70		08-51		308643	Screw	4
C80		08-51		518807	Valve plate	1
QC04		08-51		519274	Cylinder block kit	1
GGA		B83	12-39		140644	Plug assembly
	B100	12-39		11026913	Housing assembly	1
	C05	12-39		11033869	Cylinder block assembly	1
	C20	12-39		727750	Piston assembly, welded	9
	C30	12-39		11067352	Slipper retainer	1
	C40	12-39		700963	Slipper guide bearing	2
	C50	12-39		509015	Spacer	4
	C70	12-39		308643	Screw	4
	C80	12-39		518935	Valve plate	1
	QC04	12-39		519274	Cylinder block kit	1



Variable displacement pump



E100 890E

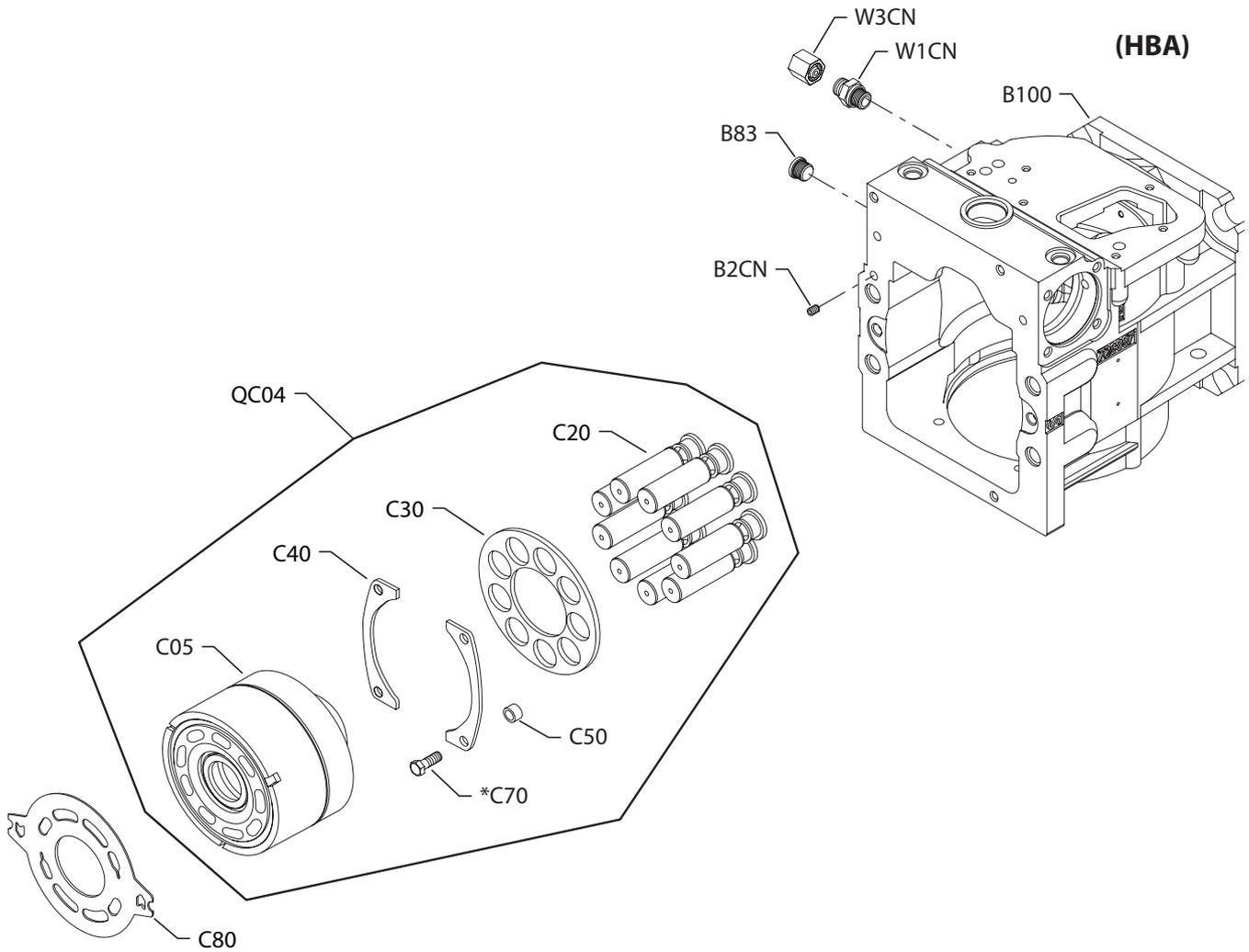
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GHP	B83	12-39		140644	Plug assembly	1
	B100	12-39		11117179	Housing assembly	1
	C05	12-39		11033869	Cylinder block assembly	1
	C20	12-39		727750	Piston assembly, welded	9
	C30	12-39		11067352	Slipper retainer	1
	C40	12-39		700963	Slipper guide bearing	2
	C50	12-39		509015	Spacer	4
	C70	12-39		308643	Screw	4
	C80	12-39		518807	Valve plate	1
	QC04	12-39		519274	Cylinder block kit	1
GLA	B83	00-13		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	00-13	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	00-13		11033869	Cylinder block assembly	1
	C20	00-13		727750	Piston assembly, welded	9
	C30	00-13		11067352	Slipper retainer	1
	C40	00-13		700963	Slipper guide bearing	2
	C50	00-13		509015	Spacer	4
	C70	00-13		308643	Screw	4
	C80	00-13		518937	Valve plate, CW, lapped	1
	C80	00-13		518938	Valve plate, CCW, lapped	1
	QC04	00-13		519274	Cylinder block kit	1
	GLP	B73	98-02		140644	Plug assembly
B83		98-02		140644	Plug assembly	1
B84		98-02		509603	Plug assembly, M10 x 1	1
B85		98-02		509603	Plug assembly, M10 x 1	1
B10		07-10		11006984	Housing (SB-2007-008A)	1
C05		98-02		11033869	Cylinder block assembly	1
C20		98-02		727750	Piston assembly, welded	9
C30		98-02		11067352	Slipper retainer	1
C40		98-02		700963	Slipper guide bearing	2
C50		98-02		509015	Spacer	4
C70		98-02		308643	Screw	4
C80		98-02		518937	Valve plate, CW, lapped	1
C80		98-02		518938	Valve plate, CCW, lapped	1
QC04		98-02		519274	Cylinder block kit	1
GLS		B83	98-18		140644	Plug assembly
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	98-18	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	98-18		11033869	Cylinder block assembly	1
	C20	98-18		727750	Piston assembly, welded	9
	C30	98-18		11067352	Slipper retainer	1
	C40	98-18		700963	Slipper guide bearing	2
	C50	98-18		509015	Spacer	4
	C70	98-18		308643	Screw	4
	C80	98-18		518937	Valve plate, CW, lapped	1
	C80	98-18		518938	Valve plate, CCW, lapped	1
	QC04	98-18		519274	Cylinder block kit	1



Variable displacement pump



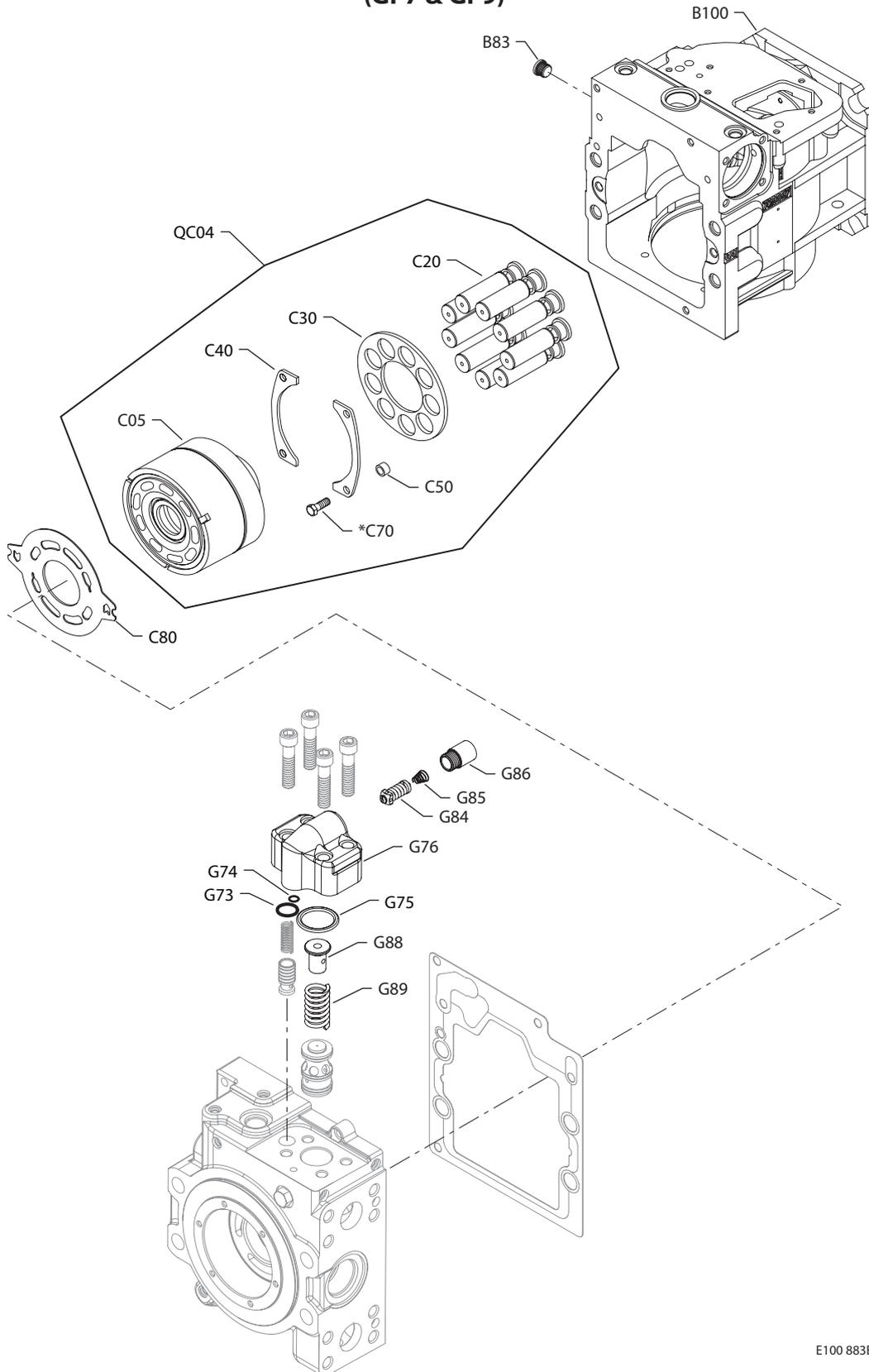

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
HBA	B2CN	94-14		775312	Set screw, M8 x 8	1
	B83	94-14		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	94-14	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	94-14		11033869	Cylinder block assembly	1
	C20	94-14		727750	Piston assembly, welded	9
	C30	94-14		11067352	Slipper retainer	1
	C40	94-14		700963	Slipper guide bearing	2
	C50	94-14		509015	Spacer	4
	C70	94-14		308643	Screw	4
	C80	94-14		518933	Valve plate	1
	QC04	94-14		519274	Cylinder block kit	1
	W1CN	94-14		723726	Connector	1
	W3CN	94-14		574095	Cap	1



Variable displacement pump

(GP7 & GP9)



E100 883E

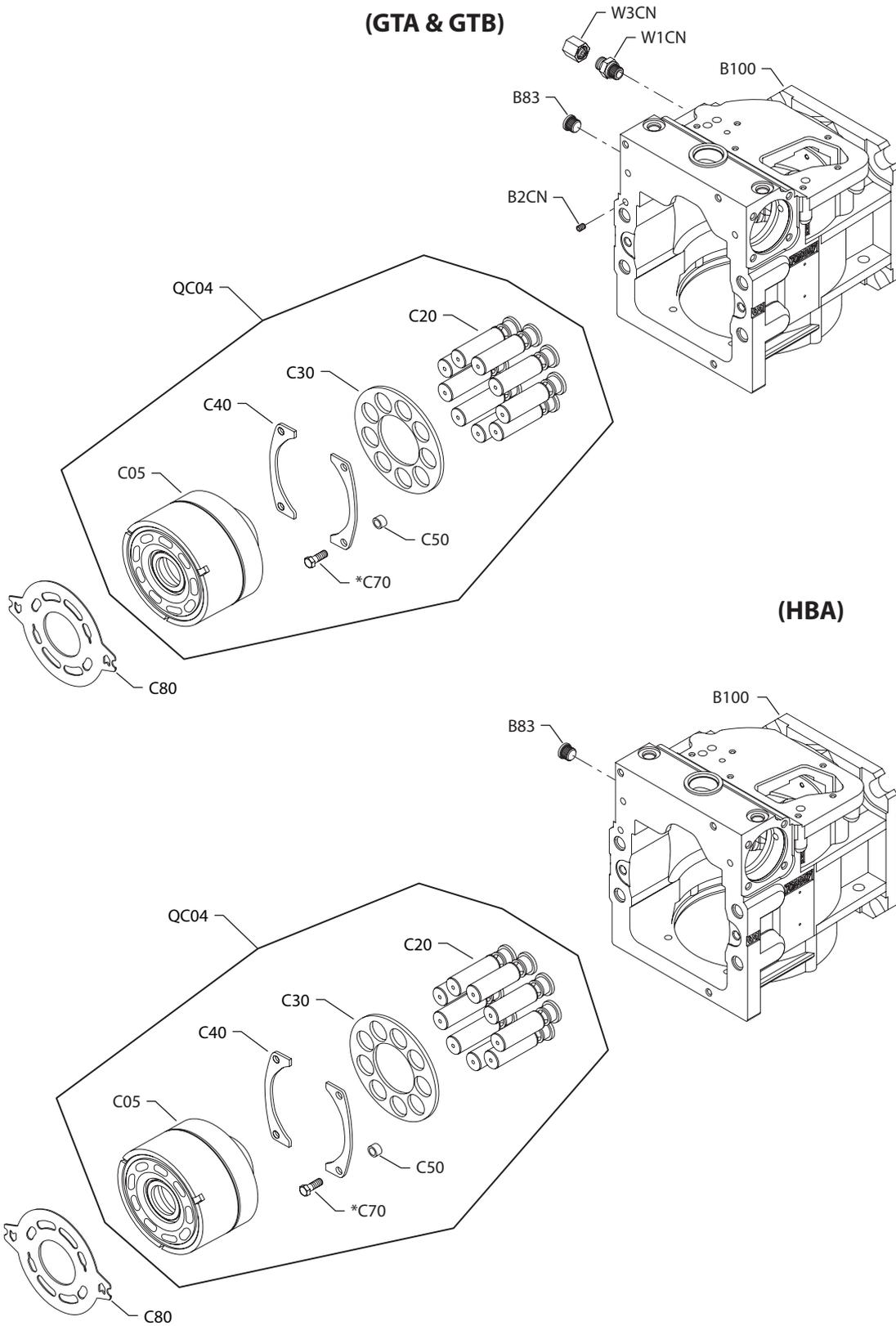
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GP7	B83	15-24		140644	Plug assembly	1
	B100	15-24		11026913	Housing assembly	1
	C05	15-24		11033869	Cylinder block assembly	1
	C20	15-24		727750	Piston assembly, welded	9
	C30	15-24		11067352	Slipper retainer	1
	C40	15-24		700963	Slipper guide bearing	2
	C50	15-24		509015	Spacer	4
	C70	15-24		308643	Screw	4
	C80	15-24		518937	Valve plate, CW	1
	C80	15-24		518938	Valve plate, CCW	1
	G73	15-24		519873	Seal	1
	G74	15-24		144725 (9004105-0110)	O-ring	1
	G75	15-24		518329	O-ring	1
	G76	15-24		517828	Valve housing	1
	G84	15-24		3103375-0280	SCR valve, 280 bar [4060 psi]	1
	G85	15-24		4800780	Conial spring	1
	G86	15-24		11126727	Plug assembly	1
	G88	15-24		517829	Spring guide	1
	G89	15-24		517831	Spring	1
	QC04	15-24		519274	Cylinder block kit	1
GP9	B83	02-30		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	02-30	07-09	8510060	Housing assembly	1
	C05	02-30		11033869	Cylinder block assembly	1
	C20	02-30		727750	Piston assembly, welded	9
	C30	02-30		11067352	Slipper retainer	1
	C40	02-30		700963	Slipper guide bearing	2
	C50	02-30		509015	Spacer	4
	C70	02-30		308643	Screw	4
	C80	02-30		518807	Valve plate	1
	G73	02-30		519873	Seal	1
	G74	02-30		144725 (9004105-0110)	O-ring	1
	G75	02-30		518329	O-ring	1
	G76	02-30		517828	Valve housing	1
	G84	02-30		3103375-0140	SCR valve, 140 bar [2030 psi]	1
	G85	02-30		4800780	Conial spring	1
	G86	02-30		11126727	Plug assembly	1
	G88	02-30		517829	Spring guide	1
	G89	02-30		517831	Spring	1
	QC04	02-30		519274	Cylinder block kit	1



Variable displacement pump



E100 886E

\* = included in overhaul seal kit Q210

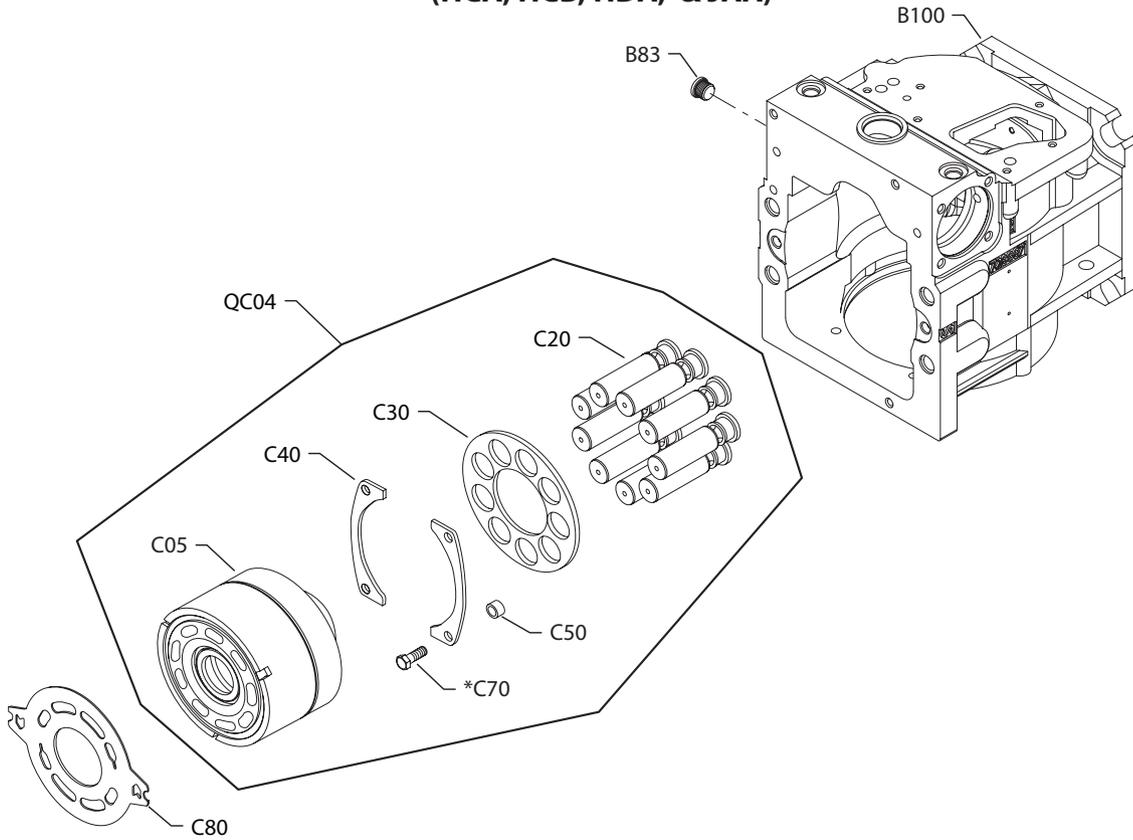

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GTA	B83	14-02		140644	Plug assembly	1
	B100	14-02		11026913	Housing assembly	1
	C05	14-02		11033869	Cylinder block assembly	1
	C20	14-02		727750	Piston assembly, welded	9
	C30	14-02		11067352	Slipper retainer	1
	C40	14-02		700963	Slipper guide bearing	2
	C50	14-02		509015	Spacer	4
	C70	14-02		308643	Screw	4
	C80	14-02		518807	Valve plate	1
	QC04	14-02		519274	Cylinder block kit	1
GTB	B83	15-14		140644	Plug assembly	1
	B100	15-14		11026913	Housing assembly	1
	C05	15-14		11033869	Cylinder block assembly	1
	C20	15-14		727750	Piston assembly, welded	9
	C30	15-14		11067352	Slipper retainer	1
	C40	15-14		700963	Slipper guide bearing	2
	C50	15-14		509015	Spacer	4
	C70	15-14		308643	Screw	4
	C80	15-14		518807	Valve plate	1
	QC04	15-14		519274	Cylinder block kit	1
HBA	B2CN	08-04	08-03	775312	Set screw	1
	B83	08-04	08-03	140644	Plug assembly	1
	B100	08-04	08-03	11026913	Housing assembly	1
	C05	08-04	08-03	519258	Cylinder block assembly	1
	C20	08-04	08-03	727750	Piston assembly, welded	9
	C30	08-04	08-03	11067352	Slipper retainer	1
	C40	08-04	08-03	700963	Slipper guide bearing	2
	C50	08-04	08-03	509015	Spacer	4
	C70	08-04	08-03	308643	Screw	4
	C80	08-04	08-03	518934	Valve plate	1
	QC04	08-04	08-03	519274	Cylinder block kit	1
	W1CN	08-04	08-03	723726	Connector	1
	W3CN	08-04	08-03	574095	Cap	1



Variable displacement pump

(HCA, HCB, HDA, & JAA)



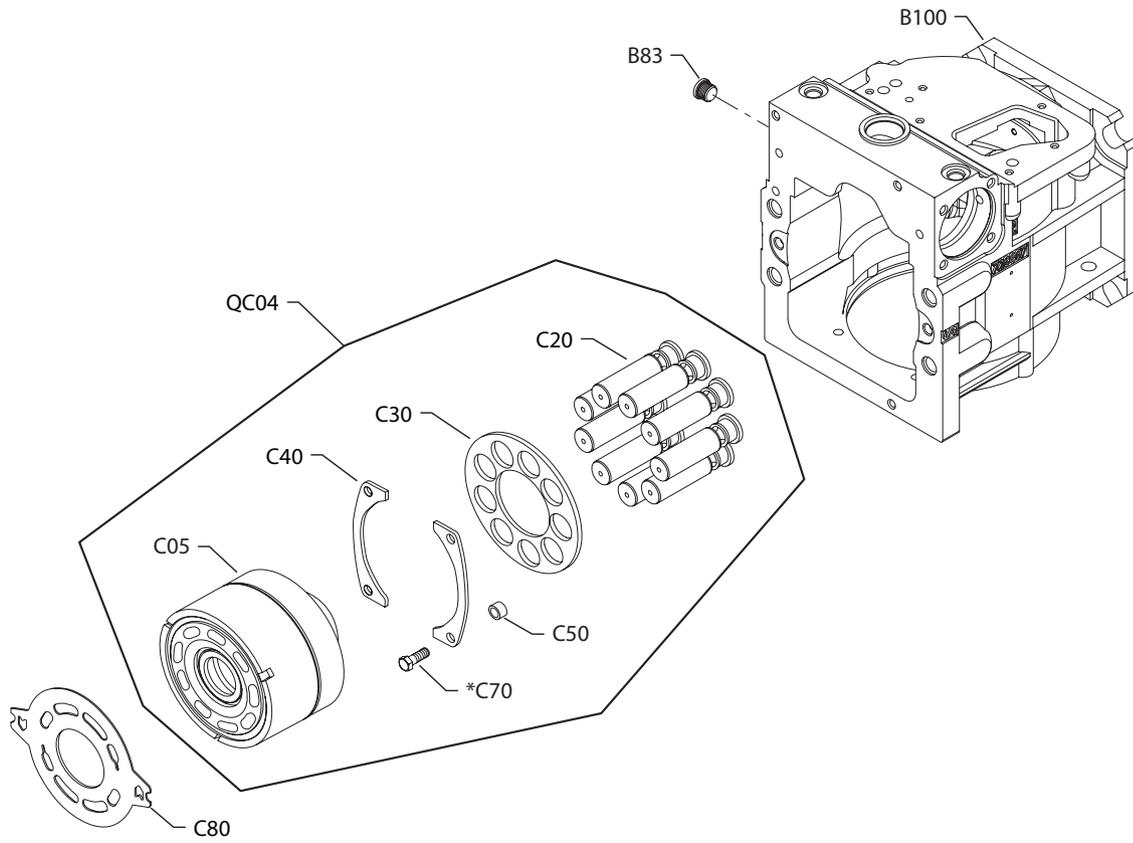

**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
HCA	B83	92-19		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	92-19	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	92-19		11033869	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		11067352	Slipper retainer	1
	C40	92-19		700963	Slipper guide bearing	2
	C50	92-19		509015	Spacer	4
	C70	92-19		308643	Screw	4
	C80	92-19		518933	Valve plate	1
QC04	92-19		519274	Cylinder block kit	1	
HCB	B83	13-41		140644	Plug assembly	1
	B100	13-41		11026913	Housing assembly	1
	C05	13-41		11033869	Cylinder block assembly	1
	C20	13-41		727750	Piston assembly, welded	9
	C30	13-41		11067352	Slipper retainer	1
	C40	13-41		700963	Slipper guide bearing	2
	C50	13-41		509015	Spacer	4
	C70	13-41		308643	Screw	4
	C80	13-41		518933	Valve plate	1
	QC04	13-41		519274	Cylinder block kit	1
HDA	B83	00-22		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	00-22	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	00-22		11033869	Cylinder block assembly	1
	C20	00-22		727750	Piston assembly, welded	9
	C30	00-22		11067352	Slipper retainer	1
	C40	00-22		700963	Slipper guide bearing	2
	C50	00-22		509015	Spacer	4
	C70	00-22		308643	Screw	4
	C80	00-22		518807	Valve plate	1
QC04	00-22		519274	Cylinder block kit	1	
JAA	B83	94-50		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	94-50	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	94-50		11033869	Cylinder block assembly	1
	C20	94-50		727750	Piston assembly, welded	9
	C30	94-50		11067352	Slipper retainer	1
	C40	94-50		700963	Slipper guide bearing	2
	C50	94-50		509015	Spacer	4
	C70	94-50		308643	Screw	4
	C80	94-50		518933	Valve plate	1
QC04	94-50		519274	Cylinder block kit	1	



Variable displacement pump

(JCA, JCB, JCE, & JCF)




**Variable displacement pump**
**Special hardware**

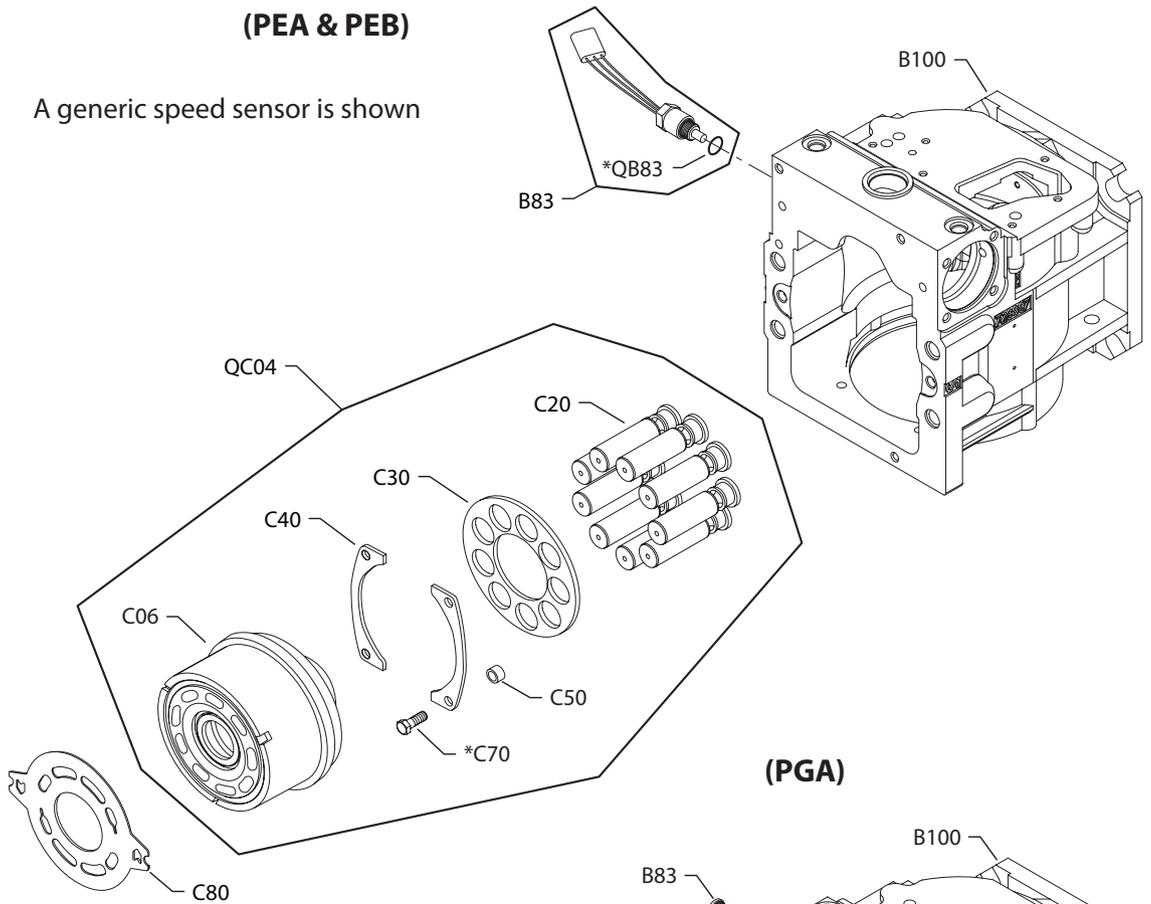
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
JCA	B83	08-12		140644	Plug assembly	1
	B100	08-12		11026913	Housing assembly	1
	C05	08-12		11033869	Cylinder block assembly	1
	C20	08-12		727750	Piston assembly, welded	9
	C30	08-12		11067352	Slipper retainer	1
	C40	08-12		700963	Slipper guide bearing	2
	C50	08-12		509015	Spacer	4
	C70	08-12		308643	Screw	4
	C80	08-12		518807	Valve plate	1
	QC04	08-12		519274	Cylinder block kit	1
JCB	B83	09-14		140644	Plug assembly	1
	B100	09-14		11026913	Housing assembly	1
	C05	09-14		11033869	Cylinder block assembly	1
	C20	09-14		727750	Piston assembly, welded	9
	C30	09-14		11067352	Slipper retainer	1
	C40	09-14		700963	Slipper guide bearing	2
	C50	09-14		509015	Spacer	4
	C70	09-14		308643	Screw	4
	C80	09-14		518807	Valve plate	1
	QC04	09-14		519274	Cylinder block kit	1
JCE	B83	09-39		140644	Plug assembly	1
	B100	09-39		11026913	Housing assembly	1
	C05	09-39		11033869	Cylinder block assembly	1
	C20	09-39		727750	Piston assembly, welded	9
	C30	09-39		11067352	Slipper retainer	1
	C40	09-39		700963	Slipper guide bearing	2
	C50	09-39		509015	Spacer	4
	C70	09-39		308643	Screw	4
	C80	09-39		518807	Valve plate	1
	QC04	09-39		519274	Cylinder block kit	1
JCF	B83	10-15		140644	Plug assembly	1
	B100	10-15		11026913	Housing assembly	1
	C05	10-15		11033869	Cylinder block assembly	1
	C20	10-15		727750	Piston assembly, welded	9
	C30	10-15		11067352	Slipper retainer	1
	C40	10-15		700963	Slipper guide bearing	2
	C50	10-15		509015	Spacer	4
	C70	10-15		308643	Screw	4
	C80	10-15		518808	Valve plate	1
	QC04	10-15		519274	Cylinder block kit	1



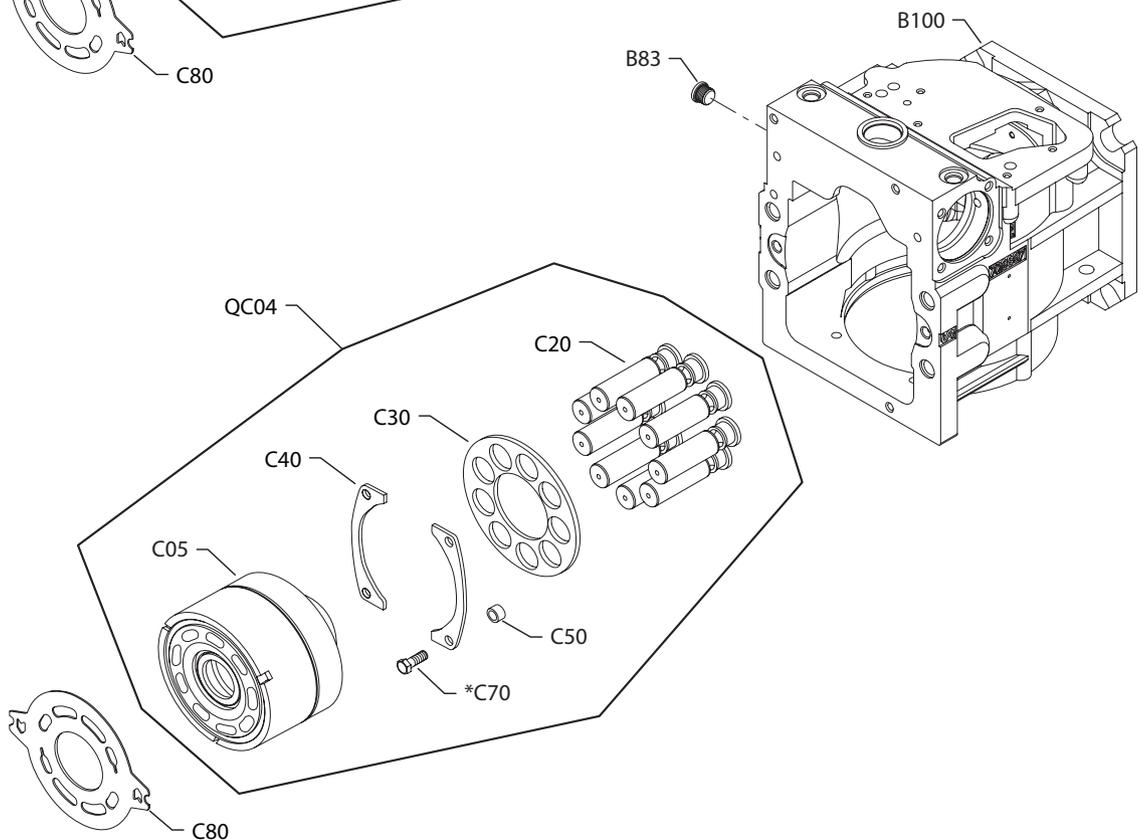
Variable displacement pump

(PEA & PEB)

A generic speed sensor is shown



(PGA)



E101 818E

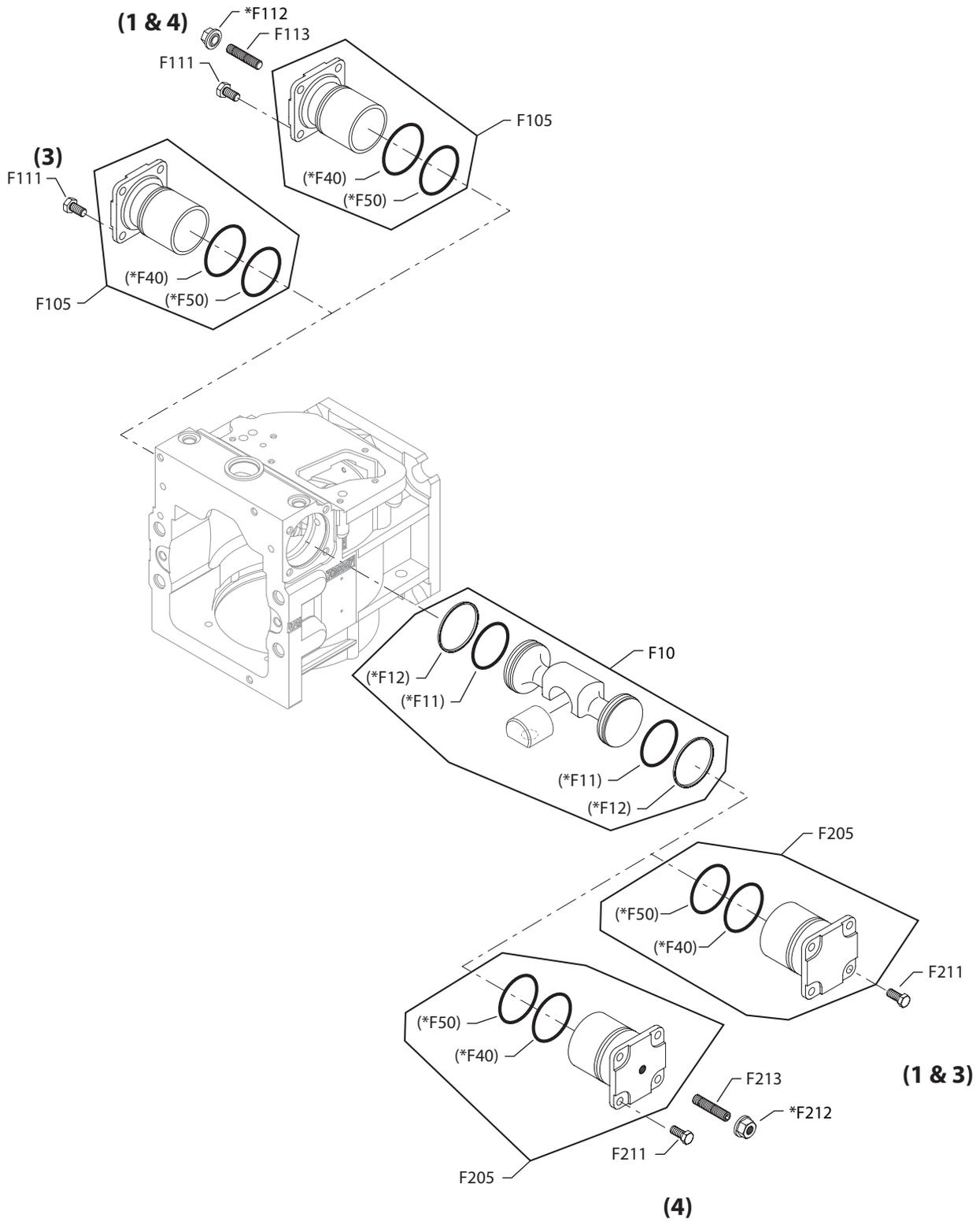
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Special hardware**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
PEA	B83	07-32		KPPG156	Speed sensor assembly	1
	B100	07-10		11026913	Housing assembly	1
	C06	08-12		519259	Cylinder block assembly with speed ring	1
	C20	08-12		727750	Piston assembly, welded	9
	C30	08-12		11067352	Slipper retainer	1
	C40	08-12		700963	Slipper guide bearing	2
	C50	08-12		509015	Spacer	4
	C70	08-12		308643	Screw	4
	C80	08-12		518807	Valve plate	1
	QC04	08-12		519275	Cylinder block kit with speed ring	1
PEB	B83	14-40		KPPG156	Speed sensor assembly	1
	B100	14-40		11026913	Housing assembly	1
	C06	14-40		519259	Cylinder block assembly with speed ring	1
	C20	14-40		727750	Piston assembly, welded	9
	C30	14-40		11067352	Slipper retainer	1
	C40	14-40		700963	Slipper guide bearing	2
	C50	14-40		509015	Spacer	4
	C70	14-40		308643	Screw	4
	C80	14-40		518937	Valve plate, CW	1
	C80	14-40		518938	Valve plate, CCW	1
QC04	14-40		519275	Cylinder block kit with speed ring	1	
PGA	B83	07-13		140644	Plug assembly	1
	B100	07-13		11026913	Housing assembly	1
	C05	07-13		11033869	Cylinder block assembly	1
	C20	07-13		727750	Piston assembly, welded	9
	C30	07-13		11067352	Slipper retainer	1
	C40	07-13		700963	Slipper guide bearing	2
	C50	07-13		509015	Spacer	4
	C70	07-13		308643	Screw	4
	C80	07-13		518807	Valve plate	1
	QC04	07-13		519274	Cylinder block kit	1



Variable displacement pump



E100 892E

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



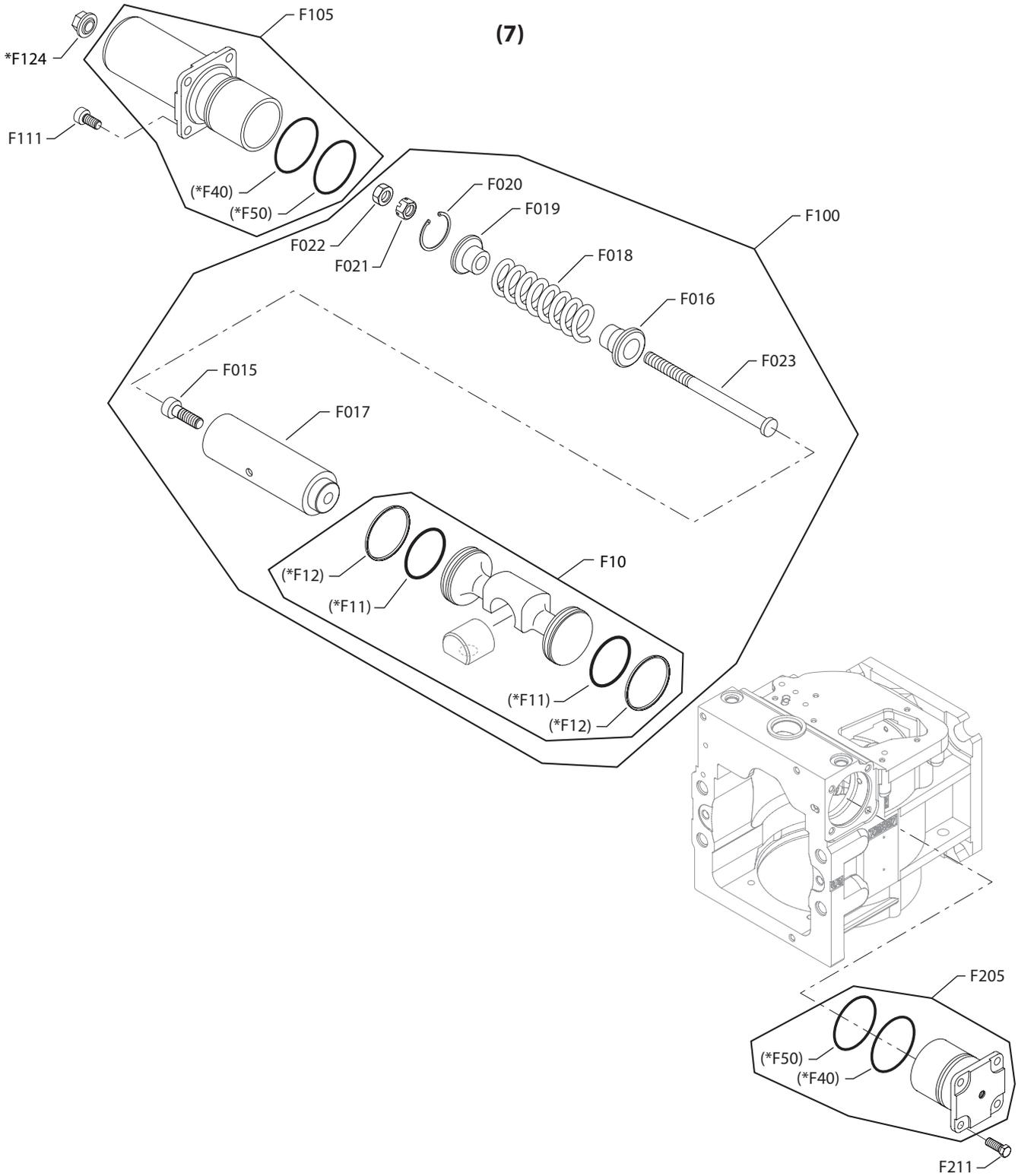
Variable displacement pump

Displacement limitation

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	F10	03-21		11046630	Servo piston assembly	1
	F105	03-21		11060160	Servo cylinder assembly, adjustable	1
	F111	03-21		378083 (9007210-0804)	Screw	4
	F112	03-21		042432	Seal nut, M10	1
	F113	03-21		11085626	Set screw, M10 x50	1
	F205	03-21		11060158	Servo cylinder assembly, non-adjustable	1
	F211	03-21		378083 (9007210-0804)	Screw	4
	3	F10	89-41		11046630	Servo piston assembly
F105		89-41		11060158	Servo cylinder assembly, non-adjustable	1
F111		89-41		378083 (9007210-0804)	Screw	4
F205		89-41		11060158	Servo cylinder assembly, non-adjustable	1
F211		89-41		378083 (9007210-0804)	Screw	4
4		F10	89-41		11046630	Servo piston assembly
	F105	89-41		11060160	Servo cylinder assembly, adjustable	1
	F111	89-41		378083 (9007210-0804)	Screw	4
	F112	89-41		042432	Seal nut, M10	1
	F113	89-41		11085626	Set screw M10 x50	1
	F205	89-41		11060160	Servo cylinder assembly, adjustable	1
	F211	89-41		378083 (9007210-0804)	Screw	4
	F212	89-41		042432	Seal nut, M10	1
	F213	89-41		11085626	Set screw M10 x50	1



Variable displacement pump



E100 893E

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

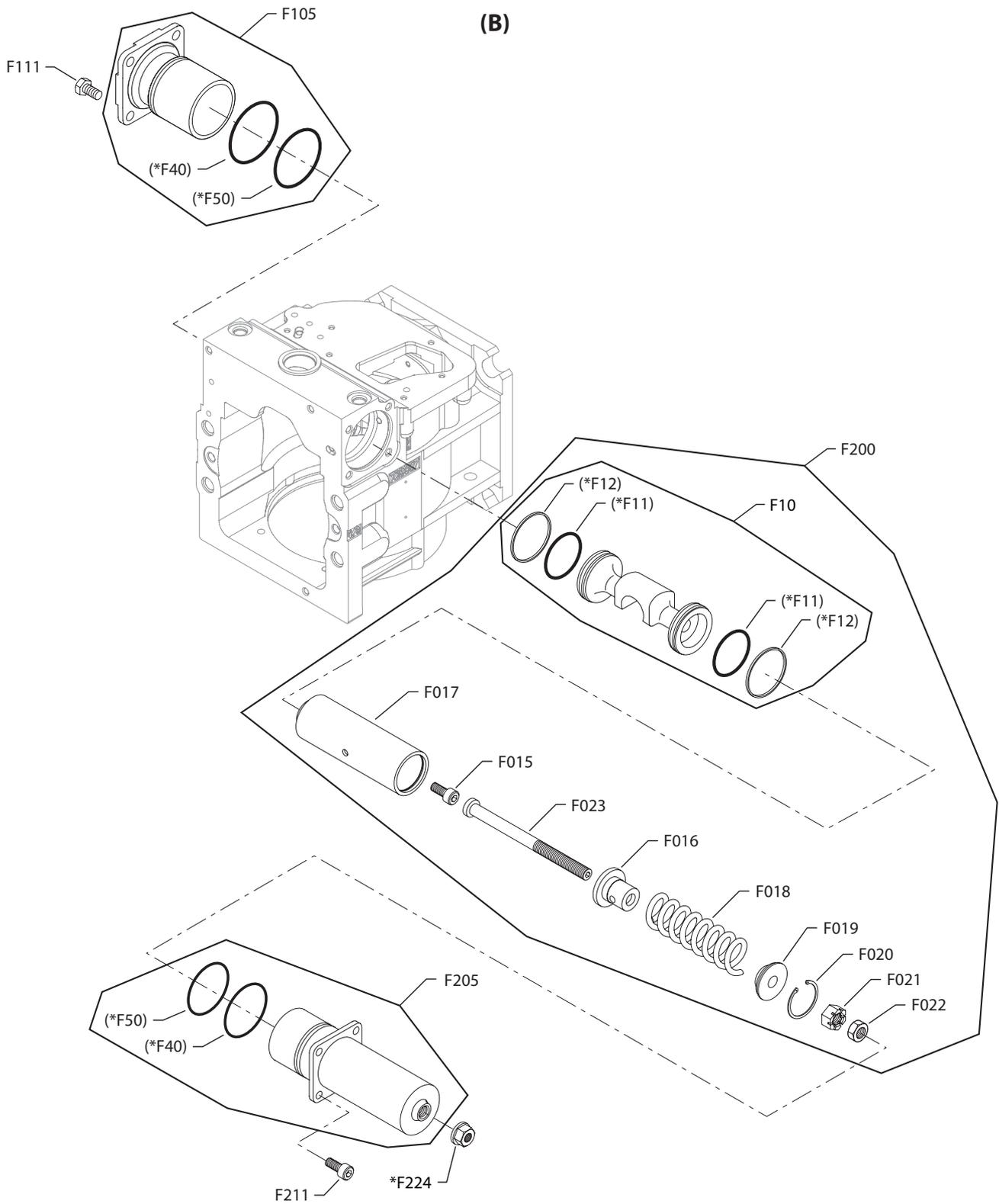

**Variable displacement pump**
**Displacement limitation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
7	F10	98-14		11046631	Servo piston assembly	1
	F015	98-14		346031	Screw	1
	F016	98-14		507096	Spring guide	1
	F017	98-14		345967	Spring housing	1
	F018	98-14		351742	Spring	1
	F019	98-14		507094	Spring guide	1
	F020	98-14		505826	Retaining ring	1
	F021	98-14		507045	Castle nut	1
	F022	98-14		346015	Hex nut	1
	F023	98-14		11140221	Adjust screw	1
	F100	98-14		515836	Servo assembly	1
	F105	98-14		11060161	Servo cylinder assembly, NFPE	1
	F111	98-14		746651	Screw	4
	F124	98-14		066159	Seal nut, M12	1
	F205	98-14		11060158	Servo cylinder assembly, non-adjustable	1
	F211	98-14		378083 (9007210-0804)	Screw	4



Variable displacement pump

(B)



E100 894E

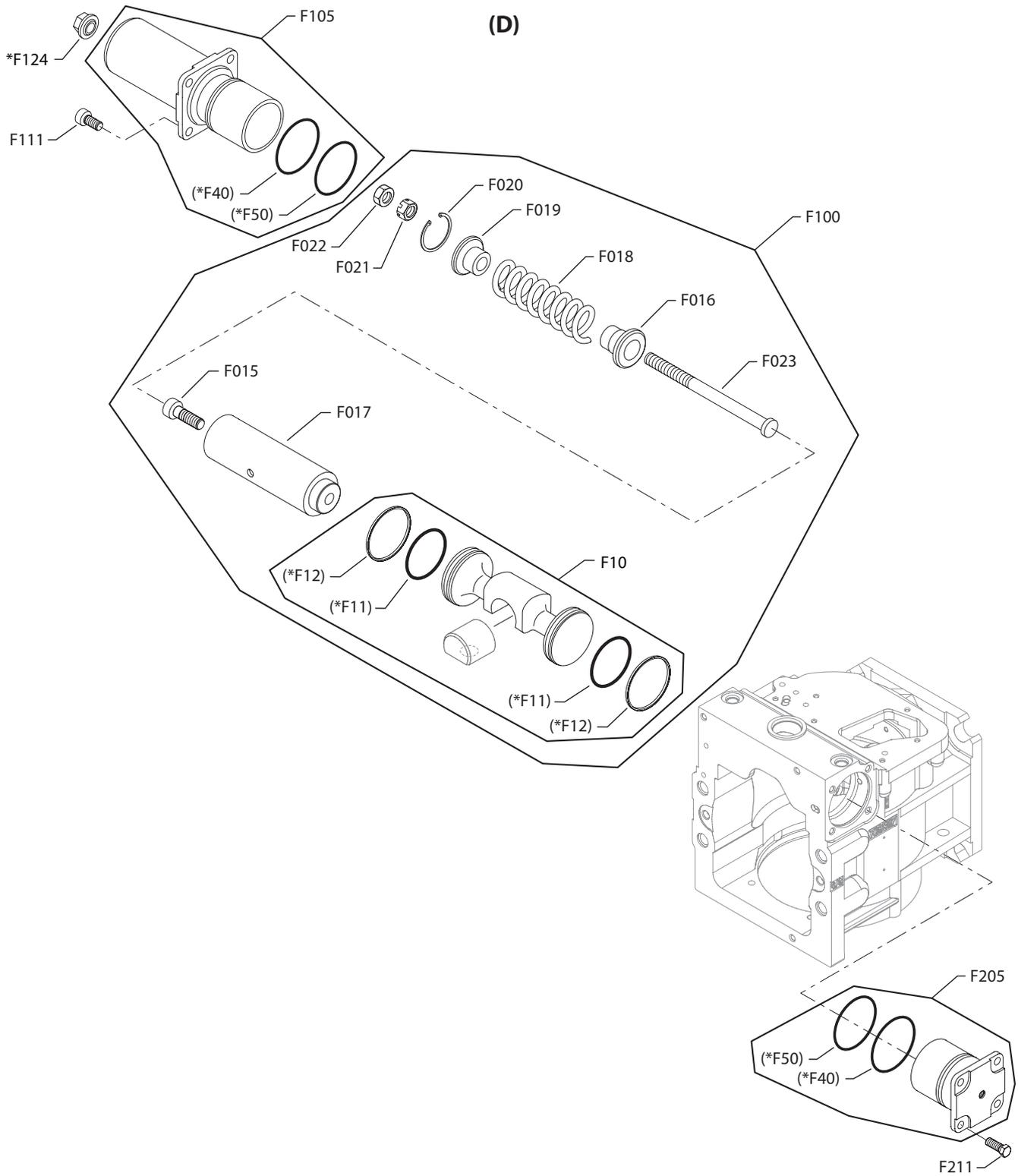
\* = included in overhaul seal kit  
 () = not available individually


**Variable displacement pump**
**Displacement limitation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
B	F10	98-14		11046631	Servo piston assembly	1
	F015	98-14		346031	Screw	1
	F016	98-14		507096	Spring guide	1
	F017	98-14		345967	Spring housing	1
	F018	98-14		351742	Spring	1
	F019	98-14		507094	Spring guide	1
	F020	98-14		505826	Retaining ring	1
	F021	98-14		507045	Castle nut	1
	F022	98-14		346015	Hex nut	1
	F023	98-14		11140221	Adjust screw	1
	F105	98-14		11060158	Servo cylinder assembly, non-adjustable	1
	F111	98-14		378083 (9007210-0804)	Screw	4
	F200	98-14		515836	Servo assembly	1
	F205	98-14		11060161	Servo cylinder assembly, NFPE	1
	F211	98-14		746651	Screw	4
	F224	98-14		066159	Seal nut, M12	1



Variable displacement pump



E100 893E

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



Variable displacement pump

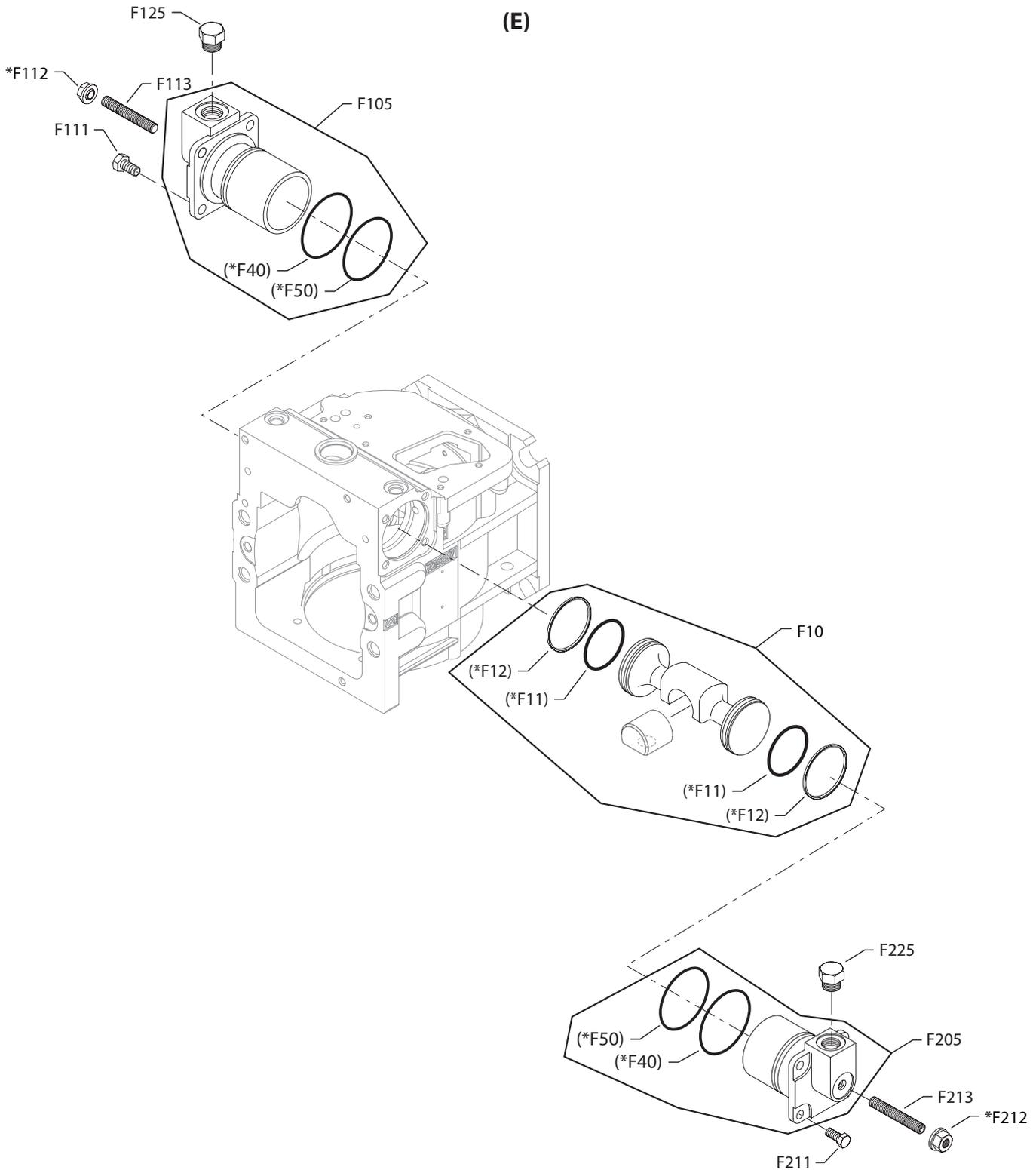
Displacement limitation

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
D	F10	98-18		11046631	Servo piston assembly	1
	F015	98-18		346031	Screw	1
	F016	98-18		507096	Spring guide	1
	F017	98-18		345967	Spring housing	1
	F018	98-18		351742	Spring	1
	F019	98-18		507094	Spring guide	1
	F020	98-18		505826	Retaining ring	1
	F021	98-18		507045	Castle nut	1
	F022	98-18		346015	Hex nut	1
	F023	98-18		11140221	Adjust screw	1
	F100	98-18		515836	Servo assembly	1
	F105	98-18		11060161	Servo cylinder assembly, NFPE	1
	F111	98-18		746651	Screw	4
	F124	98-18		066159	Seal nut, M12	1
	F205	89-41		11060160	Servo cylinder assembly, adjustable	1
	F211	89-41		378083 (9007210-0804)	Screw	4
	F212	98-18		042432	Seal nut, M10	1
	F213	98-18		11085626	Set screw M10 x50	1



Variable displacement pump

(E)



E100 895E

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

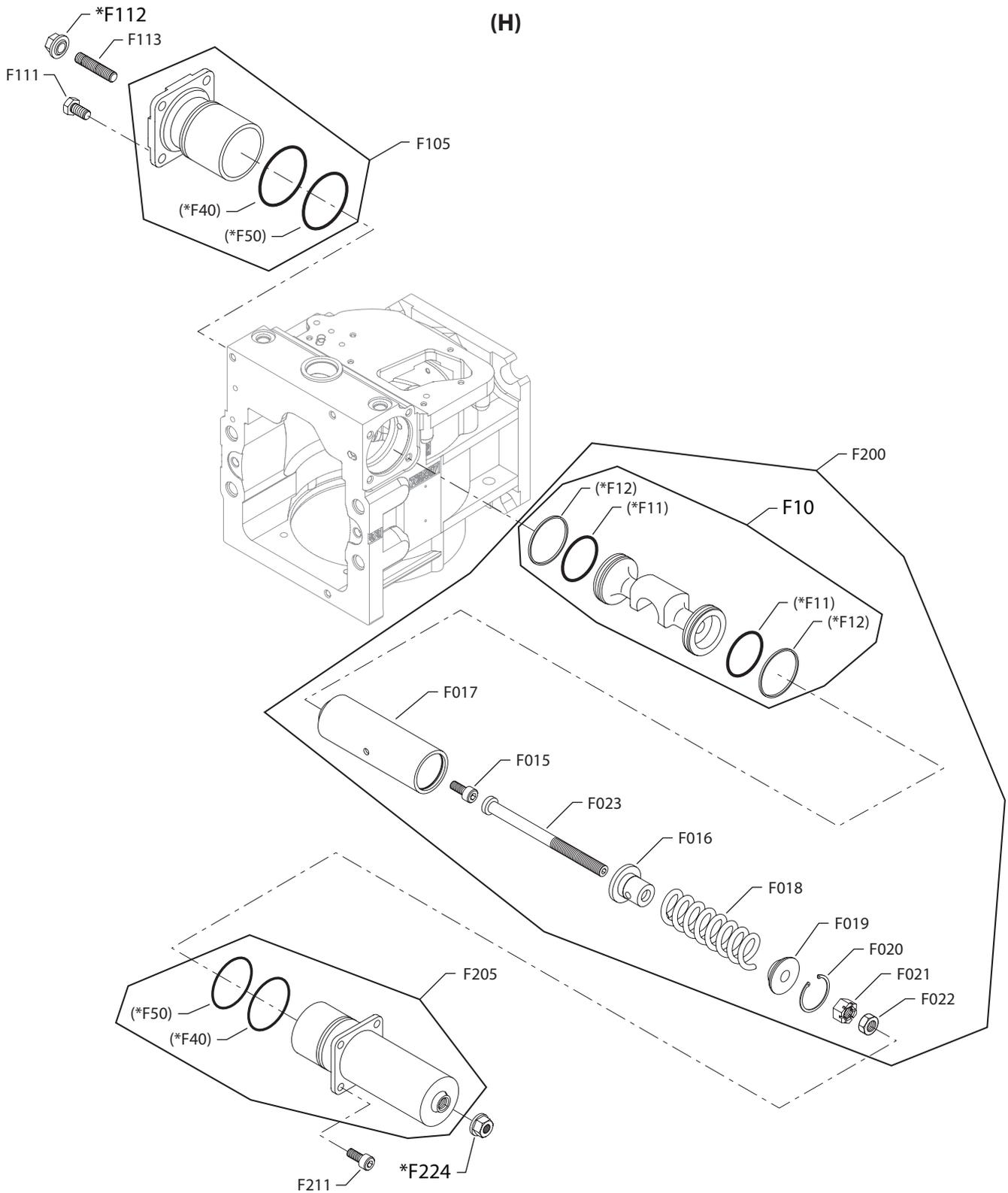

**Variable displacement pump**
**Displacement limitation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
E	F10	91-30		11046664	Servo piston assembly	1
	F105	91-30		11060182	Servo cylinder assembly, adjustable with gauge port	1
	F111	91-30		676189	Screw	4
	F112	91-30		076042 (9003509-0012)	Seal nut, M12	1
	F113	91-30		350090	Set screw, M12 x 70	1
	F125	91-30		731943	Plug assembly	1
	F205	91-30		11060182	Servo cylinder assembly, adjustable with gauge port	1
	F211	91-30		676189	Screw	4
	F212	91-30		076042 (9003509-0012)	Seal nut, M12	1
	F213	91-30		350090	Set screw, M12 x 70	1
	F225	91-30		731943	Plug assembly	1



Variable displacement pump

(H)



E101 820E

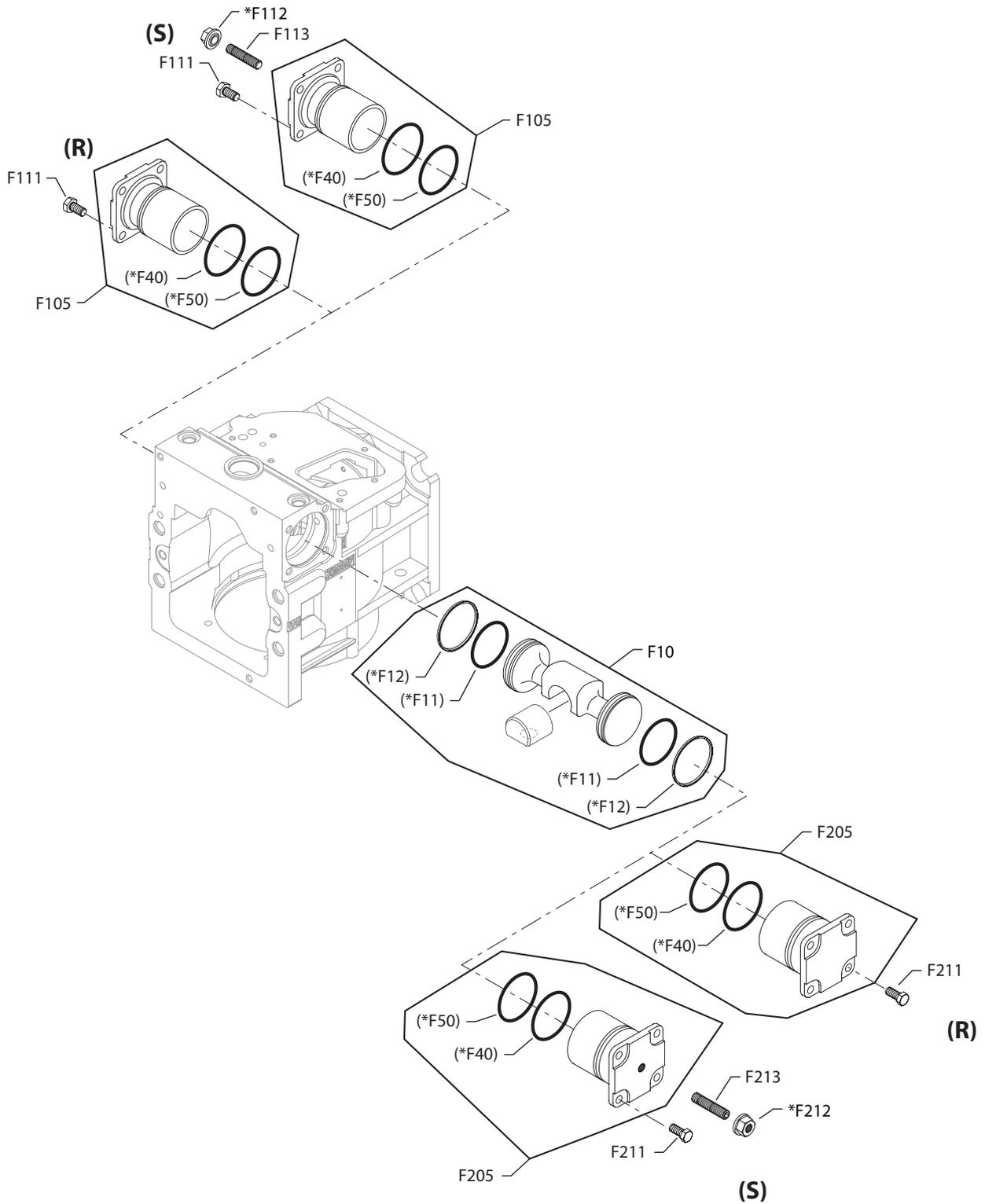
\* = included in overhaul seal kit  
 () = not available individually


**Variable displacement pump**
**Displacement limitation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
H	F10	98-18		11046631	Servo piston assembly	1
	F113	98-18		11085626	Set screw, M10 x50	1
	F015	98-18		346031	Screw	1
	F016	98-18		507096	Spring guide	1
	F017	98-18		345967	Spring housing	1
	F018	98-18		351742	Spring	1
	F019	98-18		507094	Spring guide	1
	F020	98-18		505826	Retaining ring	1
	F021	98-18		507045	Castle nut	1
	F022	98-18		346015	Hex nut	1
	F023	98-18		11140221	Adjust screw	1
	F105	98-18		11060160	Servo cylinder assembly	1
	F111	98-18		378083 (9007210-0804)	Screw	4
	F112	98-18		042432	Seal nut, M10	1
	F113	98-18		11085626	Set screw, M10 x50	1
	F200	98-18		515836	Servo assembly	1
	F205	98-18		11060161	Servo cylinder assembly, NFPE	1
	F211	98-18		746651	Screw	4
	F224	98-18		066159	Seal nut, M12	1



Variable displacement pump



E100 892E

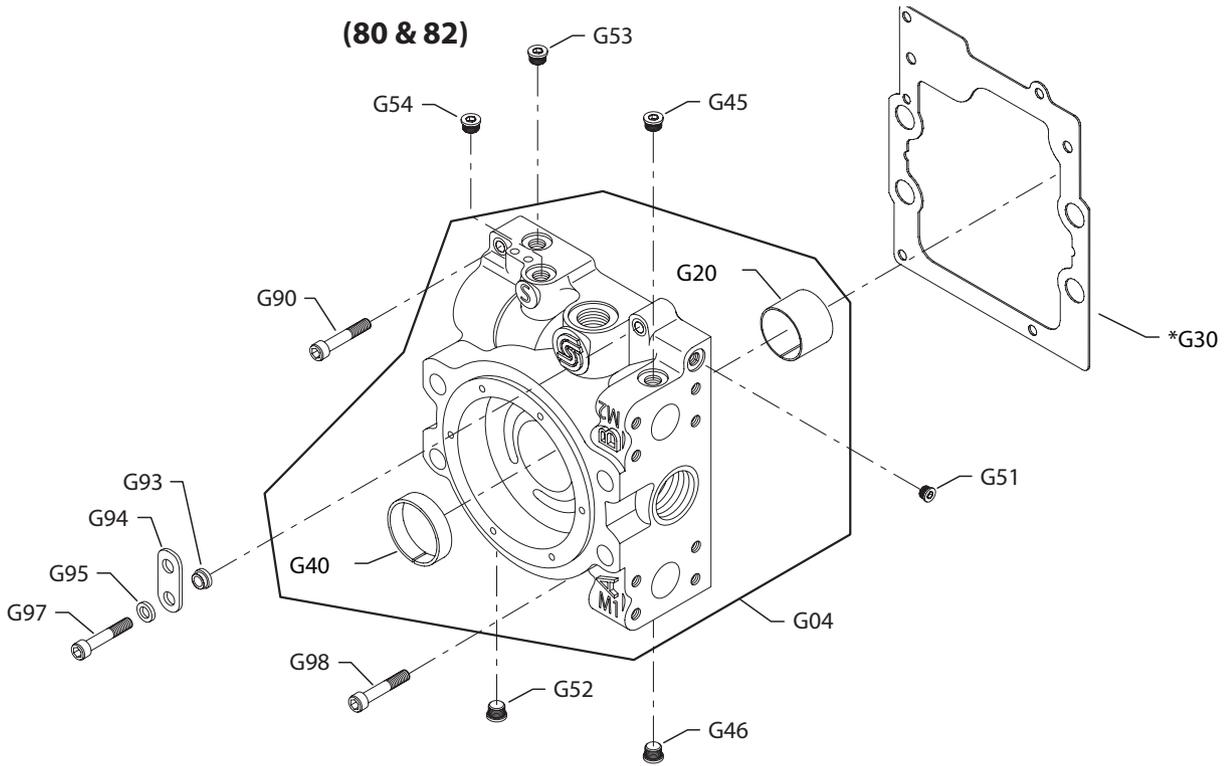
\* = included in overhaul seal kit  
 () = not available individually


**Variable displacement pump**
**Displacement limitation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
R	F10	91-30		11046630	Servo piston assembly	1
	F105	91-30		11060159	Servo cylinder assembly, non-adjustable, 110cc	1
	F111	91-30		378083 (9007210-0804)	Screw	4
	F205	91-30		11060159	Servo cylinder assembly, non-adjustable, 110cc	1
	F211	91-30		378083 (9007210-0804)	Screw	4
S	F10	05-37		11046630	Servo piston assembly	1
	F105	05-37		11060160	Servo cylinder assembly, adjustable	1
	F111	05-37		378083 (9007210-0804)	Screw	4
	F112	05-37		042432	Seal nut, M10	1
	F113	05-37		11002555	Set screw M10 x30	1
	F205	05-37		11060160	Servo cylinder assembly, adjustable	1
	F211	05-37		378083 (9007210-0804)	Screw	4
	F212	05-37		042432	Seal nut, M10	1
	F213	05-37		11002555	Set screw M10 x30	1



Variable displacement pump



E100 897 E

\* = included in overhaul seal kit



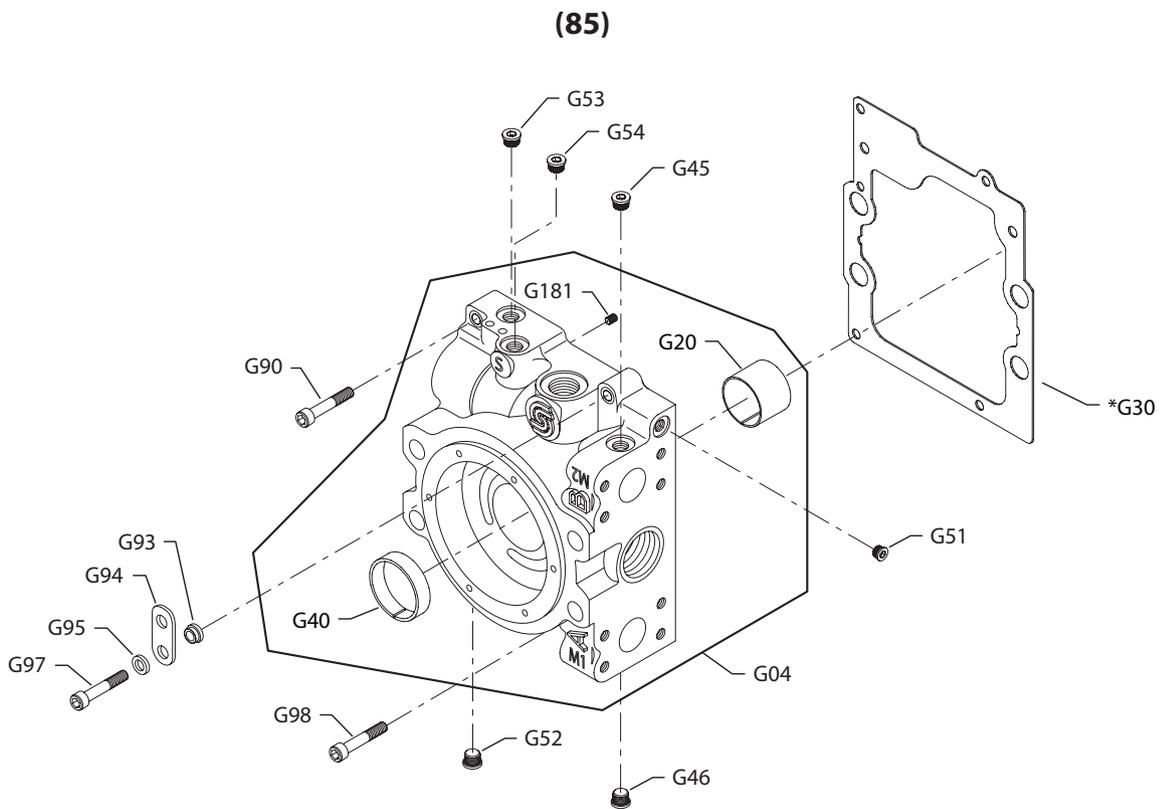
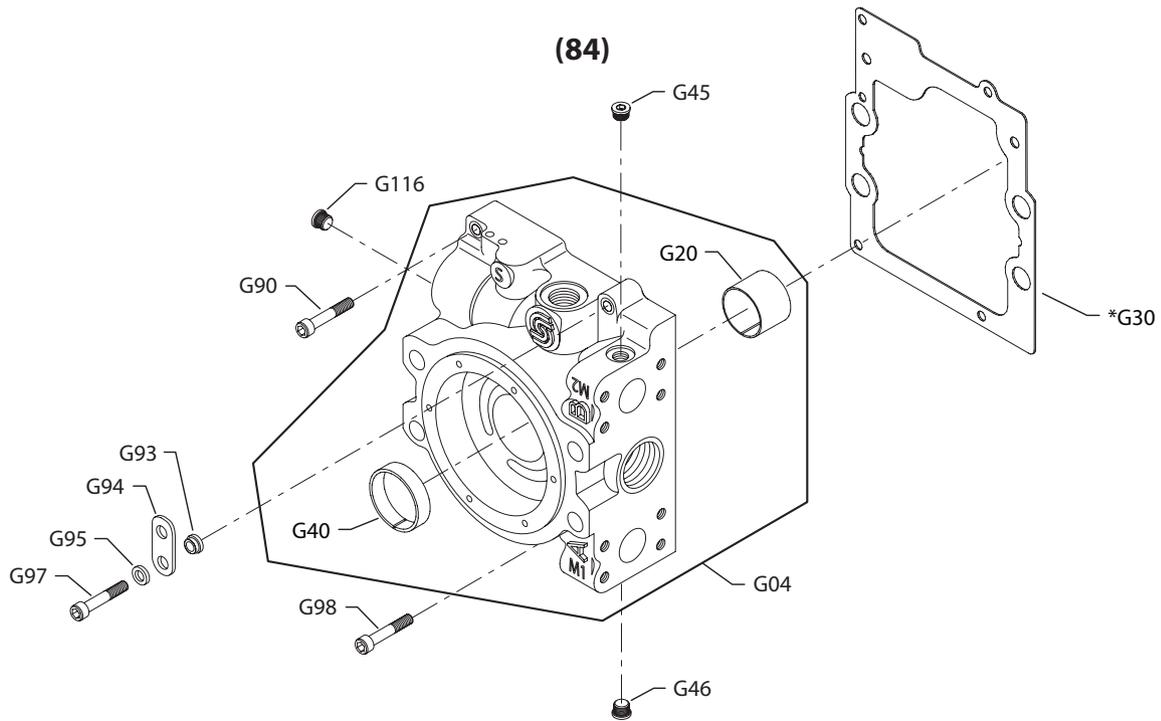
Variable displacement pump

End cap

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
80	G04	01-48		516600	End cap assembly, twin ports	1
	G20	89-41		303693	Journal bearing	1
	G30	89-41		730895	End cap gasket (SB-1992-003)	1
	G40	89-41		303651	Bushing	1
	G45	89-41		140644	Plug assembly	1
	G46	89-41		140644	Plug assembly	1
	G51	89-41		327007 (9005110-4400)	Plug assembly	1
	G52	89-41		140644	Plug assembly	1
	G53	89-41		140644	Plug assembly	1
	G54	89-41		140644	Plug assembly	1
	G90	01-48		713768 (9007314-0812)	Screw, M8 x 55	1
	G90	89-41	01-47	746644 (9007314-0810)	Screw, M8 x 45	1
	G93	89-41		713800 (8800564)	Spacer	1
	G94	89-41		8800565	Lifting bracket	1
	G95	89-41		502195	Washer	1
	G97	01-48		713768 (9007314-0812)	Screw, M8 x 55	1
	G97	89-41	01-47	748954 (9007314-0811)	Screw, M8 x 50	1
	G98	01-48		713768 (9007314-0812)	Screw, M8 x 55	1
	G98	89-41	01-47	746644 (9007314-0810)	Screw, M8 x 45	1
	82	G04	08-44		11054538	End cap assembly, twin metric ports
G20		08-44		303693	Journal bearing	1
G30		08-44		730895	End cap gasket (SB-1992-003)	1
G40		08-44		303651	Bushing	1
G45		08-44		140644	Plug assembly	1
G46		08-44		140644	Plug assembly	1
G51		08-44		327007 (9005110-4400)	Plug assembly	1
G52		08-44		140644	Plug assembly	1
G53		08-44		140644	Plug assembly	1
G54		08-44		140644	Plug assembly	1
G90		08-44		713768 (9007314-0812)	Screw, M8 x 55	1
G93		08-44		713800 (8800564)	Spacer	1
G94		08-44		8800565	Lifting bracket	1
G95		08-44		502195	Washer	1
G97		08-44		713768 (9007314-0812)	Screw, M8 x 55	1
G98		08-44		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump



E100 896 E

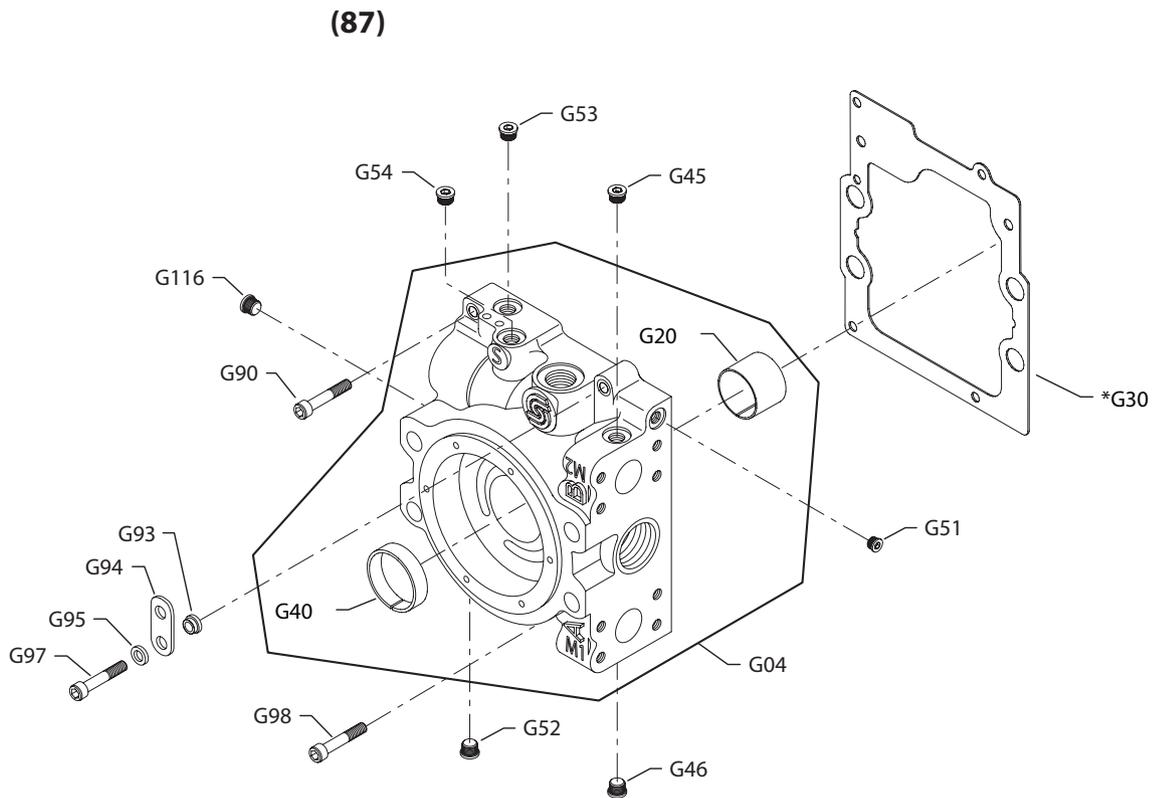
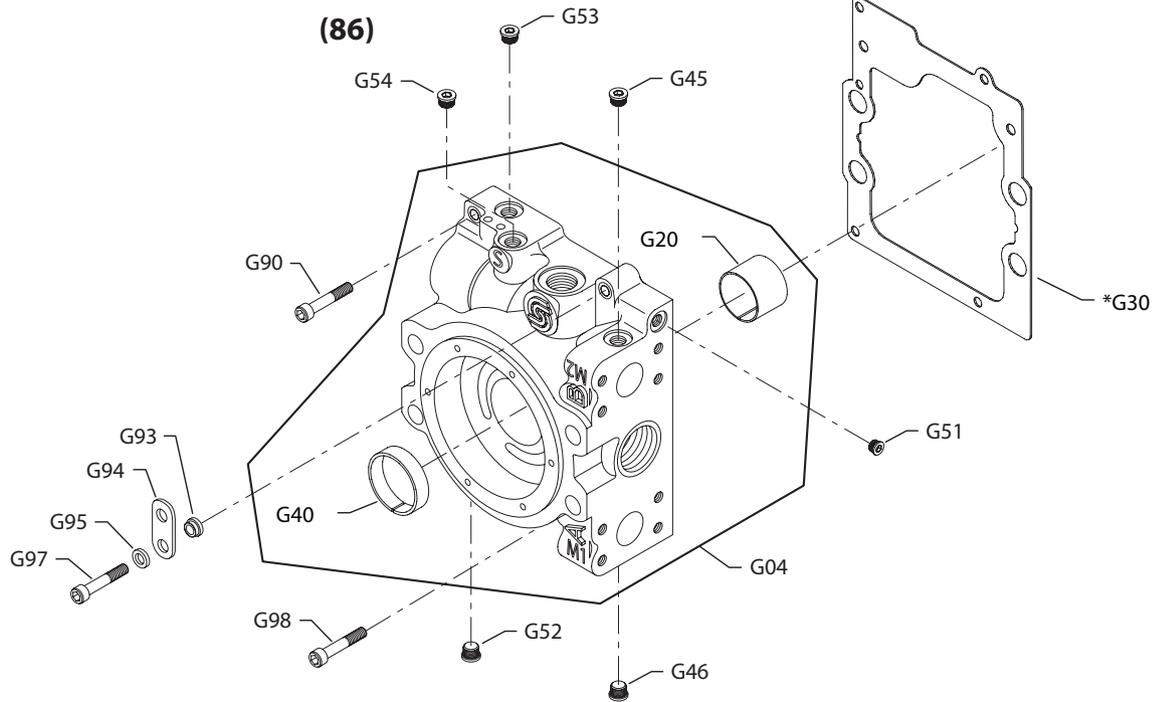
\* = included in overhaul seal kit


**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
84	G04	02-03		516603	End cap assembly, twin ports	1
	G20	94-48		303693	Journal bearing	1
	G30	94-48		730895	End cap gasket	1
	G40	94-48		303651	Bushing	1
	G45	94-48		140644	Plug assembly	1
	G46	94-48		140644	Plug assembly	1
	G90	02-03		713768 (9007314-0812)	Screw, M8 x 55	1
	G90	89-41	02-03	746644 (9007314-0810)	Screw, M8 x 45	1
	G93	94-48		713800 (8800564)	Spacer	1
	G94	94-48		8800565	Lifting bracket	1
	G95	94-48		502195	Washer	1
	G97	02-03		713768 (9007314-0812)	Screw, M8 x 55	1
	G97	89-41	02-03	748954 (9007314-0811)	Screw, M8 x 50	1
	G98	02-03		713768 (9007314-0812)	Screw, M8 x 55	1
	G98	89-41	02-03	746644 (9007314-0810)	Screw, M8 x 45	1
	G116	94-48		140644	Plug assembly	1
	85	G04	01-38		517973	End cap assembly, twin ports
G20		01-38		303693	Journal bearing	1
G30		01-38		730895	End cap gasket	1
G40		01-38		303651	Bushing	1
G45		01-38		140644	Plug assembly	1
G46		01-38		140644	Plug assembly	1
G51		01-38		327007 (9005110-4400)	Plug assembly	1
G52		01-38		140644	Plug assembly	1
G53		01-38		140644	Plug assembly	1
G54		01-38		140644	Plug assembly	1
G90		01-38		713768 (9007314-0812)	Screw, M8 x 55	1
G93		01-38		713800 (8800564)	Spacer	1
G94		01-38		8800565	Lifting bracket	1
G95		01-38		502195	Washer	1
G97		01-38		713768 (9007314-0812)	Screw, M8 x 55	1
G98		01-38		713768 (9007314-0812)	Screw, M8 x 55	1
G181		01-38		759423	Orifice plug, 2.5mm	1



Variable displacement pump



E101 826E

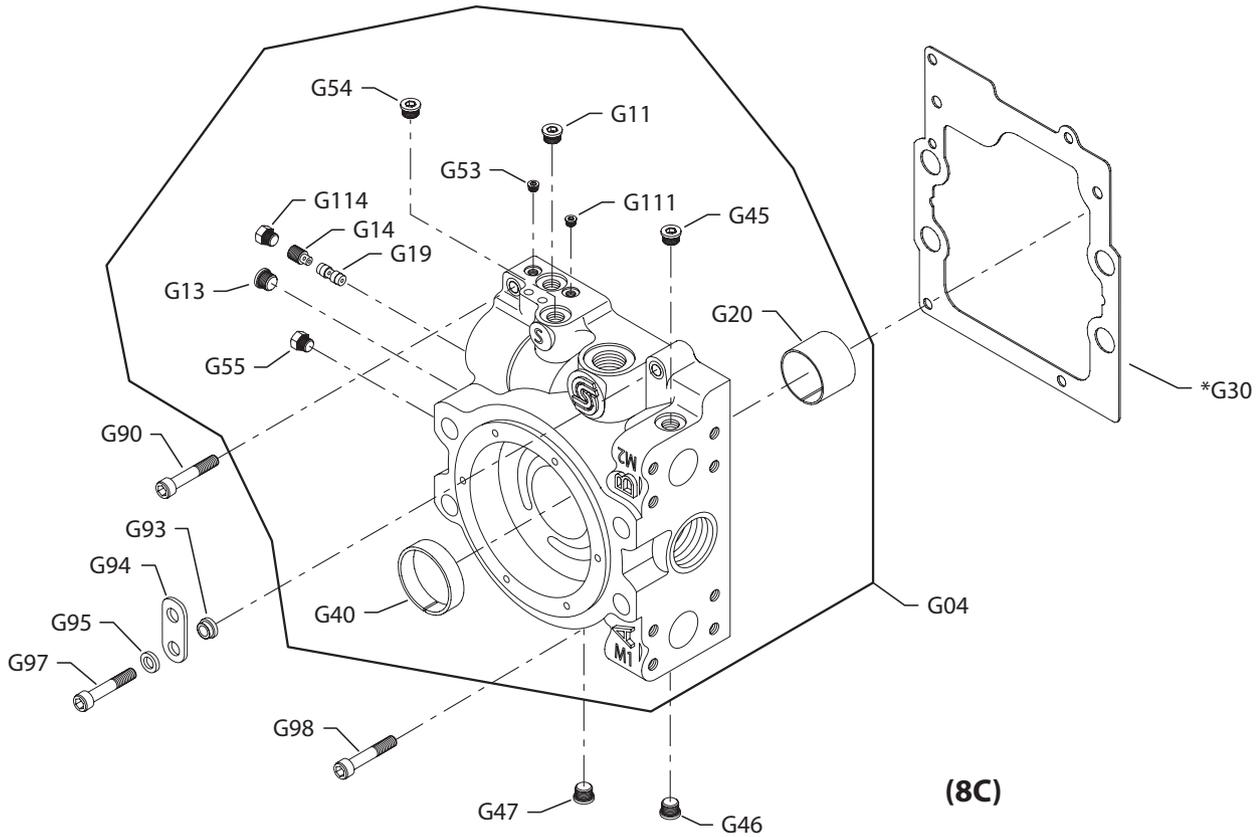
\* = included in overhaul seal kit


**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
86	G04	02-03	11-34	516602	End cap assembly, twin ports	1
	G20	93-35	11-34	303693	Journal bearing	1
	G30	93-35	11-34	730895	End cap gasket	1
	G40	93-35	11-34	303651	Bushing	1
	G45	93-35	11-34	140644	Plug assembly	1
	G46	93-35	11-34	140644	Plug assembly	1
	G51	93-35	11-34	327007 (9005110-4400)	Plug assembly	1
	G52	93-35	11-34	140644	Plug assembly	1
	G53	93-35	11-34	140644	Plug assembly	1
	G54	93-35	11-34	140644	Plug assembly	1
	G90	02-03	11-34	713768 (9007314-0812)	Screw, M8 x 55	1
	G90	93-35	02-02	746644 (9007314-0810)	Screw, M8 x 45	1
	G93	93-35	11-34	713800 (8800564)	Spacer	1
	G94	93-35	11-34	8800565	Lifting bracket	1
	G95	93-35	11-34	502195	Washer	1
	G97	02-03	11-34	713768 (9007314-0812)	Screw, M8 x 55	1
	G97	93-35	02-02	748954 (9007314-0811)	Screw, M8 x 50	1
	G98	02-03	11-34	713768 (9007314-0812)	Screw, M8 x 55	1
	G98	93-35	02-02	746644 (9007314-0810)	Screw, M8 x 45	1
	87	G04	01-47		516604	End cap assembly, twin ports
G20		92-51		303693	Journal bearing	1
G30		92-51		730895	End cap gasket	1
G40		92-51		303651	Bushing	1
G45		92-51		140644	Plug assembly	1
G46		92-51		140644	Plug assembly	1
G51		92-51		327007 (9005110-4400)	Plug assembly	1
G52		92-51		140644	Plug assembly	1
G53		92-51		140644	Plug assembly	1
G54		92-51		140644	Plug assembly	1
G90		01-47		713768 (9007314-0812)	Screw, M8 x 55	1
G90		92-51	01-46	746644 (9007314-0810)	Screw, M8 x 45	1
G93		92-51		713800 (8800564)	Spacer	1
G94		92-51		8800565	Lifting bracket	1
G95		92-51		502195	Washer	1
G97		01-47		713768 (9007314-0812)	Screw, M8 x 55	1
G97		92-51	01-46	748954 (9007314-0811)	Screw, M8 x 50	1
G98		01-47		713768 (9007314-0812)	Screw, M8 x 55	1
G98		92-51	01-46	746644 (9007314-0810)	Screw, M8 x 45	1
G116		92-51		140644	Plug assembly	1



Variable displacement pump



\* = included in overhaul seal kit

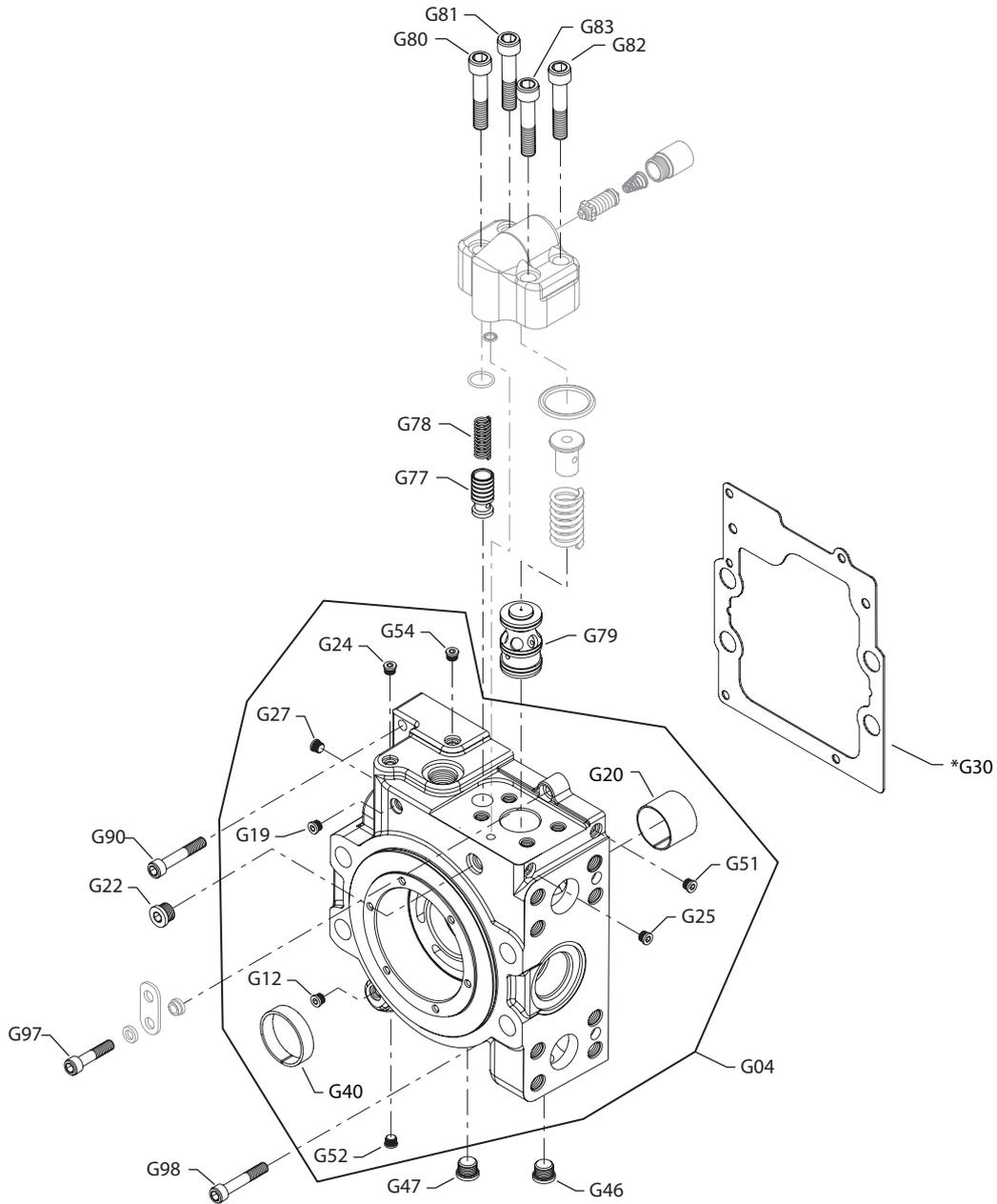

**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8C	G04	01-50		516601	End cap assembly, twin ports	1
	G11	91-26		140644	Plug assembly	1
	G13	91-26		327007 (9005110-4400)	Plug assembly	1
	G14	91-26		765750	Orifice plug	1
	G19	91-26		759415	Spool	1
	G20	91-26		303693	Journal bearing	1
	G30	91-26		730895	End cap gasket	1
	G40	91-26		303651	Journal bearing	1
	G45	91-26		140644	Plug assembly	1
	G46	91-26		140644	Plug assembly	1
	G47	91-26		140644	Plug assembly	1
	G53	91-26		11040532	Plug assembly	1
	G54	91-26		140644	Plug assembly	1
	G55	91-26		9005100-3700	Plug assembly	1
	G90	01-50		713768 (9007314-0812)	Screw, M8 x 55	1
	G90	91-26	01-49	746644 (9007314-0810)	Screw, M8 x 45	1
	G93	91-26		713800 (8800564)	Spacer	1
	G94	91-26		8800565	Lifting bracket	1
	G95	91-26		502195	Washer	1
	G97	01-50		713768 (9007314-0812)	Screw, M8 x 55	1
	G97	92-51	01-49	748954 (9007314-0811)	Screw, M8 x 50	1
	G98	01-50		713768 (9007314-0812)	Screw, M8 x 55	1
	G98	91-26	01-49	746644 (9007314-0810)	Screw, M8 x 45	1
	G111	91-26		11040532	Plug assembly	1
	G114	91-26		9005100-3700	Plug assembly	1



Variable displacement pump

(8E)



\* = included in overhaul seal kit

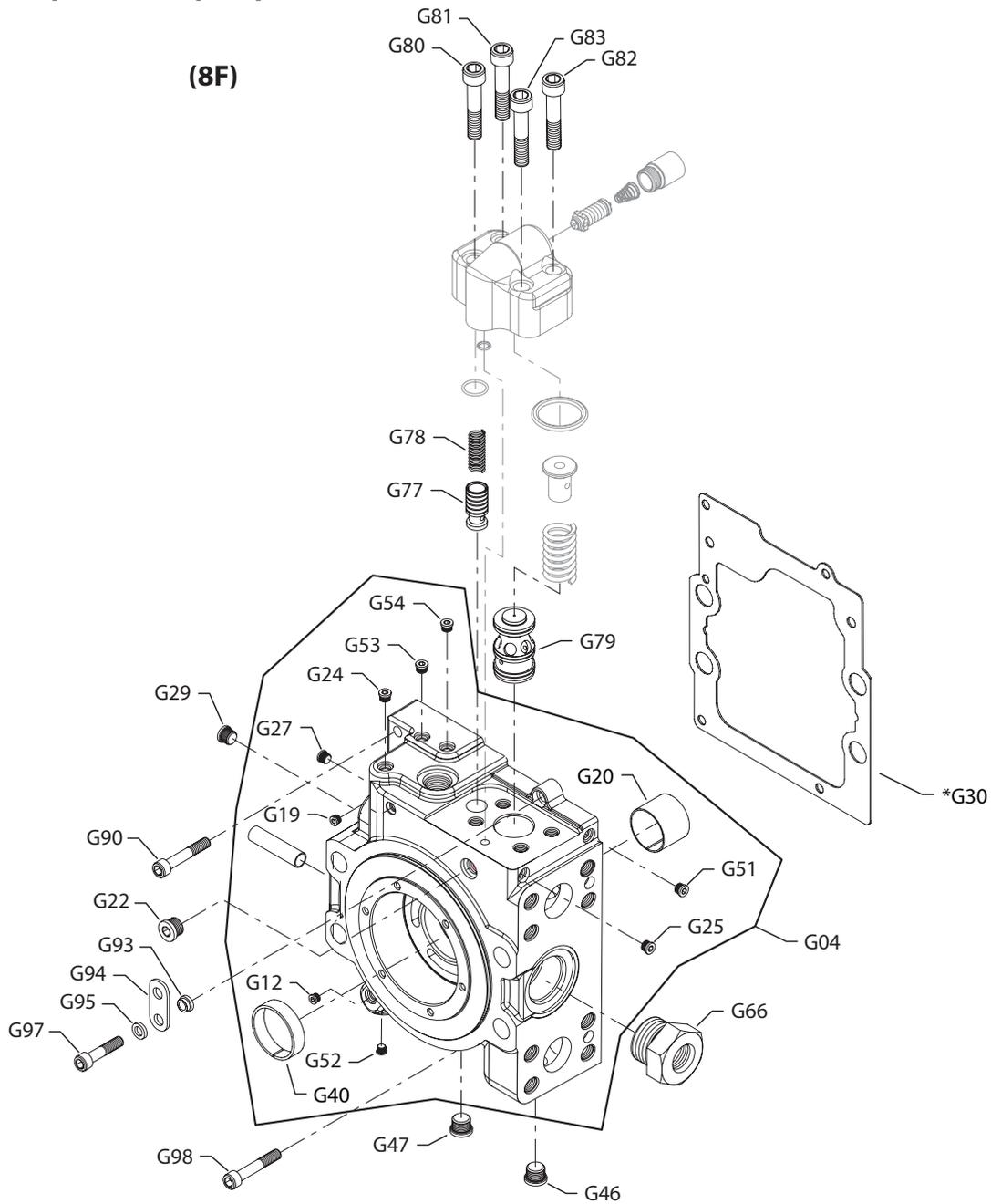

**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8E	G04	02-15		11093592	End cap assembly	1
	G12	02-15		11040532	Plug assembly	1
	G19	02-15		11040532	Plug assembly	1
	G20	02-15		303693	Journal bearing	1
	G22	02-15		140644	Plug assembly	1
	G24	02-15		11040532	Plug assembly	1
	G25	02-15		11040532	Plug assembly	1
	G27	02-15		11040532	Plug assembly	1
	G30	02-15		730895	End cap gasket	1
	G40	02-15		664771	Bushing	1
	G46	02-15		140644	Plug assembly	1
	G47	02-15		140644	Plug assembly	1
	G51	02-15		11040532	Plug assembly	1
	G52	02-15		11040532	Plug assembly	1
	G54	02-15		11040532	Plug assembly	1
	G77	02-15		517830	Piston	1
	G78	02-15		517832	Spring	1
	G79	02-15		517827	Piston	1
	G80	02-15		504681	Screw, M12 x 55	1
	G81	02-15		504681	Screw, M12 x 55	1
	G82	02-15		504681	Screw, M12 x 55	1
	G83	02-15		504681	Screw, M12 x 55	1
	G90	02-15		713768 (9007314-0812)	Screw, M8 x 55	1
	G93	02-15		713800 (8800564)	Spacer	1
	G94	02-15		8800565	Lifting bracket	1
	G95	02-15		502195	Washer	1
	G97	02-15		506969	Screw, M8 x 25	1
	G98	02-15		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump

(8F)



E100 901 E

\* = included in overhaul seal kit

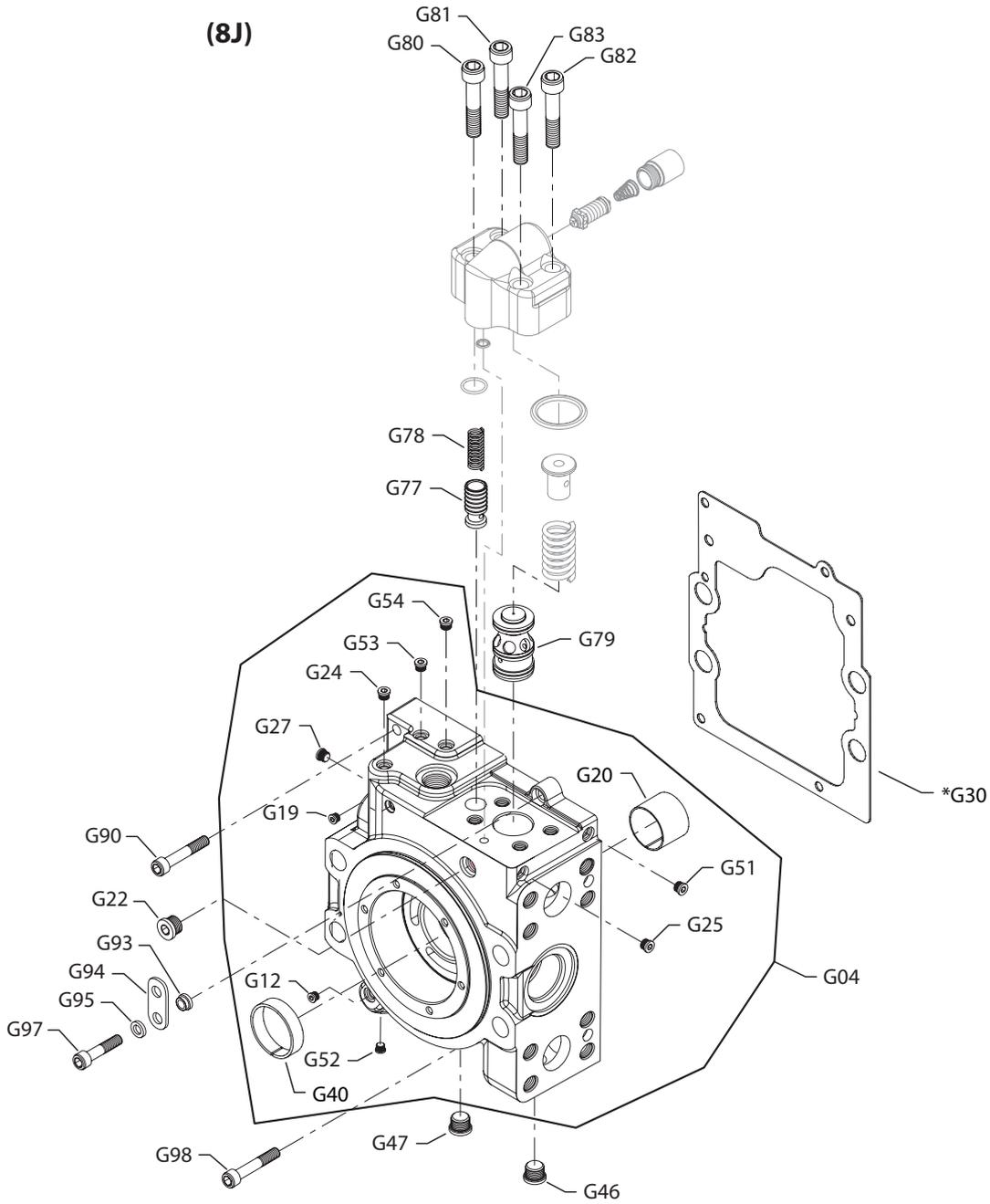

**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8F	G04	02-15		11093576	End cap assembly	1
	G12	02-15		11040532	Plug assembly	1
	G19	02-15		11040532	Plug assembly	1
	G20	02-15		303693	Journal bearing	1
	G22	02-15		140644	Plug assembly	1
	G24	02-15		11040532	Plug assembly	1
	G25	02-15		11040532	Plug assembly	1
	G27	02-15		11040532	Plug assembly	1
	G29	02-15		140644	Plug assembly	1
	G30	02-15		730895	End cap gasket	1
	G40	02-15		664771	Bushing	1
	G46	02-15		140644	Plug assembly	1
	G47	02-15		140644	Plug assembly	1
	G51	02-15		11040532	Plug assembly	1
	G52	02-15		11040532	Plug assembly	1
	G53	02-15		11040532	Plug assembly	1
	G54	02-15		11040532	Plug assembly	1
	G66	02-15		521318	Adapter plug assembly	1
	G77	02-15		517830	Piston	1
	G78	02-15		517832	Spring	1
	G79	02-15		517827	Piston	1
	G80	02-15		504681	Screw, M12 x 55	1
	G81	02-15		504681	Screw, M12 x 55	1
	G82	02-15		504681	Screw, M12 x 55	1
	G83	02-15		504681	Screw, M12 x 55	1
	G90	02-15		713768 (9007314-0812)	Screw, M8 x 55	1
	G93	02-15		713800 (8800564)	Spacer	1
	G94	02-15		8800565	Lifting bracket	1
	G95	02-15		502195	Washer	1
	G97	02-15		506969	Screw, M8 x 25	1
	G98	02-15		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump

(8J)



E100 902E

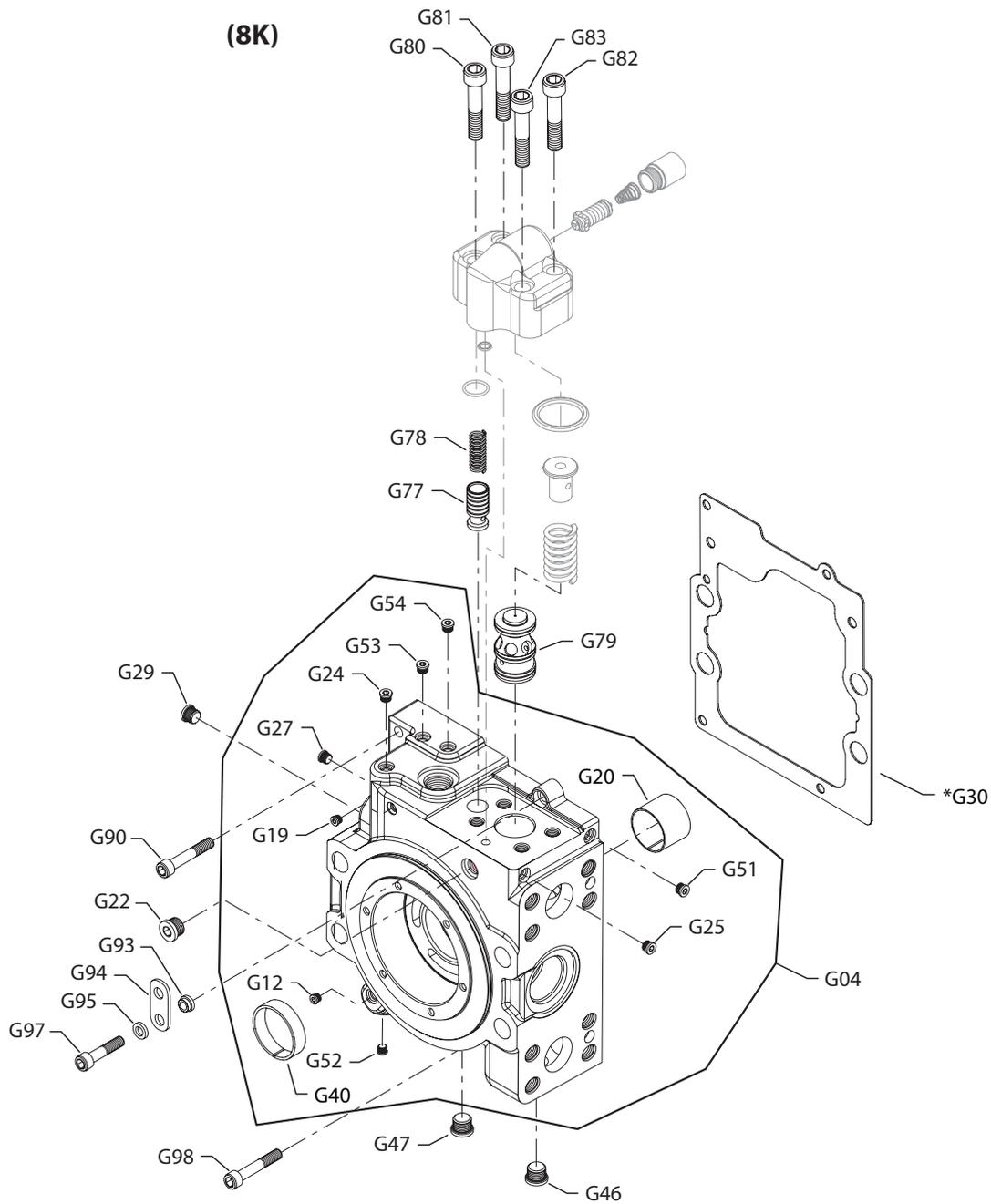
\* = included in overhaul seal kit


**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8J	G04	06-28		11093596	End cap assembly	1
	G12	06-28		11040532	Plug assembly	1
	G19	06-28		11040532	Plug assembly	1
	G20	06-28		303693	Journal bearing	1
	G22	06-28		140644	Plug assembly	1
	G24	06-28		11040532	Plug assembly	1
	G25	06-28		11040532	Plug assembly	1
	G27	06-28		11040532	Plug assembly	1
	G30	06-28		730895	End cap gasket	1
	G40	06-28		664771	Bushing	1
	G46	06-28		140644	Plug assembly	1
	G47	06-28		140644	Plug assembly	1
	G51	06-28		11040532	Plug assembly	1
	G52	06-28		11040532	Plug assembly	1
	G53	06-28		11040532	Plug assembly	1
	G54	06-28		11040532	Plug assembly	1
	G77	06-28		517830	Piston	1
	G78	06-28		517832	Spring	1
	G79	06-28		517827	Piston	1
	G80	06-28		504681	Screw, M12 x 55	1
	G81	06-28		504681	Screw, M12 x 55	1
	G82	06-28		504681	Screw, M12 x 55	1
	G83	06-28		504681	Screw, M12 x 55	1
	G90	06-28		713768 (9007314-0812)	Screw, M8 x 55	1
	G93	06-28		713800 (8800564)	Spacer	1
	G94	06-28		8800565	Lifting bracket	1
	G95	06-28		502195	Washer	1
	G97	06-28		506969	Screw, M8 x 25	1
	G98	06-28		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump



E101 827E

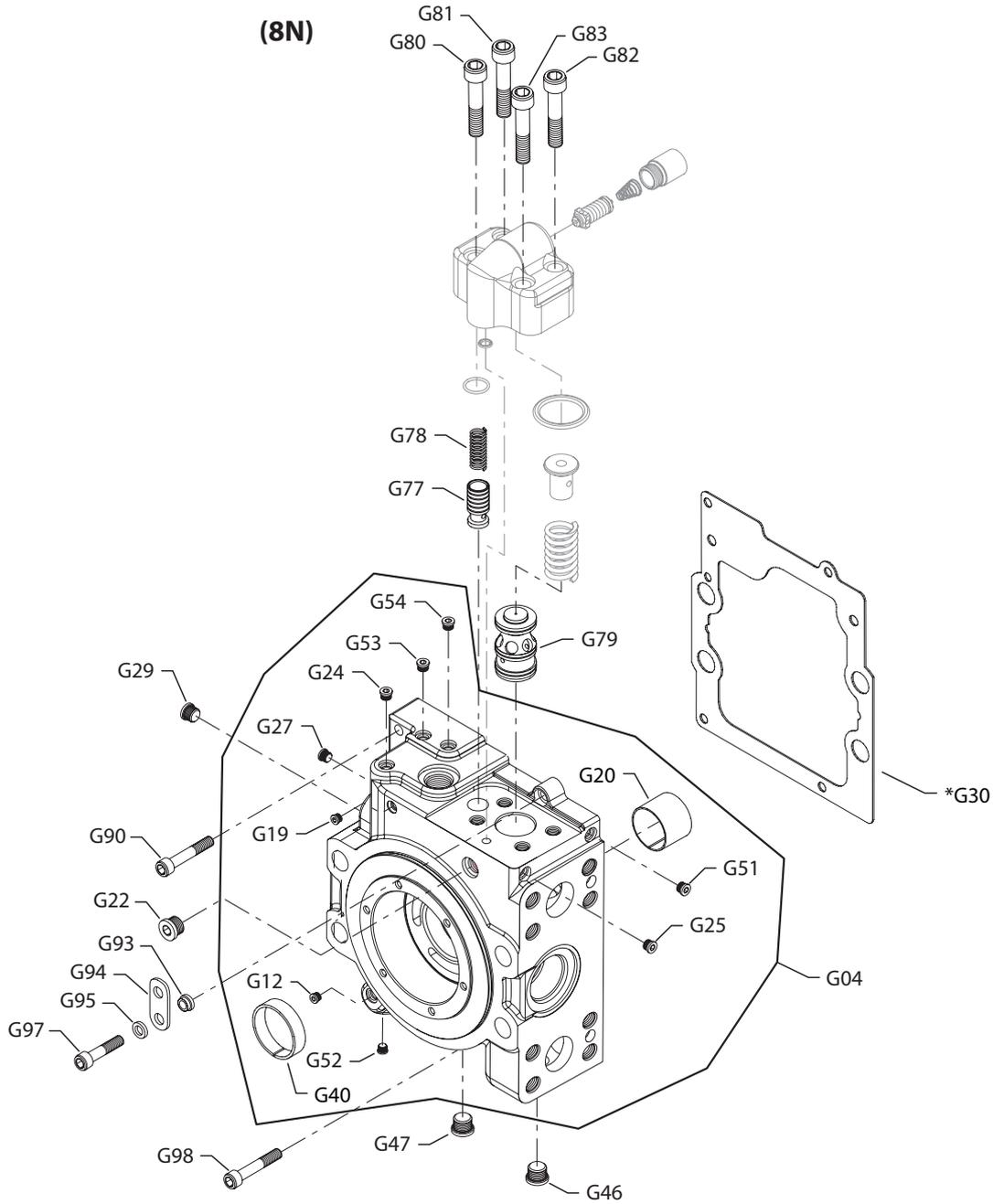
\* = included in overhaul seal kit


**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8K	G04	07-45		11093575	End cap assembly	1
	G12	07-45		11040532	Plug assembly	1
	G19	07-45		11040532	Plug assembly	1
	G20	07-45		303693	Journal bearing	1
	G22	07-45		140644	Plug assembly	1
	G24	07-45		11040532	Plug assembly	1
	G25	07-45		11040532	Plug assembly	1
	G27	07-45		11040532	Plug assembly	1
	G29	07-45		140644	Plug assembly	1
	G30	07-45		730895	End cap gasket	1
	G40	07-45		664771	Bushing	1
	G46	07-45		140644	Plug assembly	1
	G47	07-45		140644	Plug assembly	1
	G51	07-45		11040532	Plug assembly	1
	G52	07-45		11040532	Plug assembly	1
	G53	07-45		11040532	Plug assembly	1
	G54	07-45		11040532	Plug assembly	1
	G77	07-45		517830	Piston	1
	G78	07-45		517832	Spring	1
	G79	07-45		517827	Piston	1
	G80	07-45		504681	Screw, M12 x 55	1
	G81	07-45		504681	Screw, M12 x 55	1
	G82	07-45		504681	Screw, M12 x 55	1
	G83	07-45		504681	Screw, M12 x 55	1
	G90	07-45		713768 (9007314-0812)	Screw, M8 x 55	1
	G93	07-45		713800 (8800564)	Spacer	1
	G94	07-45		8800565	Lifting bracket	1
	G95	07-45		502195	Washer	1
	G97	07-45		506969	Screw, M8 x 25	1
	G98	07-45		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump



E101 827E

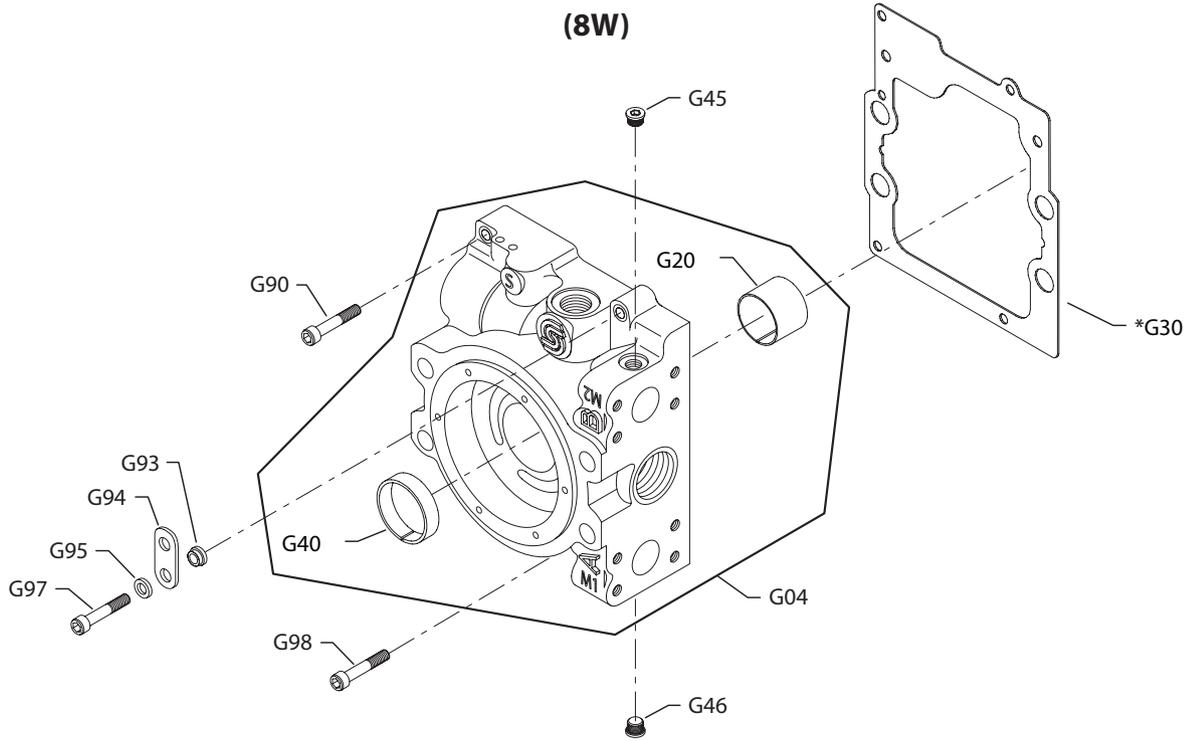
\* = included in overhaul seal kit


**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8N	G04	10-42		11093806	End cap assembly	1
	G12	10-42		11040532	Plug assembly	1
	G19	10-42		11040532	Plug assembly	1
	G20	10-42		303693	Journal bearing	1
	G22	10-42		140644	Plug assembly	1
	G24	10-42		11040532	Plug assembly	1
	G25	10-42		11040532	Plug assembly	1
	G27	10-42		11040532	Plug assembly	1
	G29	10-42		140644	Plug assembly	1
	G30	10-42		730895	End cap gasket	1
	G40	10-42		664771	Bushing	1
	G46	10-42		140644	Plug assembly	1
	G47	10-42		140644	Plug assembly	1
	G51	10-42		11040532	Plug assembly	1
	G52	10-42		11040532	Plug assembly	1
	G53	10-42		11040532	Plug assembly	1
	G54	10-42		11040532	Plug assembly	1
	G77	10-42		517830	Piston	1
	G78	10-42		517832	Spring	1
	G79	10-42		517827	Piston	1
	G80	10-42		504681	Screw, M12 x 55	1
	G81	10-42		504681	Screw, M12 x 55	1
	G82	10-42		504681	Screw, M12 x 55	1
	G83	10-42		504681	Screw, M12 x 55	1
	G90	10-42		713768 (9007314-0812)	Screw, M8 x 55	1
	G93	10-42		713800 (8800564)	Spacer	1
	G94	10-42		8800565	Lifting bracket	1
	G95	10-42		502195	Washer	1
	G97	10-42		506969	Screw, M8 x 25	1
	G98	10-42		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump



\* = included in overhaul seal kit

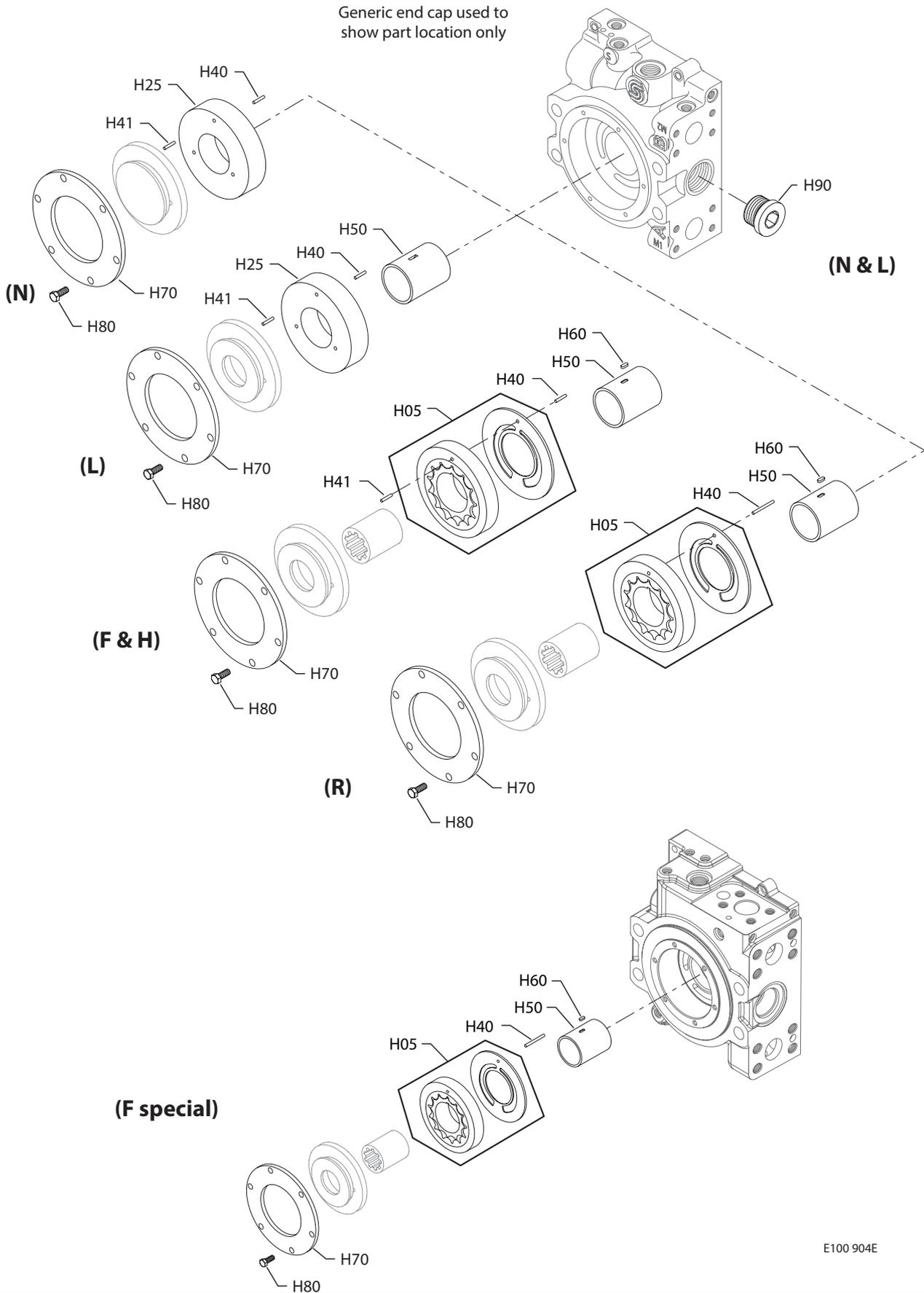

**Variable displacement pump**
**End cap**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
8W	G04	02-25		518631	End cap assembly, twin ports	1
	G20	02-25		303693	Journal bearing	1
	G30	02-25		730895	End cap gasket	1
	G40	02-25		303651	Bushing	1
	G45	02-25		140644	Plug assembly	1
	G46	02-25		140644	Plug assembly	1
	G90	02-25		713768 (9007314-0812)	Screw, M8 x 55	1
	G93	02-25		713800 (8800564)	Spacer	1
	G94	02-25		8800565	Lifting bracket	1
	G95	02-25		502195	Washer	1
	G97	02-25		713768 (9007314-0812)	Screw, M8 x 55	1
	G98	02-25		713768 (9007314-0812)	Screw, M8 x 55	1



Variable displacement pump

Generic end cap used to show part location only




**Variable displacement pump**
**Charging system**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
F	H05	04-49		8200240	Charge pump set, 26 cc	1
(special*)	H40	04-49		9004800-1224	Pin	1
	H50	04-49		8801178	Charge pump shaft	1
	H60	04-49		9003310-1208	Key	1
	H70	04-49		516761	Retaining plate	1
	H80	04-49		648451	Screw	6

\* Used with 8E, 8F, 8J, 8K or 8N end cap option only.

F	H05	93-34		501405	Charge pump set, 26 cc (SB-1994-025)	1
	H40	89-41		11152774	Pin	1
	H41	89-41		11152774	Pin	1
	H50	93-34		11138379	Charge pump shaft (SB-1994-025)	1
	H60	89-41		734608	Key	1
	H70	89-41		509361	Retaining plate	1
	H80	89-41		378083 (9007210-0804)	Screw	6

H	H05	93-34		501406	Charge pump, set 34 cc	1
	H40	89-41		11152774	Pin	1
	H41	89-41		11152774	Pin	1
	H50	93-34		11138379	Charge pump shaft (SB-1994-025)	1
	H60	89-41		734608	Key	1
	H70	89-41		509361	Retaining plate	1
	H80	89-41		378083 (9007210-0804)	Screw	6

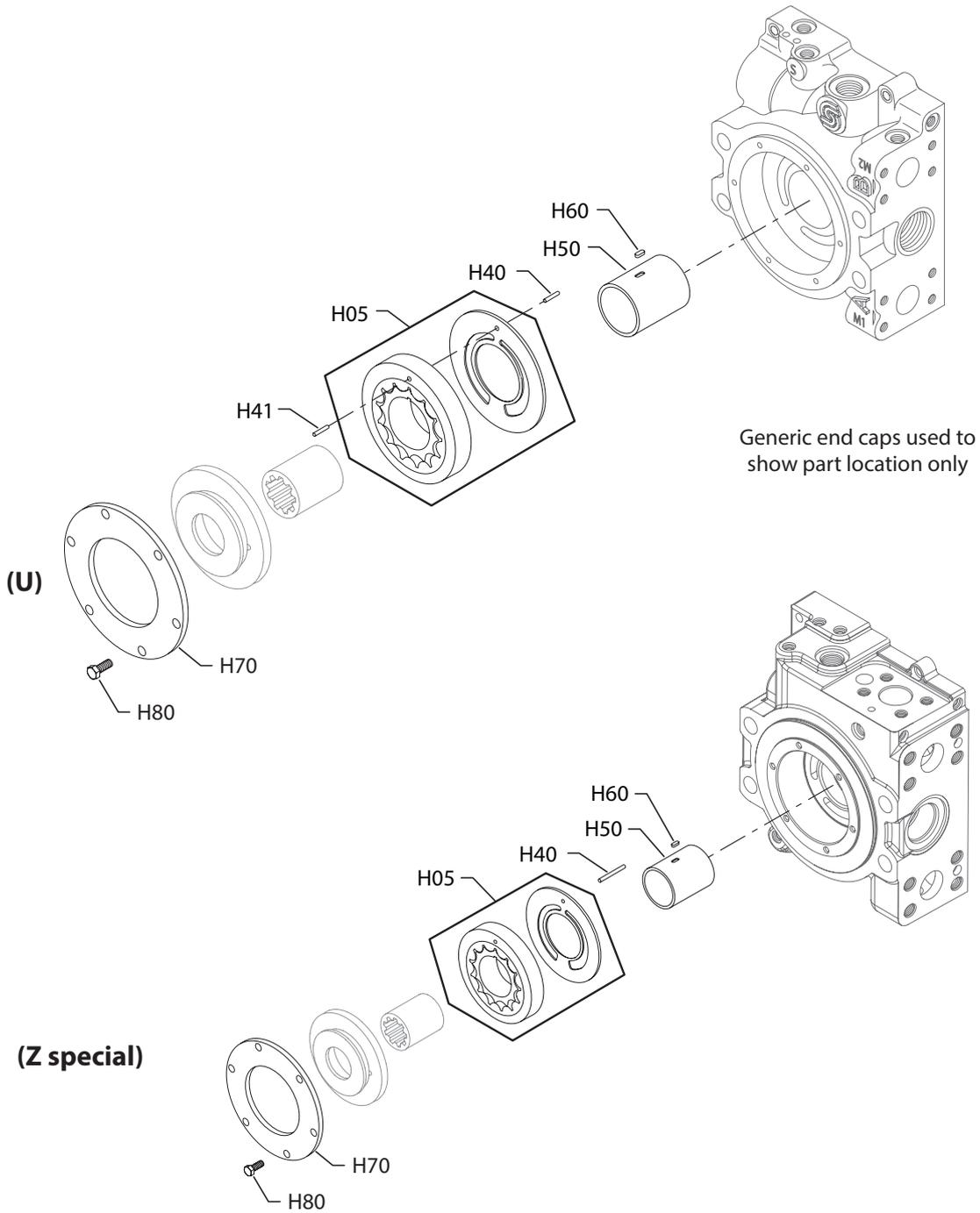
L	H25	89-41		11077719	Charge pump spacer	1
	H40	89-41		11152774	Pin	1
	H41	89-41		11152774	Pin	1
	H50	93-34		11138379	Charge pump shaft	1
	H70	89-41		509361	Retaining plate	1
	H80	89-41		378083 (9007210-0804)	Screw	6
	H90	89-41		676734 (9005110-9500)	Plug assembly	1

N	H25	93-29		11077719	Charge pump spacer	1
	H40	89-41		11152774	Pin	1
	H41	89-41		11152774	Pin	1
	H70	93-29		509361	Retaining plate	1
	H80	93-29		378083 (9007210-0804)	Screw	6
	H90	93-29		676734 (9005110-9500)	Plug assembly	1

R	H05	95-03		503758	Charge pump, set 41 cc	1
	H40	95-03		504558	Pin	1
	H50	95-03		11138378	Charge pump shaft	1
	H60	95-03		734608	Key	1
	H70	95-03		509361	Retaining plate	1
	H80	95-03		378083 (9007210-0804)	Screw	6



Variable displacement pump




**Variable displacement pump**
**Charging system**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
U	H05	96-02		509579	Charge pump, set 30 cc	1
	H40	89-41		11152774	Pin	1
	H41	89-41		11152774	Pin	1
	H50	96-02		11138379	Charge pump shaft	1
	H60	96-02		734608	Key	1
	H70	96-02		509361	Retaining plate	1
	H80	96-02		378083 (9007210-0804)	Screw	6
	Z (special*)	H05	04-49		8200240	Charge pump set, 26 cc
H40		04-49		9004800-1224	Pin	1
H50		04-49		8801178	Charge pump shaft	1
H60		04-49		9003310-1208	Key	1
H70		04-49		516761	Retaining plate	1
H80		04-49		648451	Screw	6

\* Used with 8E, 8F, 8J, 8K or 8N end cap option only.




**Variable displacement pump**
**Auxiliary mounting**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
AB & A	J10	89-41		11053288	Coupling, 9 tooth	1
	J15	89-41		501402	Cover assembly, CW (SB-1994-025*)	1
	J15	89-41		501401	Cover assembly, CCW (SB-1994-025*)	1
	J30	89-41		303651	Bushing	1
	J40	89-41	92-29	354324	O-ring	1
	J50	89-41		505068	O-ring	1
	J60	09-30		520946	Flange adaptor, SAE A	1
	J60	89-41	09-29	505113	Flange adaptor, SAE A (SB-2009-074)	1
	J70	89-41	09-29	664920 (9009625-0132)	Washer (SB-2009-074)	4
	J80	89-41		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		4800482	A pad seal	1
	J90	89-41	09-29	726950 (9004104-0420)	O-ring (SB-2009-074)	1
	J92	09-30		4460586	Cover plate	1
	J92	89-41	09-29	9802336	Cover plate (SB-2009-074)	1
	J95	89-41		9007200-3714	Screw	2

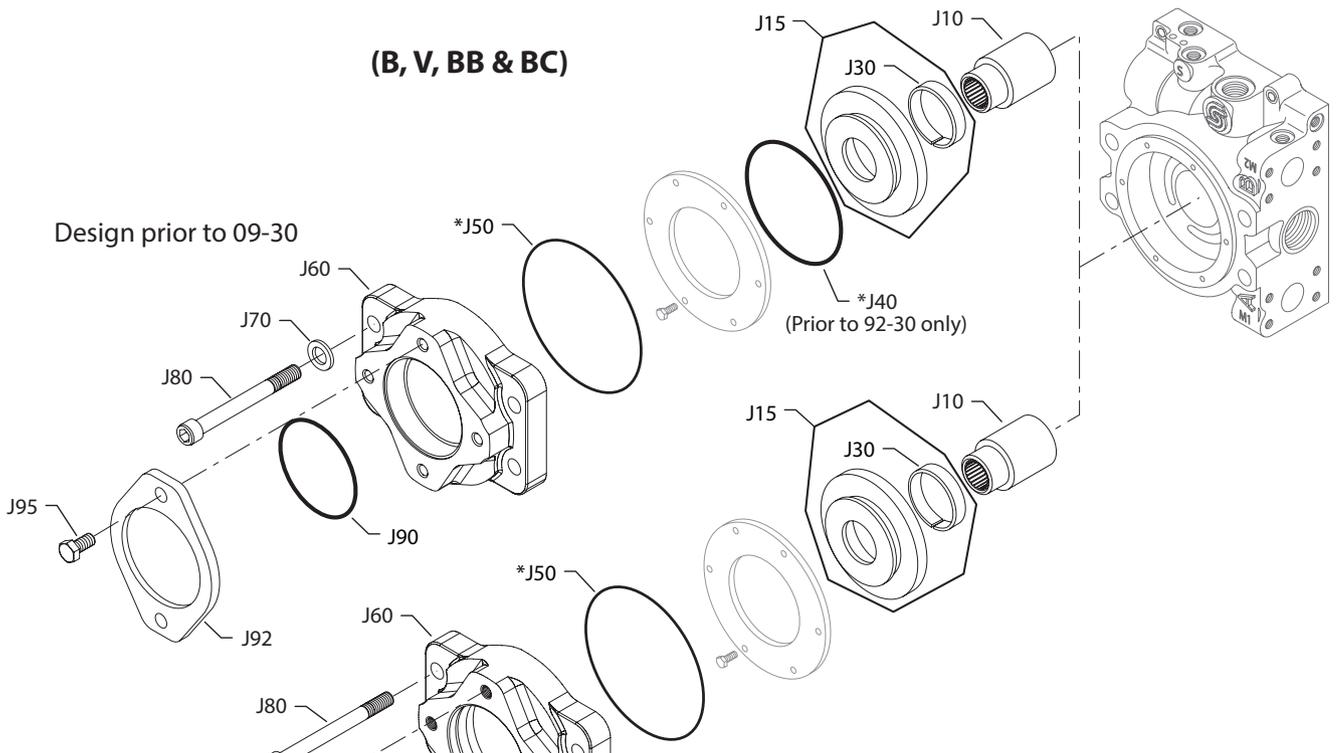
\* New style covers are interchangeable with either charge pump design

AN	J10	03-07		8100147	Coupling, 9 tooth	1
	J15	03-07		8800832	Cover assembly, CW	1
	J30	03-07		664771 (8700008)	Bushing	1
	J50	03-07		505068	O-ring	1
	J60	09-30		520946	Flange adaptor, SAE A	1
	J60	89-41	09-29	505113	Flange adaptor, SAE A (SB-2009-074)	1
	J70	89-41	09-29	664920 (9009625-0132)	Washer (SB-2009-074)	4
	J80	03-07		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		4800482	A pad seal	1
	J90	89-41	09-29	726950 (9004104-0420)	O-ring (SB-2009-074)	1
	J92	09-30		4460586	Cover plate	1
	J92	89-41	09-29	9802336	Cover plate (SB-2009-074)	1
	J95	89-41		9007200-3714	Screw	2

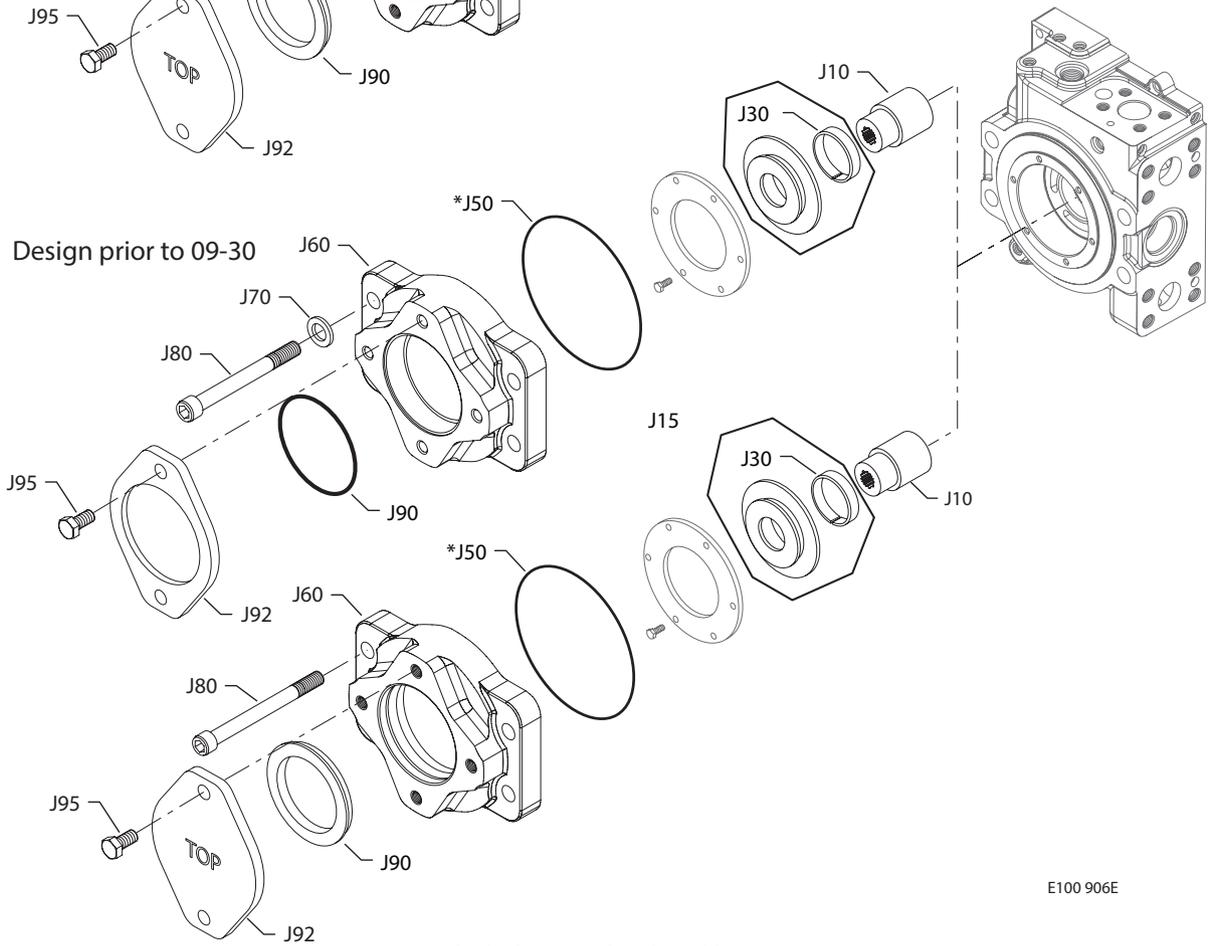


Variable displacement pump

**(B, V, BB & BC)**



**(BJ)**



\* = included in overhaul seal kit Q210

E100 906E


**Variable displacement pump**
**Auxiliary mounting**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
BB & V	J10	89-41		11053285	Coupling, 15 tooth	1
	J15	89-41		501402	Cover assembly, CW (SB-1994-025*)	1
	J15	89-41		501401	Cover assembly, CCW (SB-1994-025*)	1
	J30	89-41		303651	Bushing	1
	J40	89-41	92-29	354324	O-ring	1
	J50	89-41		505068	O-ring	1
	J60	09-30		520947	Flange adaptor, SAE B	1
	J60	89-41	09-29	503230	Flange adaptor, SAE B (SB-2009-075)	1
	J70	89-41	09-29	664920 (9009625-0132)	Washer (SB-2009-075)	4
	J80	89-41		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		8801061	B pad seal	1
	J90	89-41	09-29	726935 (9004104-0450)	O-ring (SB-2009-075)	1
	J92	09-30		8801059	Cover plate	1
	J92	89-41	09-29	4460370	Cover plate (SB-2009-075)	1
	J95	89-41		9007200-5021	Screw	2

\* New style covers are interchangeable with either charge pump design

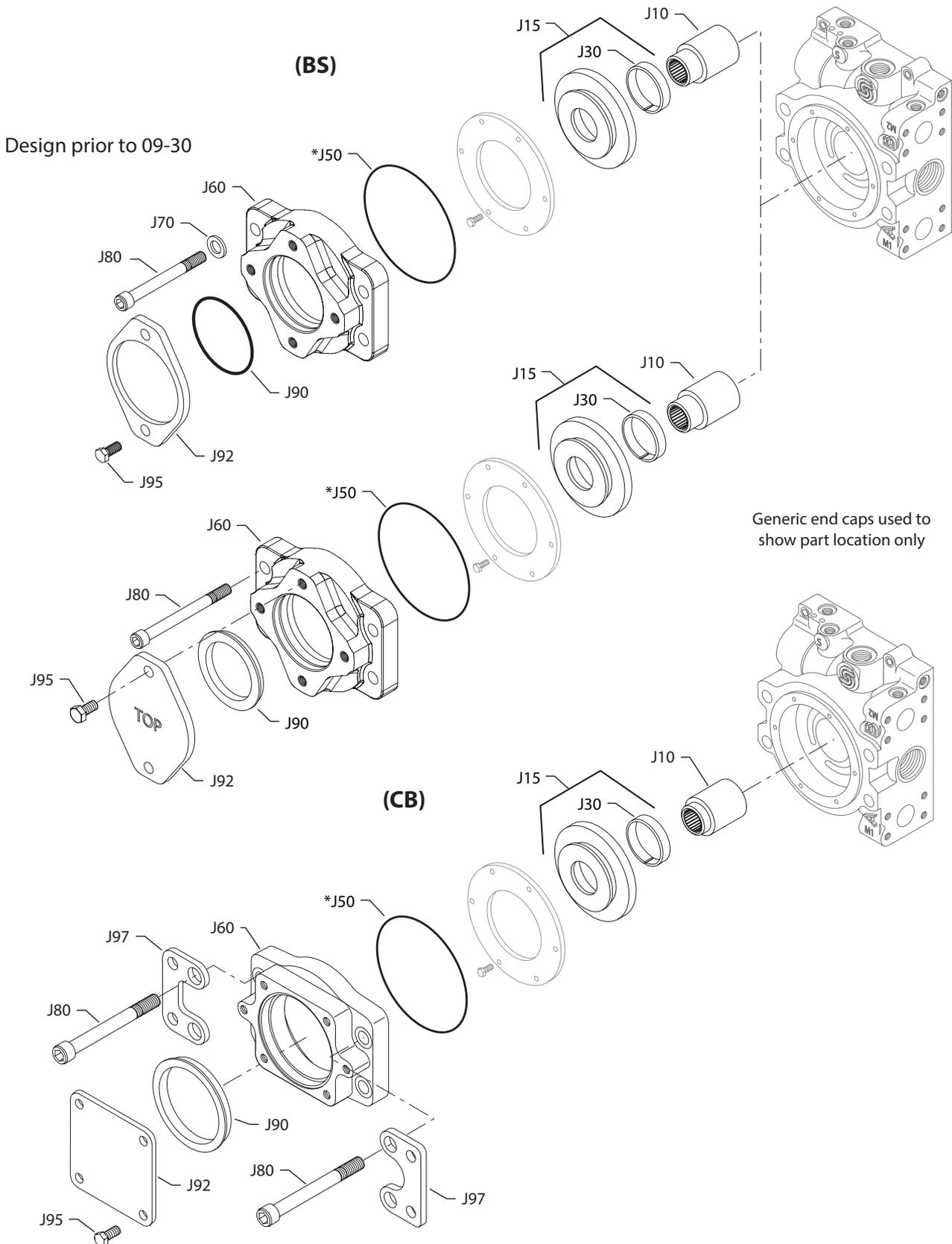
BC & B	J10	89-41		11053282	Coupling, 13 tooth	1
	J15	89-41		501402	Cover assembly, CW (SB-1994-025*)	1
	J15	89-41		501401	Cover assembly, CCW (SB-1994-025*)	1
	J30	89-41		303651	Bushing	1
	J40	89-41	92-29	354324	O-ring	1
	J50	89-41		505068	O-ring	1
	J60	09-30		520947	Flange adaptor, SAE B	1
	J60	89-41	09-29	503230	Flange adaptor, SAE B (SB-2009-075)	1
	J70	89-41	09-29	664920 (9009625-0132)	Washer (SB-2009-075)	4
	J80	89-41		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		8801061	B pad seal	1
	J90	89-41	09-29	726935 (9004104-0450)	O-ring (SB-2009-075)	1
	J92	09-30		8801059	Cover plate	1
	J92	89-41	09-29	4460370	Cover plate (SB-2009-075)	1
	J95	89-41		9007200-5021	Screw	2

\* New style covers are interchangeable with either charge pump design

BJ	J10	05-01		8100148	Coupling, 13 tooth	1
	J15	05-01		8800832	Cover assembly, CW	1
	J15	05-01		8800833	Cover assembly, CCW	1
	J30	05-01		664771 (8700008)	Bushing	1
	J50	05-01		505068	O-ring	1
	J60	09-29		11039180	Flange adaptor, SAE B	1
	J60	05-01	09-29	503230	Flange adaptor, SAE B (SB-2009-075)	1
	J70	05-01	09-29	664920 (9009625-0132)	Washer (SB-2009-075)	4
	J80	05-01		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		8801061	B pad seal	1
	J90	89-41	09-29	726935 (9004104-0450)	O-ring (SB-2009-075)	1
	J92	09-30		8801059	Cover plate	1
	J92	05-01	09-29	4460370	Cover plate (SB-2009-075)	1
	J95	05-01		544478 (9007200-5016)	Screw	2



Variable displacement pump



E101 830E

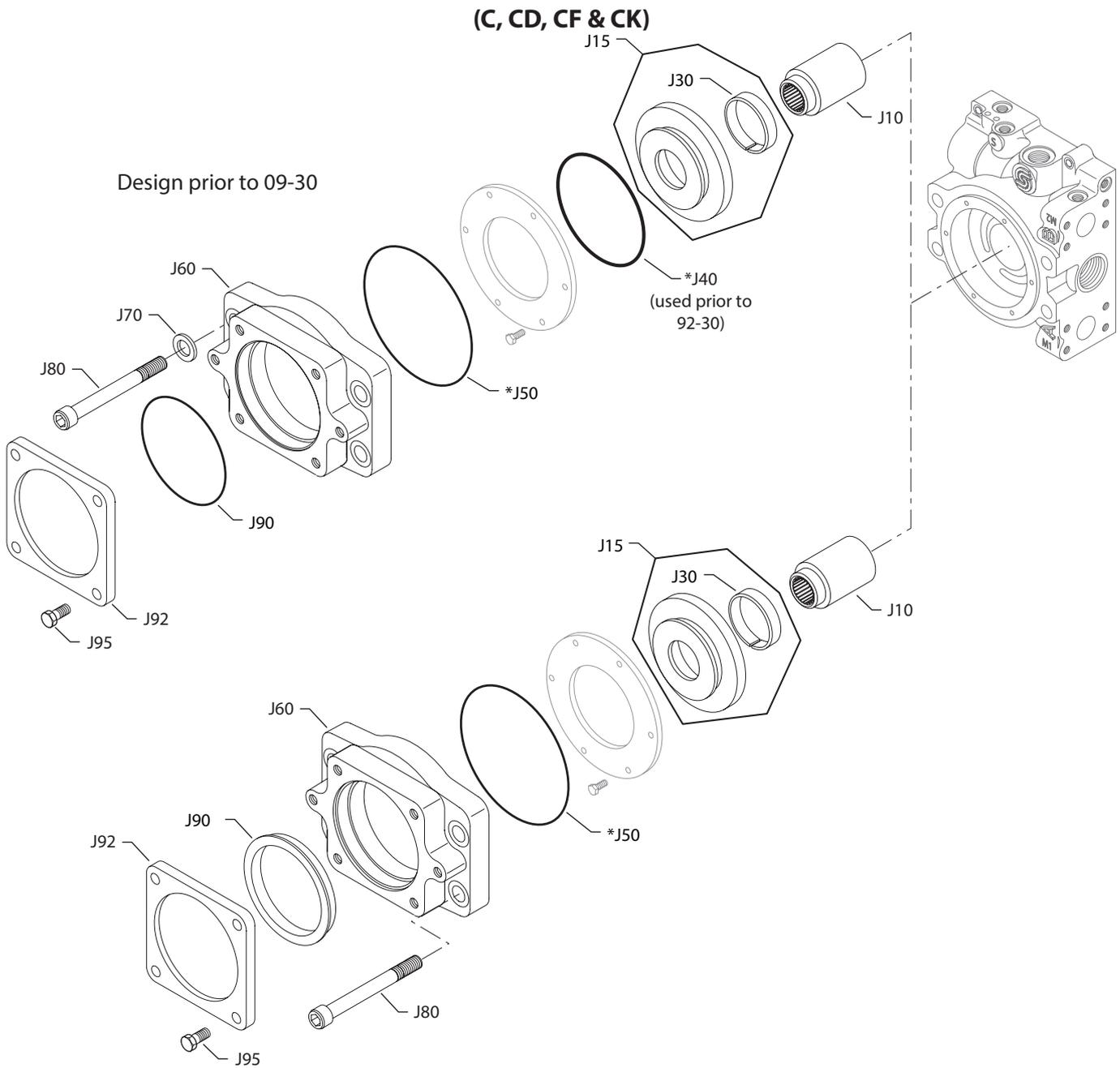
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Auxiliary mounting**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
BS	J10	06-13		11053282	Coupling, 13 tooth	1	
	J15	06-13		11002217	Cover assembly, CCW	1	
	J30	06-13		303651	Bushing	1	
	J50	06-13		505068	O-ring	1	
	J60	09-30		520947	Flange adaptor, SAE B	1	
	J60	06-13	09-29	503230	Flange adaptor, SAE B (SB-2009-075)	1	
	J70	06-13	09-29	664920 (9009625-0132)	Washer (SB-2009-075)	4	
	J80	06-13		338798 (9007314-1625)	Screw, M16 x 160	4	
	J90	09-30		8801061	B pad seal	1	
	J90	06-13	09-29	726935 (9004104-0450)	O-ring (SB-2009-075)	1	
	J92	09-30		8801059	Cover plate	1	
	J92	06-13	09-29	4460370	Cover plate (SB-2009-075)	1	
	J95	06-13		9007200-5021	Screw	2	
	CB	J10	03-38		11053284	Coupling, 14 tooth	1
		J15	03-38		513832	Cover assembly, CW	1
J30		03-38		303651	Bushing	1	
J50		03-38		505068	O-ring	1	
J60		03-38		513617	Flange adaptor, SAE C	1	
J80		03-38		338798 (9007314-1625)	Screw, M16 x 160	4	
J90		03-38		11081805	C pad seal	1	
J92		03-38		8801060	Cover plate	1	
J95		03-38		9007200-5021	Screw	4	
J97		03-38		519663	Auxiliary mounting bracket	2	



Variable displacement pump



E100 907E

\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Auxiliary mounting**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
CD & C	J10	89-41		11053284	Coupling, 14 tooth	1
	J15	89-41		501402	Cover assembly, CW (SB-1994-025*)	1
	J15	89-41		501401	Cover assembly, CCW (SB-1994-025*)	1
	J30	89-41		303651	Bushing	1
	J40	89-41	92-29	354324	O-ring	1
	J50	89-41		505068	O-ring	1
	J60	09-30		513617	Flange adaptor, SAE C	1
	J60	89-41	09-29	505116	Flange adaptor, SAE C (SB-2009-076)	1
	J70	89-41	09-29	664920 (9009625-0132)	Washer (SB-2009-076)	4
	J80	89-41		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		11081805	C pad seal	1
	J90	89-41	09-29	726943 (9004104-0490)	O-ring (SB-2009-076)	1
	J92	09-30		8801060	Cover plate	1
	J92	89-41	09-29	307363	Cover plate (SB-2009-076)	1
	J95	89-41		9007200-5021	Screw	4

\* New style covers are interchangeable with either charge pump design

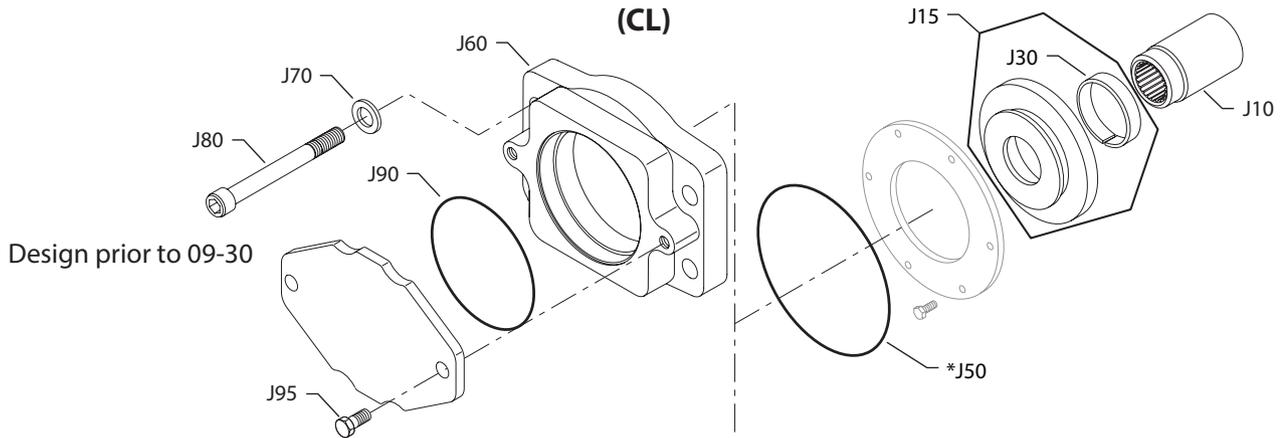
CF	J10	96-18		705954	Coupling, 21 tooth	1
	J15	96-18		501402	Cover assembly, CW	1
	J15	96-18		501401	Cover assembly, CCW	1
	J30	96-18		303651	Bushing	1
	J50	96-18		505068	O-ring	1
	J60	09-30		513617	Flange adaptor, SAE C	1
	J60	96-18	09-29	505116	Flange adaptor, SAE C (SB-2009-076)	1
	J70	96-18	09-29	664920 (9009625-0132)	Washer (SB-2009-076)	4
	J80	96-18		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		11081805	C pad seal	1
	J90	96-18	09-29	726943 (9004104-0490)	O-ring (SB-2009-076)	1
	J92	09-30		8801060	Cover plate	1
	J92	96-18	09-29	307363	Cover plate (SB-2009-076)	1
	J95	96-18		9007200-5021	Screw	4

CK	J10	96-18		11053338	Coupling, 25 tooth	1
	J15	96-18		501402	Cover assembly, CW	1
	J15	96-18		501401	Cover assembly, CCW	1
	J30	96-18		303651	Bushing	1
	J50	96-18		505068	O-ring	1
	J60	09-30		513617	Flange adaptor, SAE C	1
	J60	96-18	09-29	505116	Flange adaptor, SAE C (SB-2009-076)	1
	J70	96-18	09-29	664920 (9009625-0132)	Washer (SB-2009-076)	4
	J80	96-18		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		11081805	C pad seal	1
	J90	96-18	09-29	726943 (9004104-0490)	O-ring (SB-2009-076)	1
	J92	09-30		8801060	Cover plate	1
	J92	96-18	09-29	8800406	Cover plate (SB-2009-076)	1
	J95	96-18		9007200-5021	Screw	4

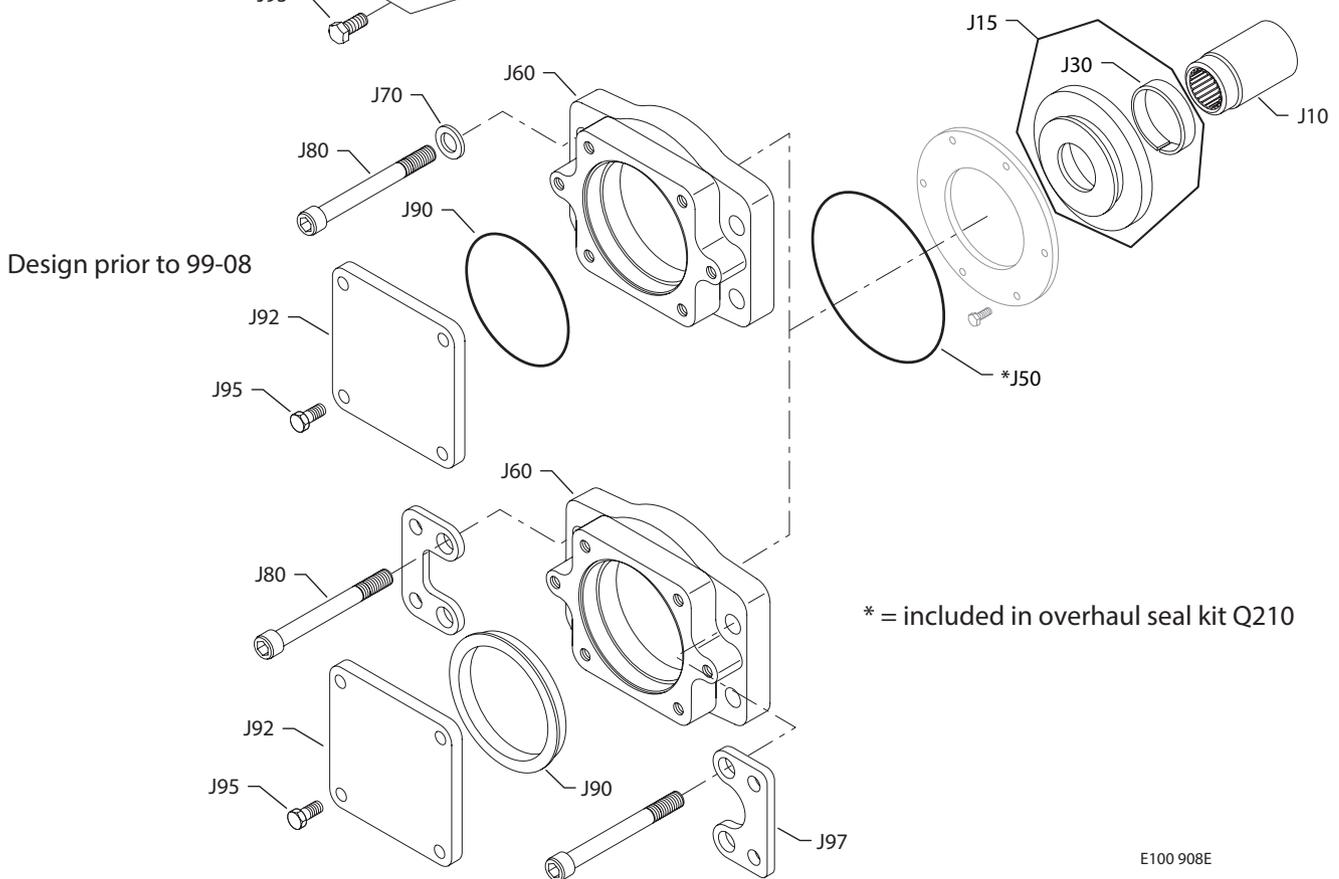


Variable displacement pump

(CL)



(CM)



\* = included in overhaul seal kit Q210

E100 908E

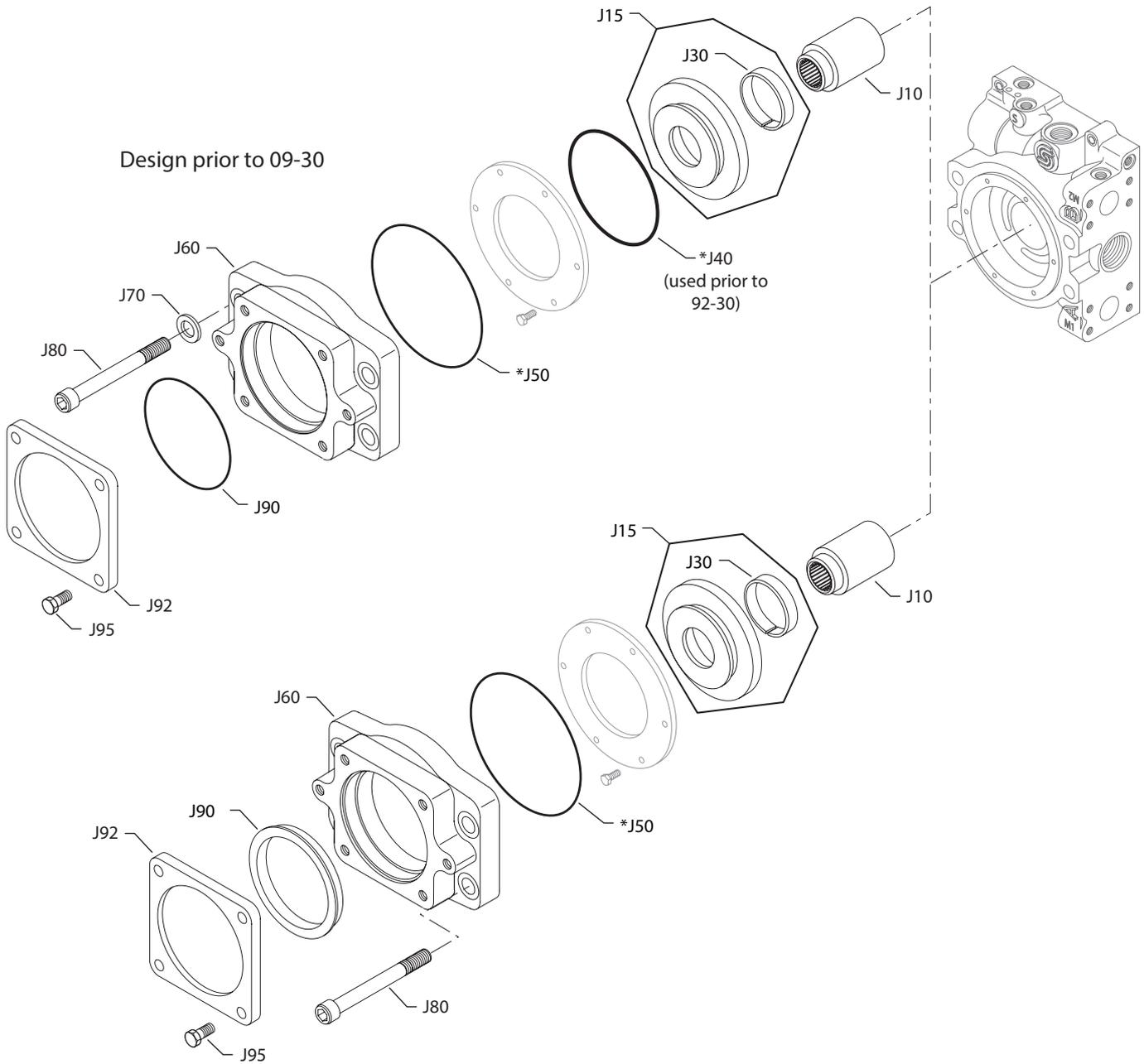

**Variable displacement pump**
**Auxiliary mounting**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
CL	J10	96-18		11053286	Coupling, 17 tooth	1
	J15	96-18		503399	Cover assembly, CW	1
	J15	96-18		503397	Cover assembly, CCW	1
	J30	96-18		303651	Bushing	1
	J50	96-18		505068	O-ring	1
	J60	09-30		11039184	Flange adaptor, SAE C	1
	J60	96-18	09-29	508407	Flange adaptor, SAE C (SB-2009-076)	1
	J70	96-18	09-29	664920 (9009625-0132)	Washer (SB-2009-076)	4
	J80	96-18		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		11081805	C pad seal	1
	J90	96-18	09-29	726943 (9004104-0490)	O-ring (SB-2009-076)	1
	J92	09-30		11048554	Cover plate	1
	J92	96-18	09-29	350678	Cover plate	1
	J95	96-18		9007200-6222	Screw	2
	CM	J10	89-41		705954	Coupling, 21 tooth
J15		89-41		513832	Cover assembly, CW	1
J30		89-41		303651	Bushing	1
J50		89-41		505068	O-ring	1
J60		99-08		513617	Flange adaptor, SAE C	1
J60		89-41	99-07	505116	Flange adaptor, SAE C (SB-2009-076)	1
J70		89-41	09-29	664920 (9009625-0132)	Washer (SB-2009-076)	8
J80		94-49		506389	Screw, M16 x 170	4
J80		89-41	94-48	338798 (9007314-1625)	Screw, M16 x 160	4
J90		99-08		11081805	C pad seal	1
J90		89-41	99-07	726943 (9004104-0490)	O-ring (SB-2009-076)	1
J92		99-08		8801060	Cover plate	1
J92		89-41	99-07	307363	Cover plate	1
J95		89-41		9007200-5021	Screw	4
J97		94-49		519663	Auxiliary mounting bracket	2



Variable displacement pump

(CS & CY)



E100 907E

\* = included in overhaul seal kit Q210

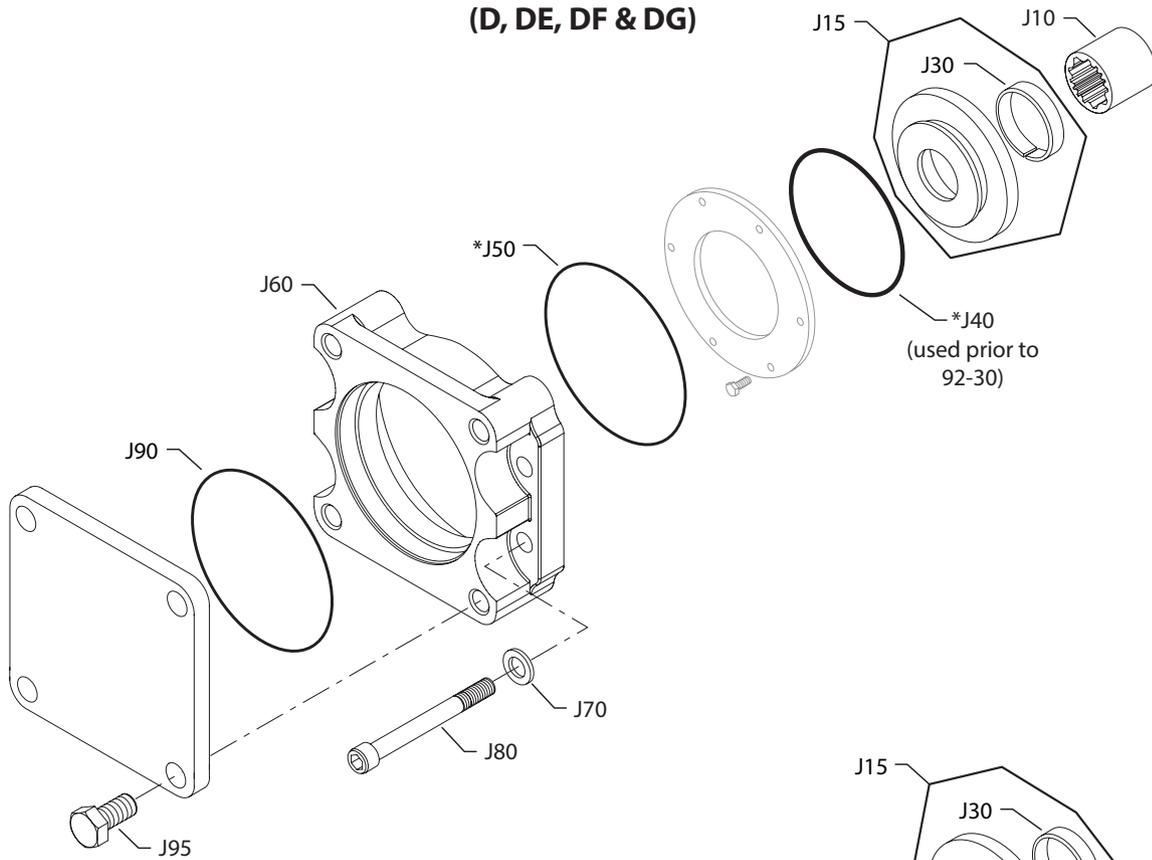

**Variable displacement pump**
**Auxiliary mounting**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
CS	J10	96-18		11053286	Coupling, 17 tooth	1
	J15	96-18		503399	Cover assembly, CW	1
	J15	96-18		503397	Cover assembly, CCW	1
	J30	96-18		303651	Bushing	1
	J50	96-18		505068	O-ring	1
	J60	99-08		513617	Flange adaptor, SAE C	1
	J60	96-18	99-07	505116	Flange adaptor, SAE C (SB-2009-076)	1
	J70	96-18	09-29	664920 (9009625-0132)	Washer (SB-2009-076)	4
	J80	96-18		338798 (9007314-1625)	Screw, M16 x 160	4
	J90	09-30		11081805	C pad seal	1
	J90	96-18	09-29	726943 (9004104-0490)	O-ring (SB-2009-076)	1
	J92	09-30		8801060	Cover plate	1
	J92	96-18	09-29	8800406	Cover plate	1
	J95	96-18		9007200-5021	Screw	4
	CY	J10	05-46		11053286	Coupling, 17 tooth
J15		05-46		11002215	Cover assembly, CCW	1
J30		05-46		303651	Bushing	1
J50		05-46		505068	O-ring	1
J60		05-46		513617	Flange adaptor, SAE C	1
J70		05-46	09-29	664920 (9009625-0132)	Washer	4
J80		05-46		338798 (9007314-1625)	Screw, M16 x 160	4
J90		05-46		11081805	C pad seal	1
J92		05-46		8801060	Cover plate	1
J95		05-46		9007200-5021	Screw	4

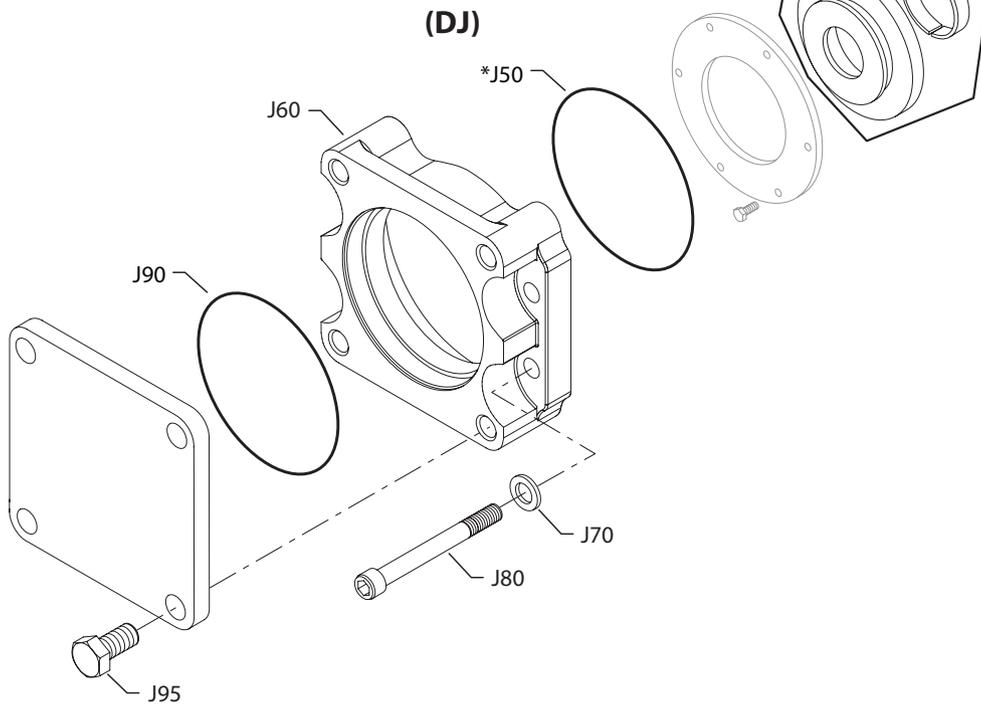


Variable displacement pump

(D, DE, DF & DG)



(DJ)



E100 909E

\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Auxiliary mounting**

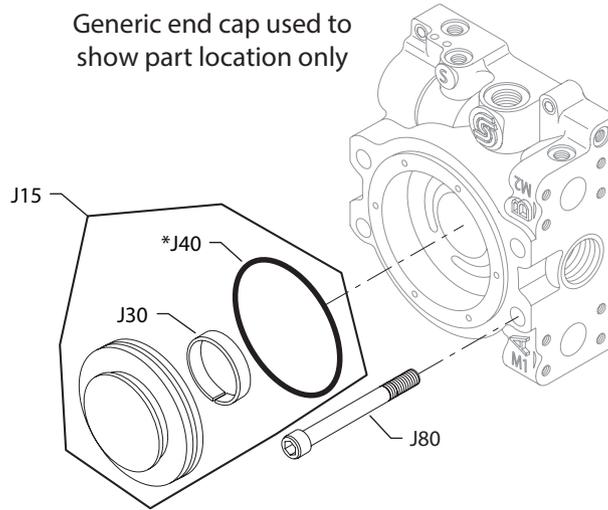
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
D & DE	J10	89-41		11053283	Coupling, 13 tooth	1	
	J15	89-41		501402	Cover assembly, CW	1	
	J15	89-41		501401	Cover assembly, CCW	1	
	J30	89-41		303651	Bushing	1	
	J40	89-41	92-29	354324	O-ring	1	
	J50	89-41		505068	O-ring	1	
	J60	89-41		505118	Flange adaptor, SAE D	1	
	J70	89-41	12-39	664920 (9009625-0132)	Washer	4	
	J80	89-41		338798 (9007314-1625)	Screw, M16 x 160	4	
	J90	89-41		726927	O-ring	1	
	J92	89-41		338400	Cover plate	1	
	J95	89-41		9007200-7524	Screw	4	
	DF	J10	96-18		11053283	Coupling, 13 tooth	1
J15		96-18		513832	Cover assembly, CW	1	
J15		96-18		11002217	Cover assembly, CCW	1	
J30		96-18		303651	Bushing	1	
J50		96-18		505068	O-ring	1	
J60		96-18		505118	Flange adaptor, SAE D	1	
J70		96-18	12-39	664920 (9009625-0132)	Washer	4	
J80		96-18		338798 (9007314-1625)	Screw, M16 x 160	4	
J90		96-18		726927	O-ring	1	
J92		96-18		338400	Cover plate	1	
J95		96-18		9007200-7524	Screw	4	
DG		J10	96-18		11053339	Coupling, 27 tooth	1
		J15	96-18		501402	Cover assembly, CW	1
	J15	96-18		501401	Cover assembly, CCW	1	
	J30	96-18		303651	Bushing	1	
	J50	96-18		505068	O-ring	1	
	J60	96-18		505118	Flange adaptor, SAE D	1	
	J70	96-18	12-39	664920 (9009625-0132)	Washer	4	
	J80	96-18		338798 (9007314-1625)	Screw, M16 x 160	4	
	J90	96-18		726927	O-ring	1	
	J92	96-18		338400	Cover plate	1	
	J95	96-18		9007200-7524	Screw	4	
	DJ	J15	10-42		503663	Cover assembly, CW	1
		J15	10-42		503666	Cover assembly, CCW	1
J30		10-42		303651	Bushing	1	
J50		10-42		505068	O-ring	1	
J60		10-42		505118	Flange adaptor, SAE D	1	
J70		10-42	12-39	664920 (9009625-0132)	Washer	4	
J80		10-42		338798 (9007314-1625)	Screw, M16 x 160	4	
J90		10-42		726927	O-ring	1	
J92		10-42		338400	Cover plate	1	
J95		10-42		9007200-7524	Screw	4	



Variable displacement pump

(NN, NT & NV)

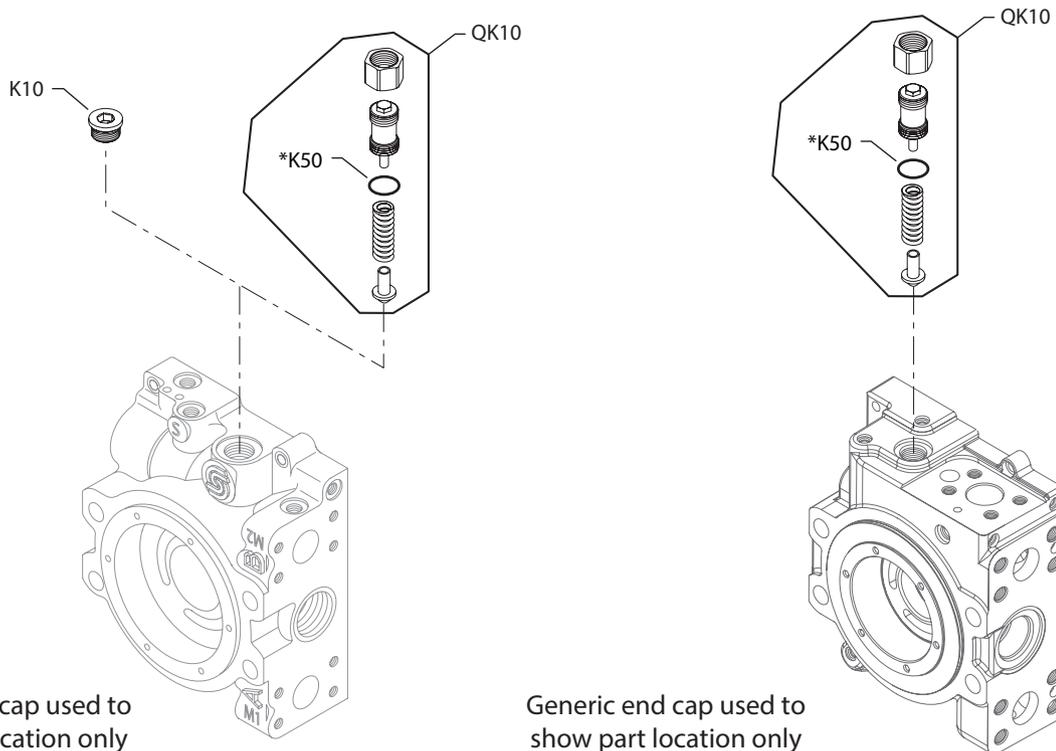
Generic end cap used to show part location only



(JD)

(14-42)

(36 special)



Generic end cap used to show part location only

Generic end cap used to show part location only

E100 910E

\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Auxiliary mounting**

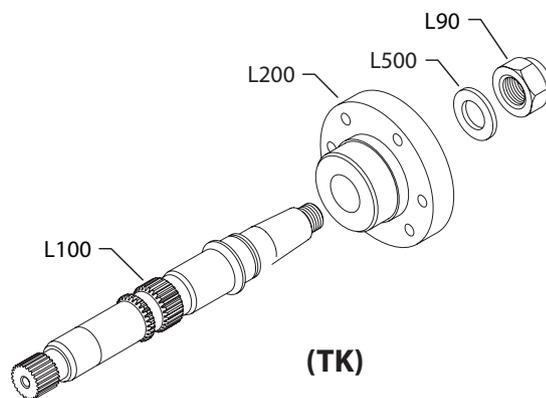
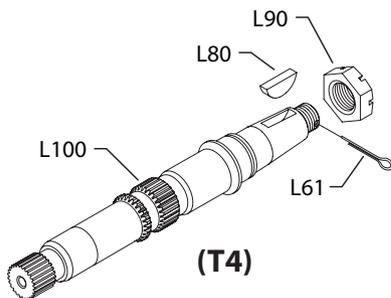
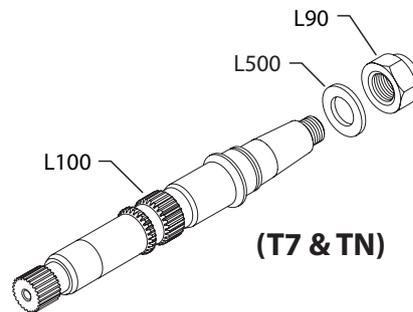
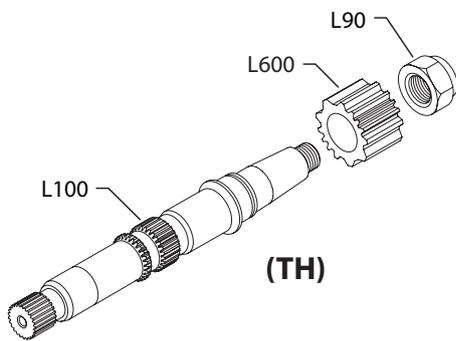
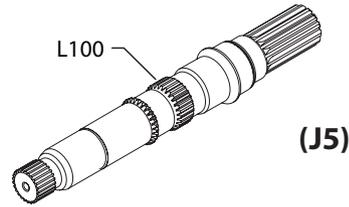
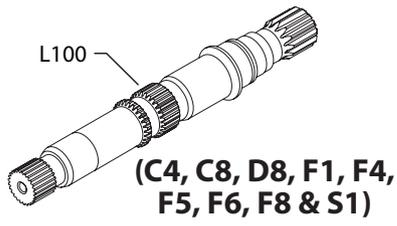
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
NN	J15	89-41		501400	Cover assembly	1
	J30	89-41		303651	Bushing	1
	J40	89-41		11147582	O-ring	1
	J80	89-41		518721	Screw	4
NT	J15	96-18		517450	Cover assembly	1
	J30	96-18		303651	Bushing	1
	J40	96-18		11147582	O-ring	1
	J80	96-18		518721	Screw	4
NV	J15	03-08		8800834	Cover assembly	1
	J30	03-08		664771 (8700008)	Bushing	1
	J40	03-08		680892 (9004104-0440)	O-ring	1
	J80	03-08		518721	Screw	4

**Charge pressure relief**

14-32	QK10	89-41		8510272	Charge relief valve kit, 14-32 bar	1
	K50	89-41		001156 (9004201-7500)	O-ring	1
34-42	QK10	96-13		8510390	Charge relief valve kit, 34-42 bar	1
	K50	96-13		001156 (9004201-7500)	O-ring	1
36 special	QK10	96-13		8510269	Charge relief valve kit, 34-42 bar	1
	K50	96-13		001149 (9004201-6200)	O-ring	1
JD	K10	96-13		664524 (9005110-9000)	Plug assembly	1
XX	QK10	89-41		8510272	Charge relief valve kit, 18-32 bar	1
	K50	89-41		001156 (9004201-7500)	O-ring	1



Variable displacement pump



E100 924E

\* = included in overhaul seal kit Q210

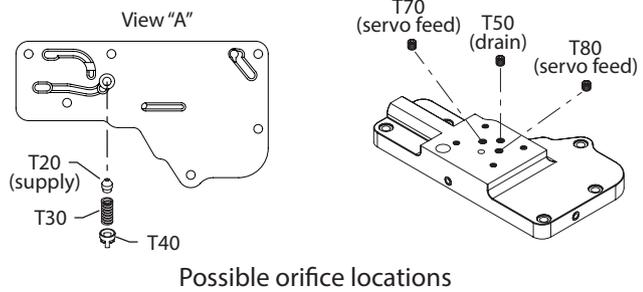
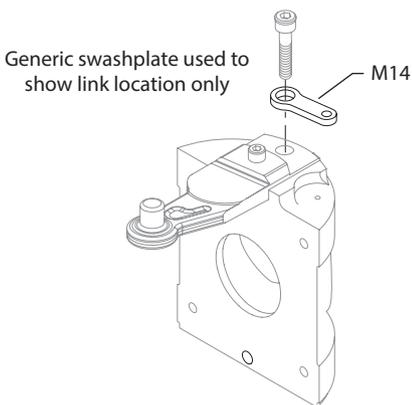
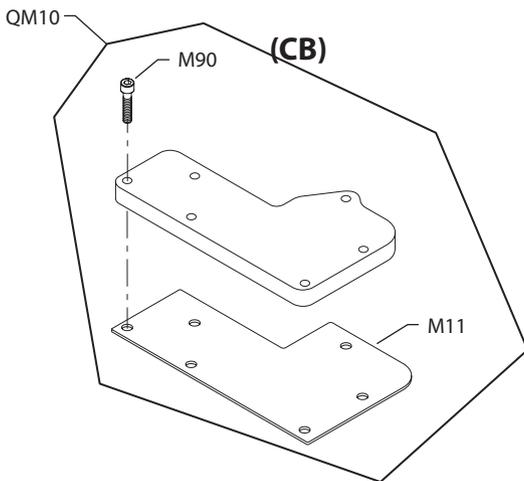
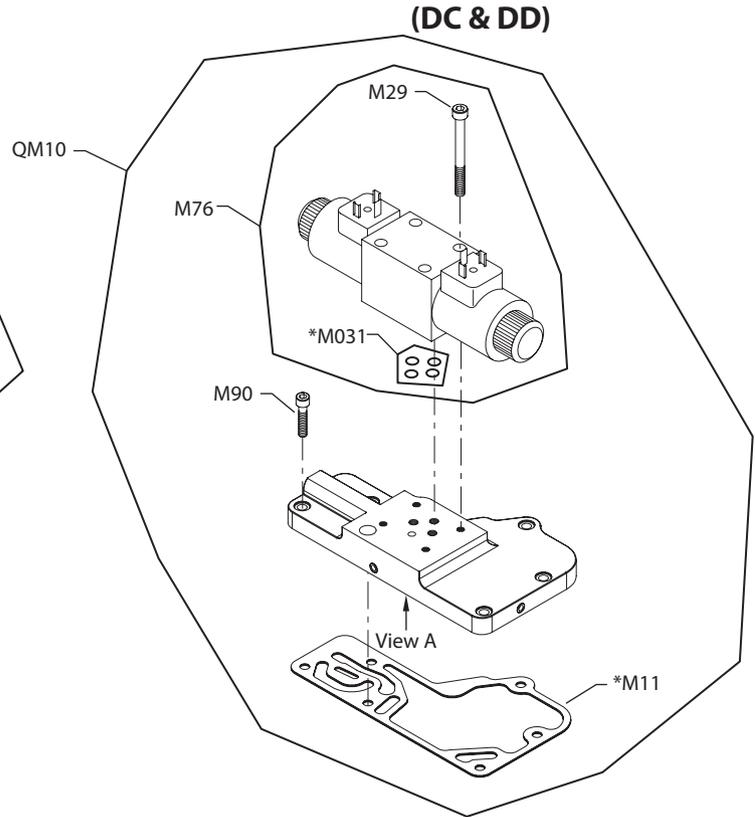
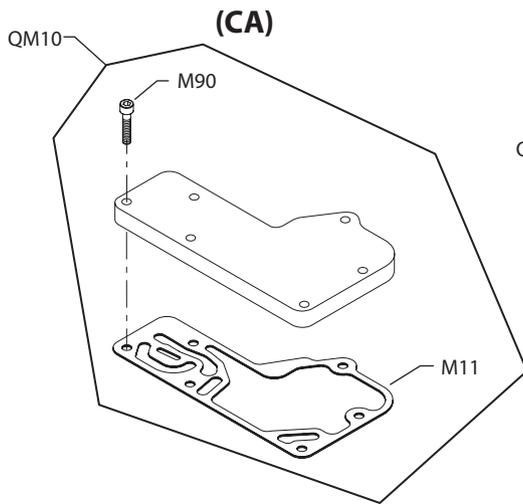

**Variable displacement pump**
**Shaft**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
C4	L100	03-08		11031204	Shaft, 27 tooth spline, 16/32, special*	1
* Used with 8E, 8F, 8J, 8K or 8N end cap option only.						
C8	L100	89-46		303495	Shaft, 27 tooth spline, 16/32	1
D8	L100	89-46		503443	Shaft, 27 tooth spline, 16/32, M10 tapped thread	1
F1	L100	89-46		335695	Shaft, 13 tooth spline, 8/16	1
F4	L100	96-45		518465	Shaft, 13 tooth spline, 8/16, special*	1
* Used with 8E, 8F or 8J end cap option only.						
F5	L100	89-46		518828	Shaft, 13 tooth spline, 8/16, 5/8-11 tapped thread	1
F6	L100	89-46		11002449	Shaft, 13 tooth spline, 8/16, special length	1
F8	L100	89-46		11031204	Shaft, 27 tooth spline, 16/32	1
J5	L100	92-16		506911	Shaft, 13 tooth spline, 8/16, no relief	1
S1	L100	14-25		11153398	Shaft, 14 tooth spline, 12/24	1
T4	L61	89-46		551424	Cotter pin	1
	L80	89-46		9003326-0005	Key	1
	L90	89-46		9700189	Slotted nut, 1.25-18	1
	L100	89-46		346601	Shaft, 1.75" tapered	1
T7	L90	98-19		508784	Self locking nut, M30	1
	L100	98-19		511619	Shaft, 1.75" tapered, no keyway	1
	L500	98-19		511628	Washer	1
TH	L90	89-46		508784	Self locking nut, M30	1
	L100	89-46		508592	Shaft, 1.75 tapered, no keyway	1
	L600	89-46		510969	Coupling	1
TK	L90	06-13		508784	Self locking nut, M30	1
	L100	06-13		511619	Shaft, 1.75 tapered, no keyway	1
	L200	06-13		511463	Tapered flange	1
	L500	06-13		511628	Washer	1
TN	L90	06-29		508784	Self locking nut, M30	1
	L100	06-29		11010697	Shaft, 1.75 tapered, no keyway, special*	1
	L500	06-29		511628	Washer	1

\* Used with 8E, 8F or 8J end cap option only.



Variable displacement pump



**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 716E

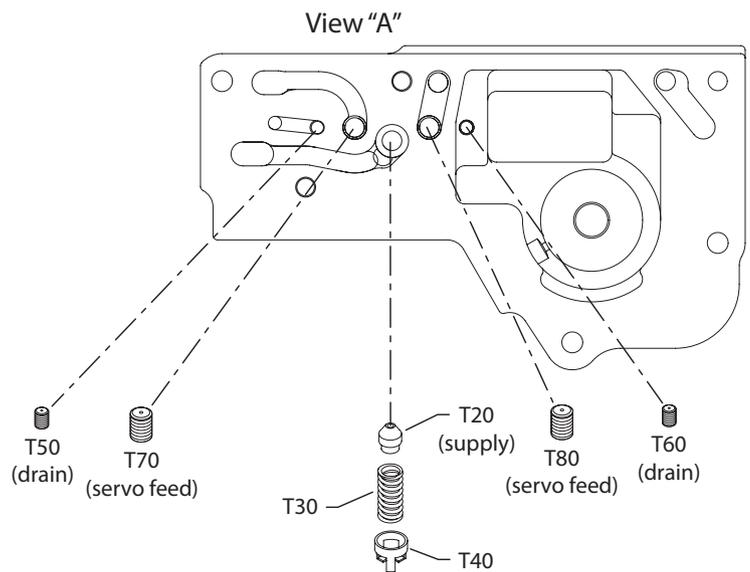
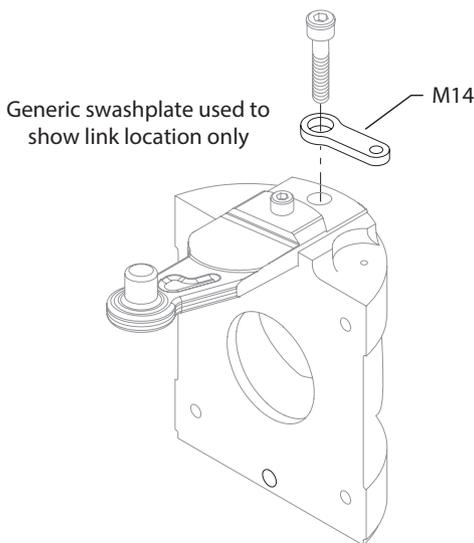
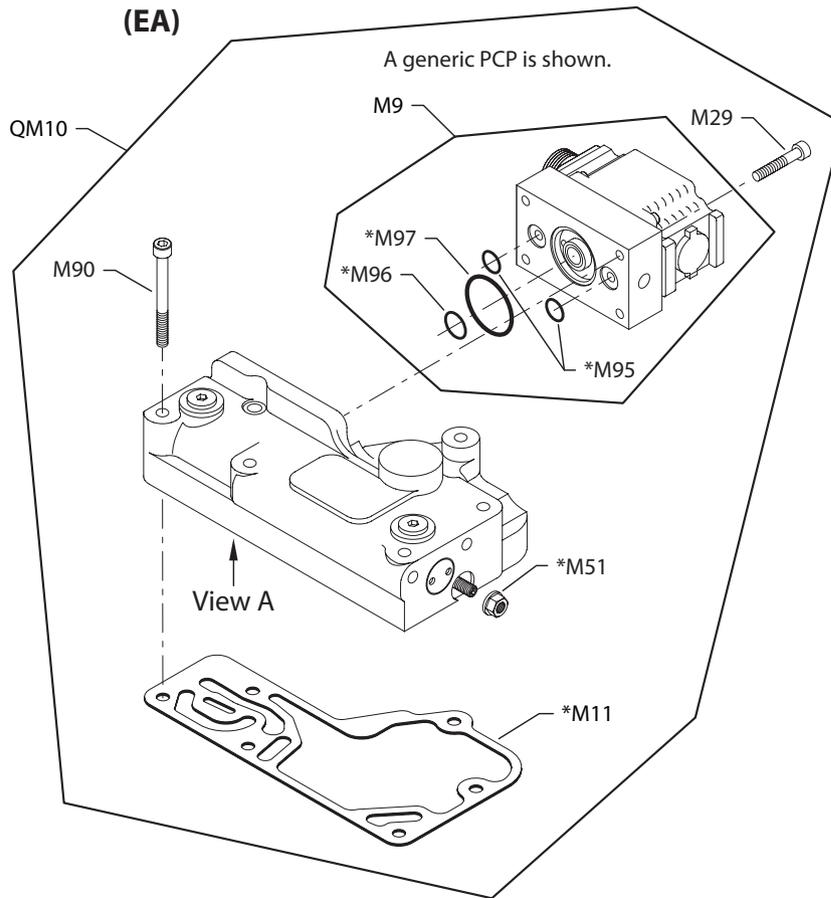
\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
CA	M11	89-41		8800923	Control gasket	1
	M90	89-41		693341 (9007314-0606)	Screw	6
	QM10	89-41		8102M0CA-A	Control cover plate kit	1
CB	M11	89-41		8800923	Control gasket	1
	M14	89-41		11070307	Feedback link	1
	M90	89-41		693341 (9007314-0606)	Screw	6
	QM10	89-41		8102M0CA-A	Control cover plate kit	1
CF	M11	89-41		509718	Control gasket	1
	M14	89-41		11070307	Feedback link	1
	M90	89-41		693341 (9007314-0606)	Screw	6
	QM10	89-41		11097111	Control cover plate kit	1
DC	M11	89-41		8800923	Control gasket	1
	M29	89-41		035592	Screw	4
	M76	89-41		687103	Valve assembly, 12 volt	1
	M90	89-41		693341 (9007314-0606)	Screw	6
	QM031	89-41		11099647	Valve seal kit	1
	QM10	89-41		8102M0DC-A	3-position FNR control kit, 12 volt	1
	QM210	89-41		11096172	FNR control seal kit	1
DD	M11	89-41		8800923	Control gasket	1
	M29	89-41		035592	Screw	4
	M76	89-41		549907/P	Valve assembly, 24 volt	1
	M90	89-41		693341 (9007314-0606)	Screw	6
	QM031	89-41		11099647	Valve seal kit	1
	QM10	89-41		8102M0DD-A	3-position FNR control kit, 24 volt	1
	QM210	89-41		11096172	FNR control seal kit	1



Variable displacement pump



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 835E

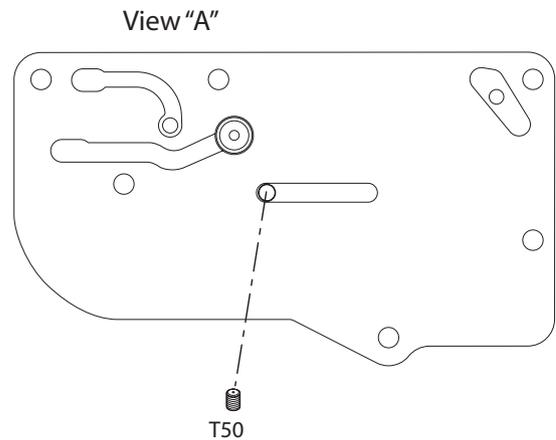
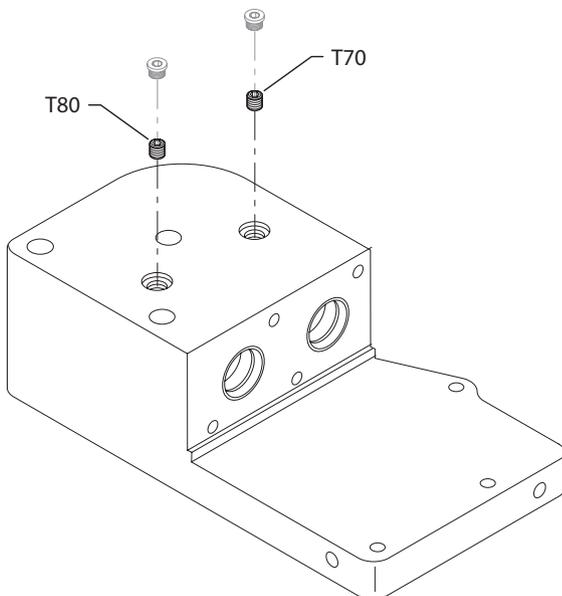
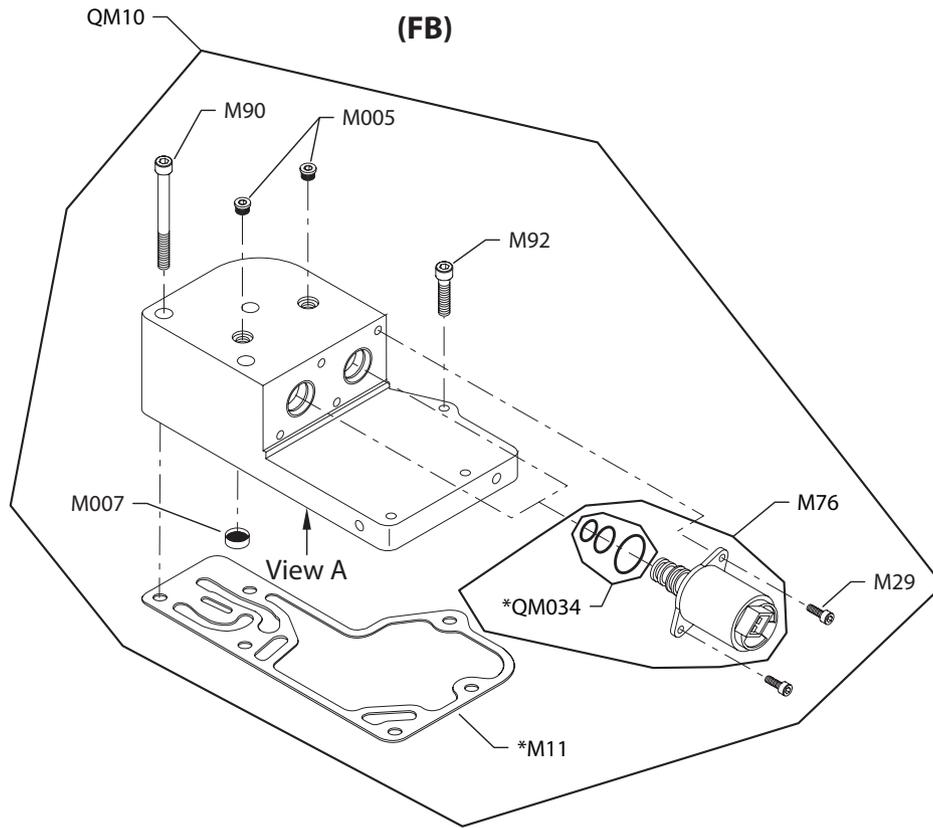
\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

<b>Order Code</b>	<b>Item</b>	<b>Date Begin</b>	<b>Date End</b>	<b>Part Number</b>	<b>Part Name</b>	<b>Qty. per Model/Kit</b>
EA	M9	92-19		MCV110A1017	PCP, MS connector	1
	M11	92-19		8800923	Control gasket	1
	M14	92-19		11070307	Feedback link	1
	M29	92-19		K07067	Screw	4
	M51	92-19		9003509-0008	Seal nut	1
	M90	92-19		692889 (9007314-0611)	Screw	6
	M95	92-19		318337 (9004104-0120)	O-ring	2
	M96	92-19		011304 (9004104-0140)	O-ring	1
	M97	92-19		318345 (9004104-0240)	O-ring	1
	QM10	92-19		8202M0EA-B	EDC1 kit, MS connector	1
	QM210	92-19		11096174	EDC1 seal kit	1



Variable displacement pump



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 836E

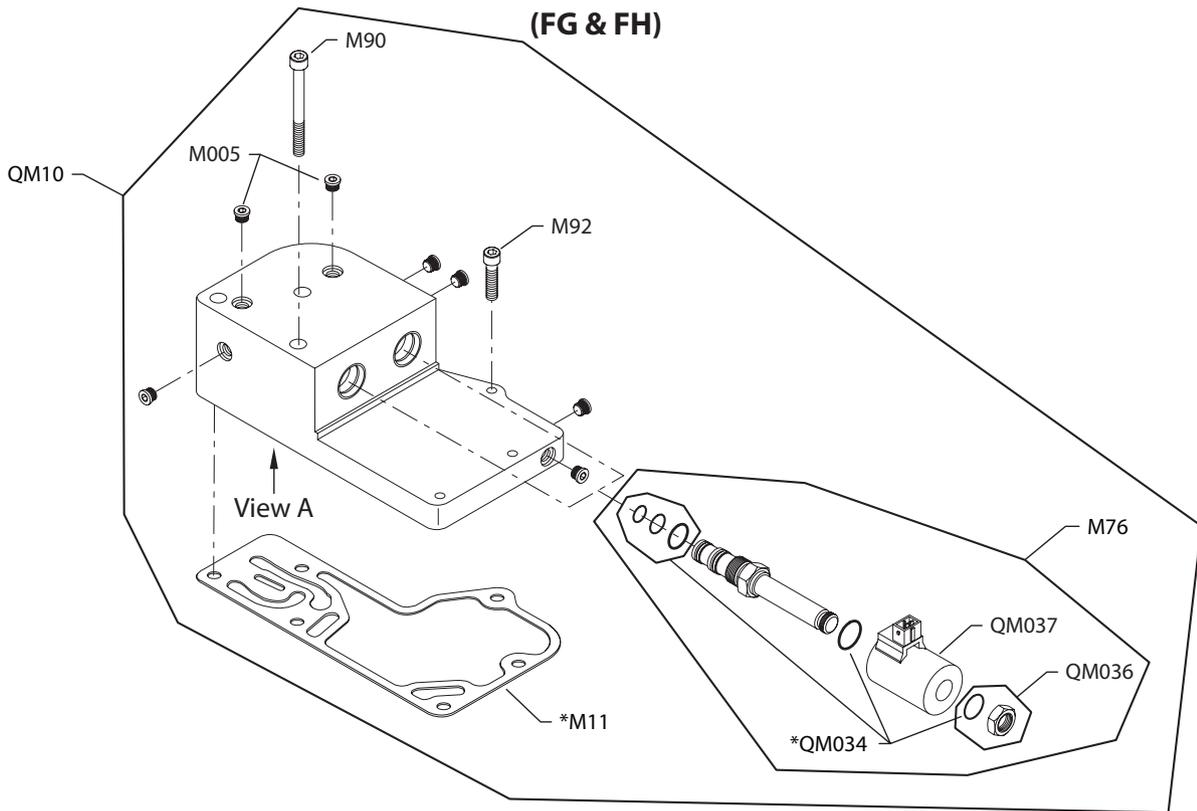
\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

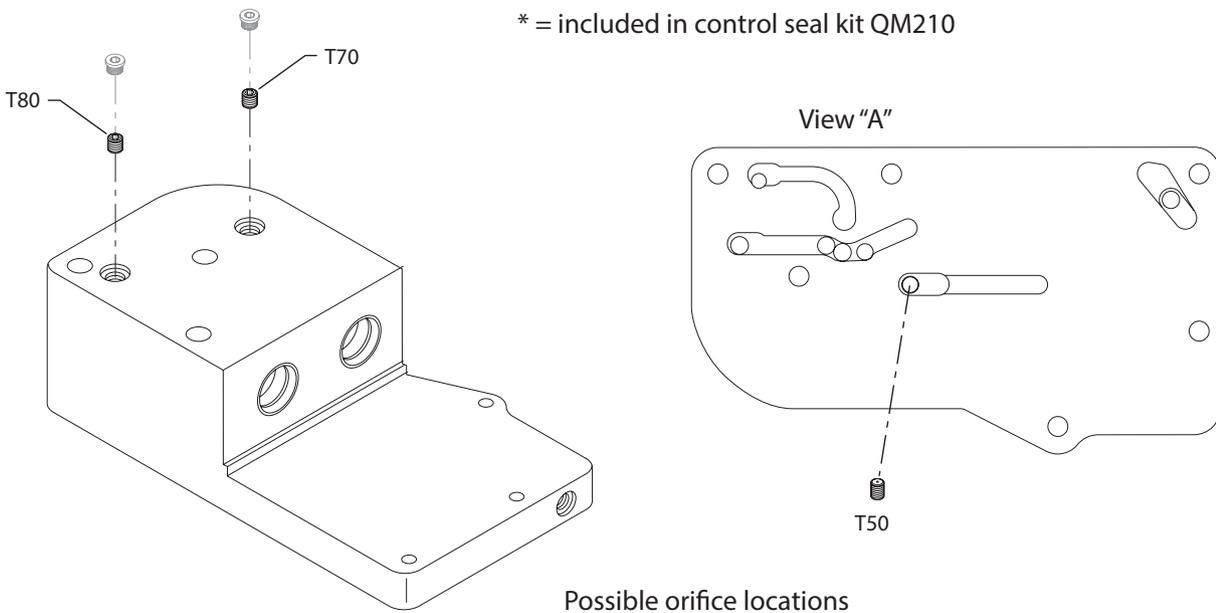
<b>Order Code</b>	<b>Item</b>	<b>Date Begin</b>	<b>Date End</b>	<b>Part Number</b>	<b>Part Name</b>	<b>Qty. per Model/Kit</b>
FB	M11	96-41		8800923	Control gasket	1
	M29	96-41		067694	Screw	4
	M76	96-41		518081	Solenoid valve, 24 volt, 25 bar	2
	M90	96-41		9007314-0614	Screw	3
	M92	96-41		693341 (9007314-0606)	Screw	3
	M005	96-41		11040532	Plug assembly	2
	M007	96-41		K00775	Filter screen	1
	QM10	92-19		11015080	NFPE control kit	1
	QM034	96-41		11099849	Valve seal kit	2
	QM210	92-19		11100028	NFPE control seal kit	1



Variable displacement pump



\* = included in control seal kit QM210



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 925E

\* = included in control seal kit QM210

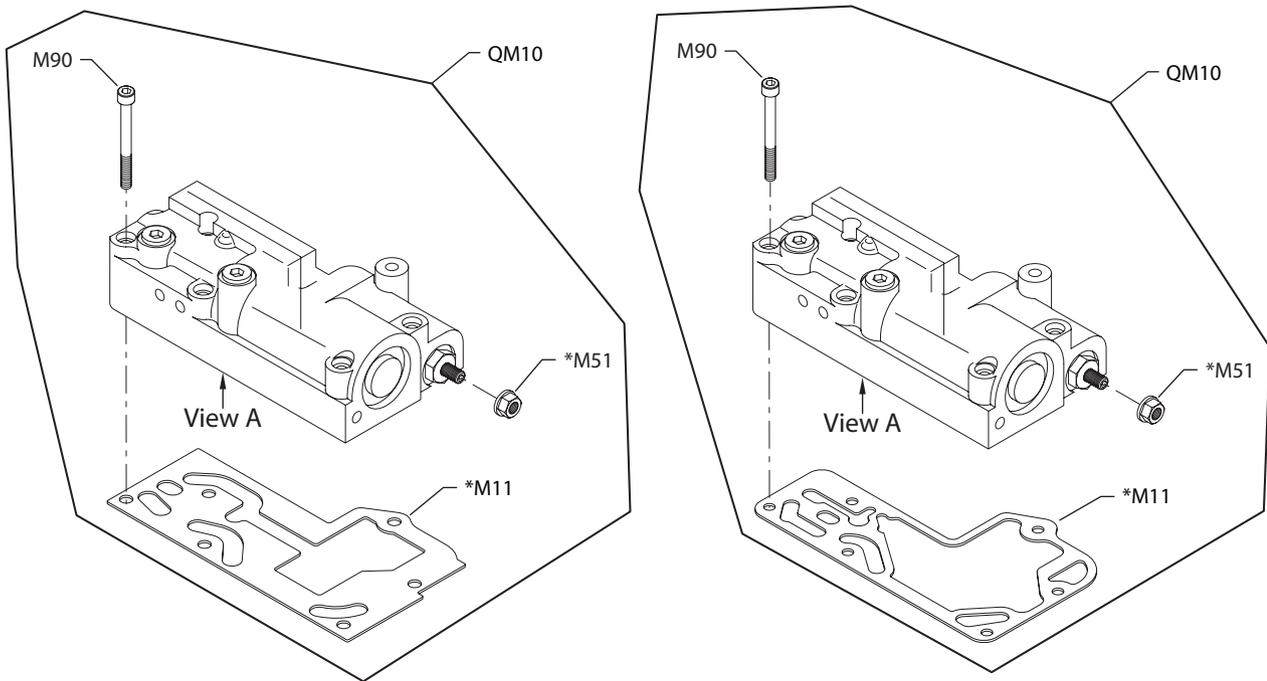

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
FG	M11	00-30		8800923	Control gasket	1
	M76	00-30		516006	Pressure reducing valve, 32 bar	2
	M90	00-30		9007314-0614	Screw	3
	M92	00-30		693341 (9007314-0606)	Screw	3
	M005	00-30		11040532	Plug assembly	2
	QM10	00-30		11026563	NFPE control kit, 12 volt, 32 bar	1
	QM034	00-30		11100185	Valve seal kit	2
	QM036	00-30		518088	Nut with O-ring	2
	QM037	00-30		516003	Coil, 12 volt, Jet connector	2
	QM210	00-30		11100001	NFPE control seal kit	1
	FH	M11	00-30		8800923	Control gasket
M76		00-30		515617	Pressure reducing valve, 24 volt, 32 bar	2
M90		00-30		9007314-0614	Screw	3
M92		00-30		693341 (9007314-0606)	Screw	3
M005		00-30		11040532	Plug assembly	2
QM10		00-30		11026569	NFPE control kit, 24 volt, 32 bar	1
QM034		00-30		11100185	Valve seal kit	2
QM036		00-30		518088	Nut with O-ring	2
QM037		00-30		516004	Coil, 24 volt, Jet connector	2
QM210		00-30		11100001	NFPE control seal kit	1

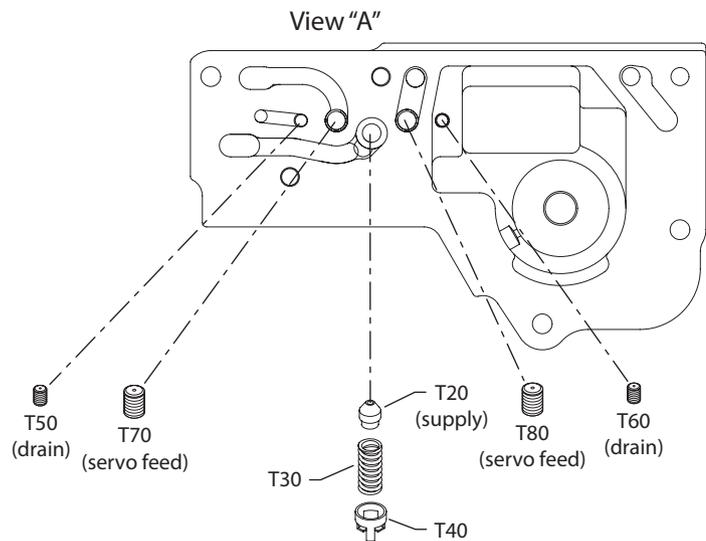
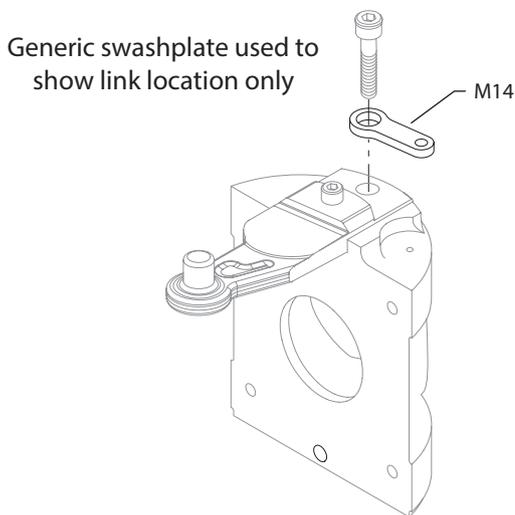


Variable displacement pump

(HF, HK, HM & HS)



\* = included in control seal kit QM210



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 837E

\* = included in control seal kit QM210

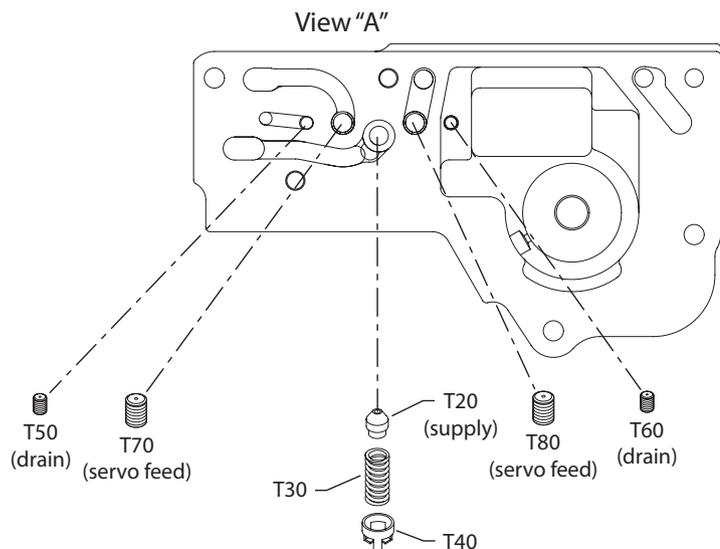
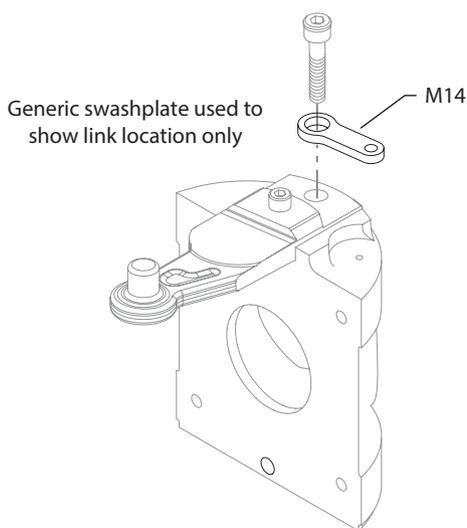
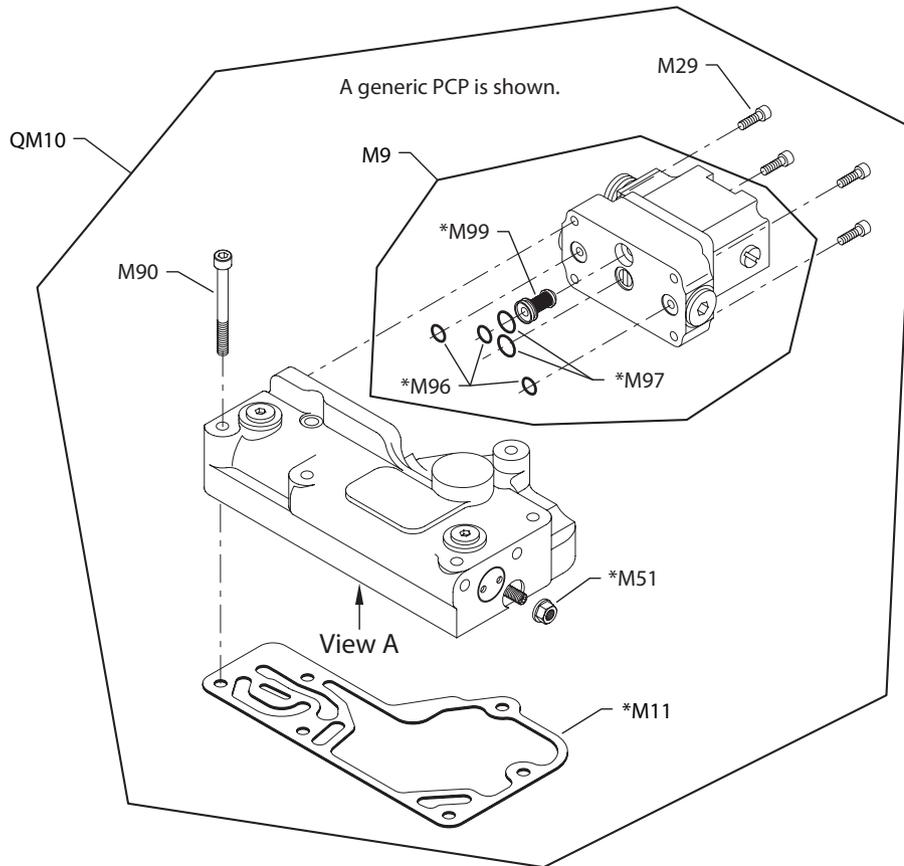

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
HD	M11	96-17		501665	Control gasket	1
	M14	96-17		11070307	Feedback link	1
	M51	96-17		9003509-0008	Seal nut	1
	M90	96-17		692889 (9007314-0611)	Screw	6
	QM10	96-17		8510164	HDC2 kit, 6-18 bar	1
	QM210	96-17		11096265	Control seal kit	1
	HF	M11	96-17		8801241	Control gasket (SB-1999-065)
M14		96-17		11070307	Feedback link	1
M51		96-17		9003509-0008	Seal nut	1
M90		96-17		692889 (9007314-0611)	Screw	6
QM10		96-17		8302M0HF-A	HDC2 kit, 3-11 bar	1
QM210		96-17		11096266	Control seal kit	1
HK		M11	04-49		8801241	Control gasket (SB-1999-065)
	M14	04-49		11070307	Feedback link	1
	M51	04-49		9003509-0008	Seal nut	1
	M90	04-49		692889 (9007314-0611)	Screw	6
	QM10	04-49		8302M0HK-A	HDC2 kit, 1-11 bar	1
	QM210	04-49		11096266	Control seal kit	1
	HM	M11	98-27		8801241	Control gasket (SB-1999-065)
M14		98-27		11070307	Feedback link	1
M51		98-27		9003509-0008	Seal nut	1
M90		98-27		692889 (9007314-0611)	Screw	6
QM10		98-27		8302M0HM-A	HDC kit, 1.1 -6.7 bar	1
QM210		98-27		11096266	Control seal kit	1
HS		M11	98-27		8801241	Control gasket (SB-1999-065)
	M14	98-27		11070307	Feedback link	1
	M51	98-27		9003509-0008	Seal nut	1
	M90	98-27		692889 (9007314-0611)	Screw	6
	QM10	98-27		11013640	HDC kit	1
	QM210	98-27		11096266	Control seal kit	1



Variable displacement pump

(K7, K8, KA & KB)



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 926E

\* = included in control seal kit QM210

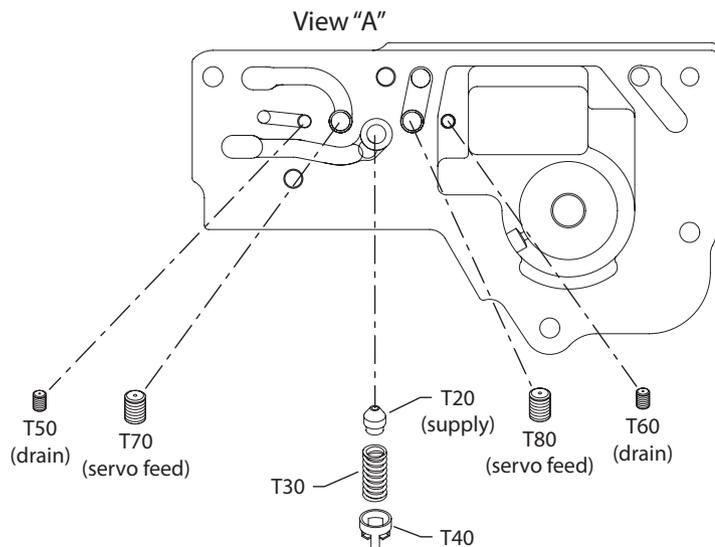
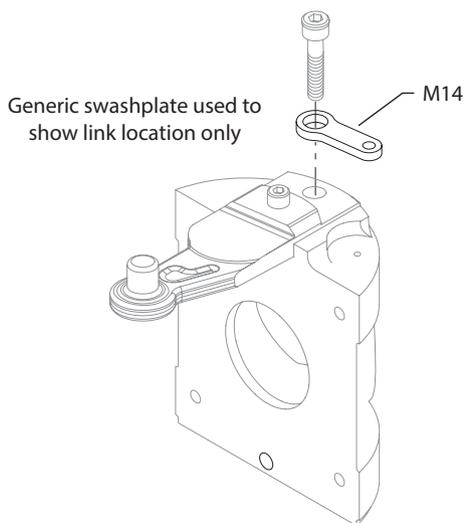
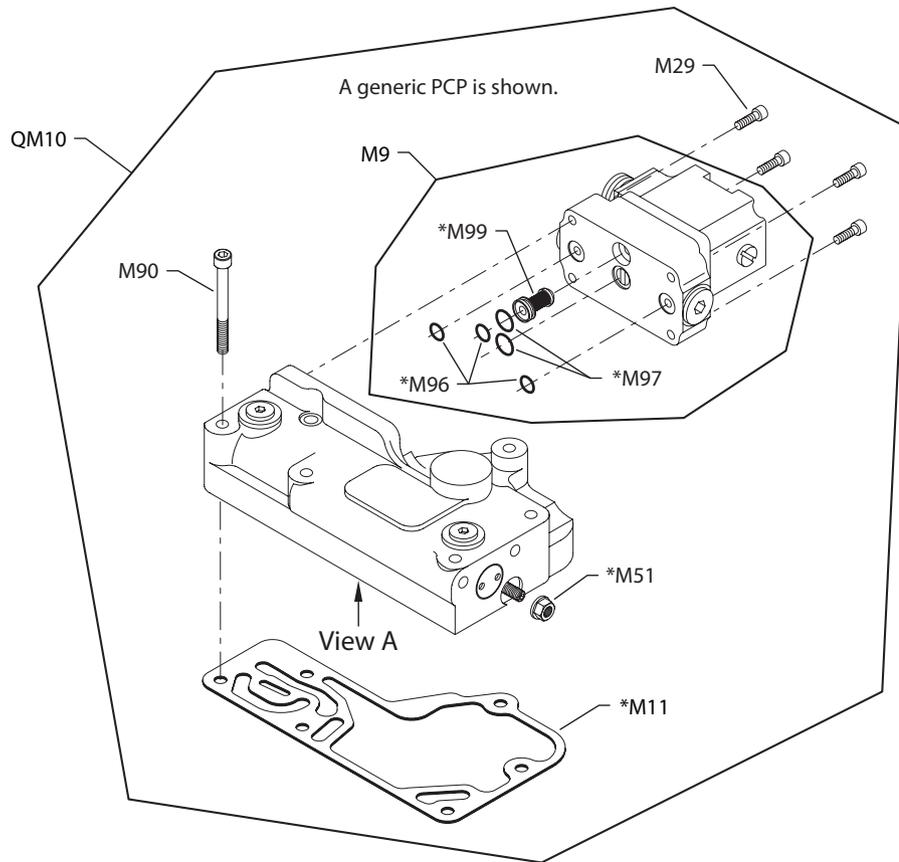

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
K7	M9	13-36		11101116	PCP, MS connector, single coil	1
	M11	13-36		8800923	Control gasket	1
	M14	13-36		11070307	Feedback link	1
	M29	13-36		K07067	Screw	4
	M51	13-36		9003509-0008	Seal nut	1
	M90	13-36		692889 (9007314-0611)	Screw	6
	M96	13-36		011296 (9004105-0120)	O-ring	3
	M97	13-36		784686 (9004105-0130)	O-ring	1
	M99	13-36		K08572	Filter assembly	1
	QM10	13-36		11139996	EDC3 kit, MS connector, single coil	1
	QM210	13-36		11095724	EDCS seal kit	1
K8	M9	14-14		11101106	PCP, MS connector, dual coil	1
	M11	14-14		8800923	Control gasket	1
	M14	14-14		11070307	Feedback link	1
	M29	14-14		K07067	Screw	4
	M51	14-14		9003509-0008	Seal nut	1
	M90	14-14		692889 (9007314-0611)	Screw	6
	M96	14-14		011296 (9004105-0120)	O-ring	3
	M97	14-14		784686 (9004105-0130)	O-ring	1
	M99	14-14		K08572	Filter assembly	1
	QM10	14-14		11140005	EDC kit, MS connector	1
	QM210	14-14		11095724	EDCS seal kit	1
KA	M9	98-42		MCV116G4201	PCP, MS connector, dual coil	1
	M11	98-42		8800923	Control gasket	1
	M14	98-42		11070307	Feedback link	1
	M29	98-42		K07067	Screw	4
	M51	98-42		9003509-0008	Seal nut	1
	M90	98-42		692889 (9007314-0611)	Screw	6
	M96	98-42		011296 (9004105-0120)	O-ring	3
	M97	98-42		784686 (9004105-0130)	O-ring	1
	M99	98-42		K08572	Filter assembly	1
	QM10	98-42		8510119	EDC3 kit, MS connector, dual coil	1
	QM210	98-42		11095724	EDCS seal kit	1
KB	M9	15-23		11164284	PCP, dual coil	1
	M11	15-23		8800923	Control gasket	1
	M14	15-23		11070307	Feedback link	1
	M29	15-23		K07067	Screw	4
	M51	15-23		9003509-0008	Seal nut	1
	M90	15-23		692889 (9007314-0611)	Screw	6
	M96	15-23		011296 (9004105-0120)	O-ring	3
	M97	15-23		784686 (9004105-0130)	O-ring	1
	M99	15-23		K08572	Filter assembly	1
	QM10	15-23		11165650	EDC kit, Deusch connector	1
	QM210	15-23		11095724	EDCS seal kit	1



Variable displacement pump

(KC, KE, KK & KM)



**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.

Possible orifice locations

E100 926E

\* = included in control seal kit QM210

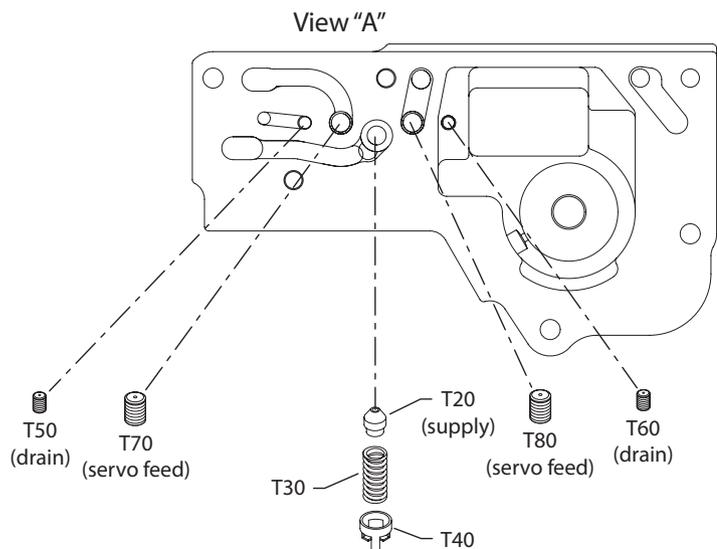
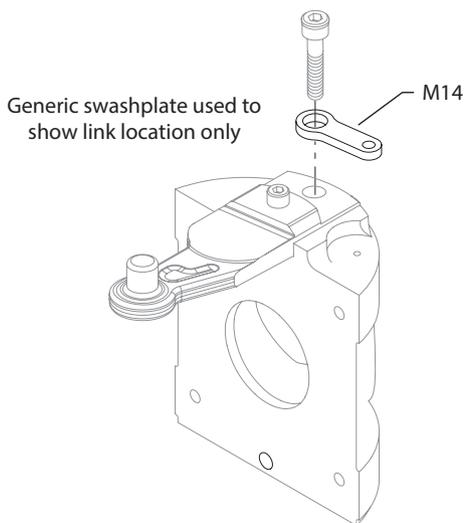
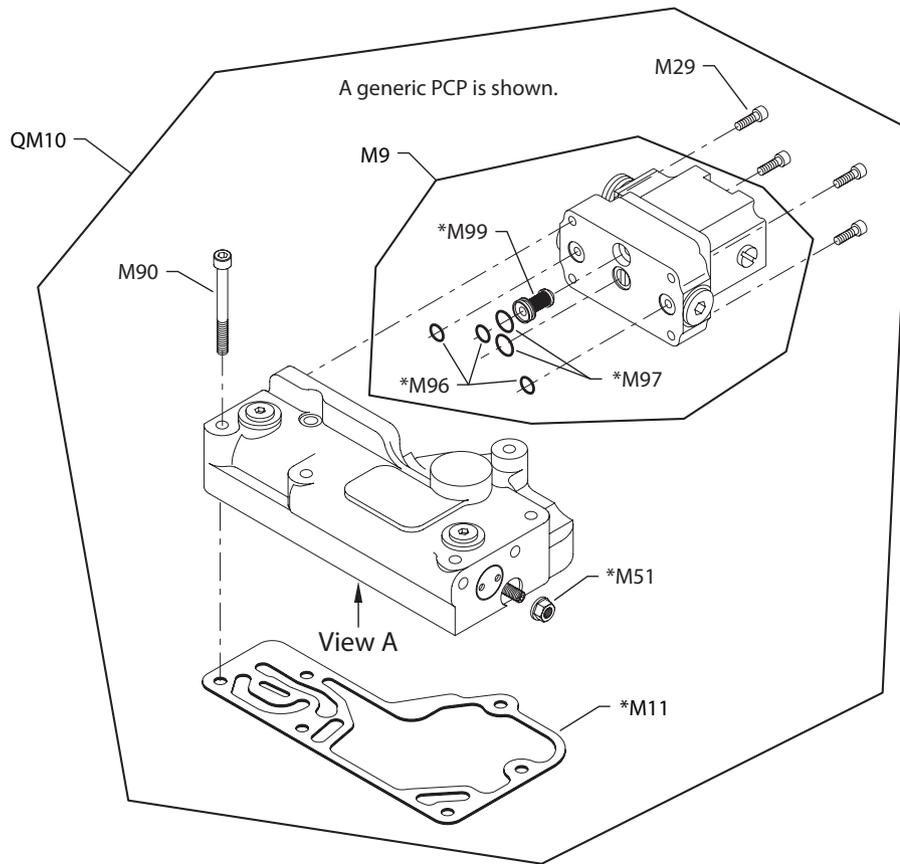

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
KC	M9	00-44	14-38	MCV116C1401	PCP, MS connector, dual coil	1
	M11	00-44	14-38	8800923	Control gasket	1
	M14	00-44	14-38	11070307	Feedback link	1
	M29	00-44	14-38	K07067	Screw	4
	M51	00-44	14-38	9003509-0008	Seal nut	1
	M90	00-44	14-38	692889 (9007314-0611)	Screw	6
	M96	00-44	14-38	011296 (9004105-0120)	O-ring	3
	M97	00-44	14-38	784686 (9004105-0130)	O-ring	1
	M99	00-44	14-38	K08572	Filter assembly	1
	QM10	00-44	14-38	11018293	EDC kit, MS connector	1
	QM210	00-44	14-38	11095724	EDCS seal kit	1
KE	M9	03-27		MCV116F3118	PCP, Deutsch connector	1
	M11	03-27		8800923	Control gasket	1
	M14	03-27		11070307	Feedback link	1
	M29	03-27		K07067	Screw	4
	M51	03-27		9003509-0008	Seal nut	1
	M90	03-27		692889 (9007314-0611)	Screw	6
	M96	03-27		011296 (9004105-0120)	O-ring	3
	M97	03-27		784686 (9004105-0130)	O-ring	1
	M99	03-27		K08572	Filter assembly	1
	QM10	03-27		8510324	EDC kit, Deutsch connector	1
	QM210	03-27		11095724	EDCS seal kit	1
KK	M9	03-27		MCV116G4211	PCP, Deutsch connector	1
	M11	03-27		8800923	Control gasket	1
	M14	03-27		11070307	Feedback link	1
	M29	03-27		K07067	Screw	4
	M51	03-27		9003509-0008	Seal nut	1
	M90	03-27		692889 (9007314-0611)	Screw	6
	M96	03-27		011296 (9004105-0120)	O-ring	3
	M97	03-27		784686 (9004105-0130)	O-ring	1
	M99	00-44		K08572	Filter assembly	1
	QM10	03-27		11072974	EDC kit, Deutsch connector	1
	QM210	03-27		11095724	EDCS seal kit	1
KM	M9	98-42		MCV116G4213	PCP, 4-wire Metripak connector	1
	M11	98-42		8800923	Control gasket	1
	M14	98-42		11070307	Feedback link	1
	M29	98-42		K07067	Screw	4
	M51	98-42		9003509-0008	Seal nut	1
	M90	98-42		692889 (9007314-0611)	Screw	6
	M96	98-42		011296 (9004105-0120)	O-ring	3
	M97	98-42		784686 (9004105-0130)	O-ring	1
	M99	98-42		K08572	Filter assembly	1
	QM10	98-42		8510242	EDC kit, 4-wire Metripak connector	1
	QM210	98-42		11095724	EDCS seal kit	1



Variable displacement pump

(KN, KP & KT)



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 926E

\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

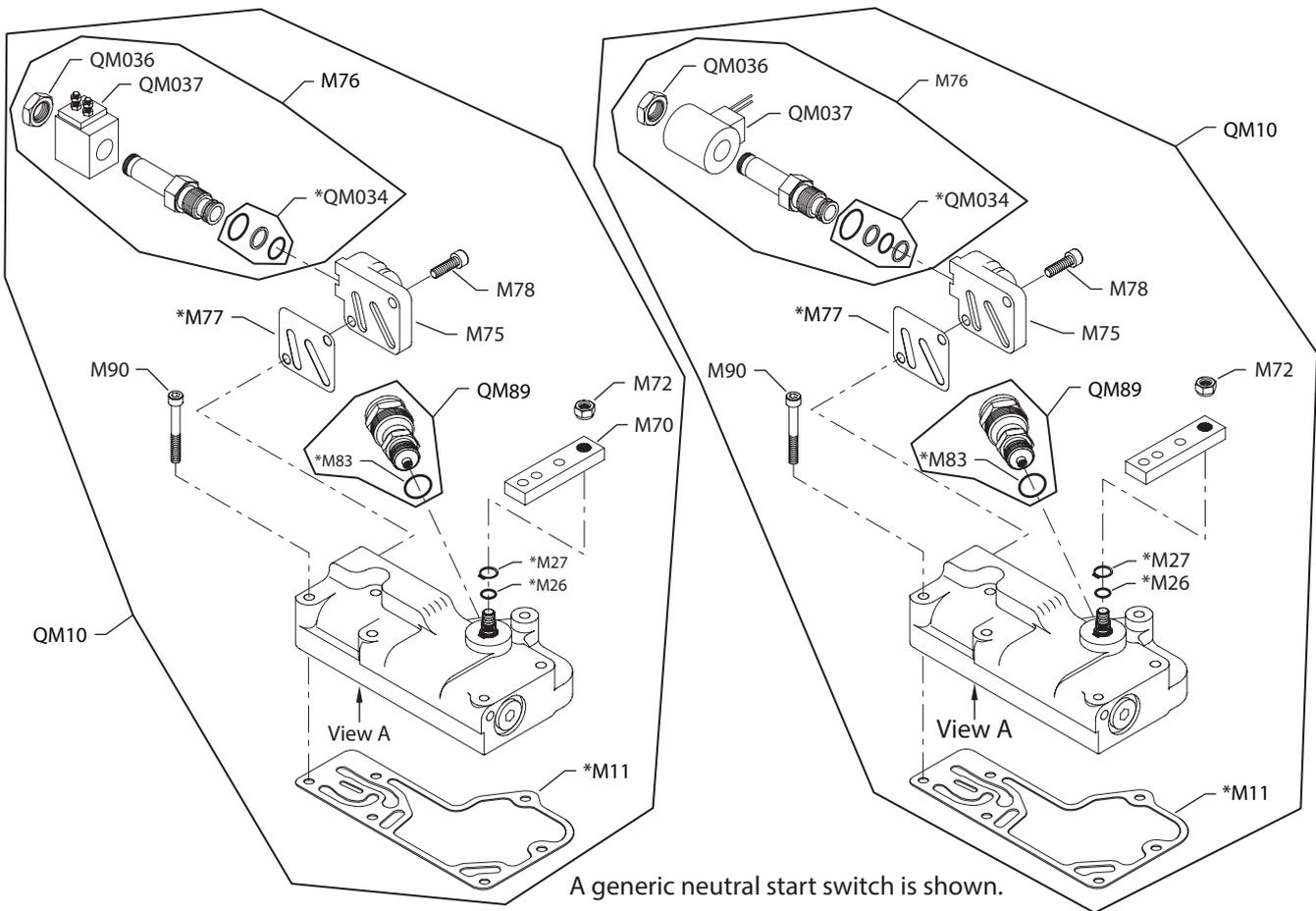
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
KN	M9	06-13		MCV116A3501	PCP, MS connector	1
	M11	06-13		8800923	Control gasket	1
	M14	06-13		11070307	Feedback link	1
	M29	06-13		K07067	Screw	4
	M51	06-13		9003509-0008	Seal nut	1
	M90	06-13		692889 (9007314-0611)	Screw	6
	M96	06-13		011296 (9004105-0120)	O-ring	3
	M97	06-13		784686 (9004105-0130)	O-ring	1
	M99	06-13		K08572	Filter assembly	1
	QM10	06-13		11013631	EDC kit, MS connector	1
	QM210	06-13		11095724	EDCS seal kit	1
	KP	M9	95-26		MCV116G4204	PCP, Weather-pak connector, dual
M11		95-26		8800923	Control gasket	1
M14		95-26		11070307	Feedback link	1
M29		95-26		K07067	Screw	4
M51		95-26		9003509-0008	Seal nut	1
M90		95-26		692889 (9007314-0611)	Screw	6
M96		95-26		011296 (9004105-0120)	O-ring	3
M97		95-26		784686 (9004105-0130)	O-ring	1
M99		95-26		K08572	Filter assembly	1
QM10		95-26		8510120	EDC kit, Weather-pak connector, dual	1
QM210		95-26		11095724	EDCS seal kit	1
KT		M9	06-19		MCV116G4214	PCP, Duetsch connector, dual, 4-pin
	M11	06-19		8800923	Control gasket	1
	M14	06-19		11070307	Feedback link	1
	M29	06-19		K07067	Screw	4
	M51	06-19		9003509-0008	Seal nut	1
	M90	06-19		692889 (9007314-0611)	Screw	6
	M96	06-19		011296 (9004105-0120)	O-ring	3
	M97	06-19		784686 (9004105-0130)	O-ring	1
	M99	06-19		K08572	Filter assembly	1
	QM10	06-19		11051111	EDC kit, Duetsch connector, dual, 4-pin	1
	QM210	06-19		11095724	EDCS seal kit	1



Variable displacement pump

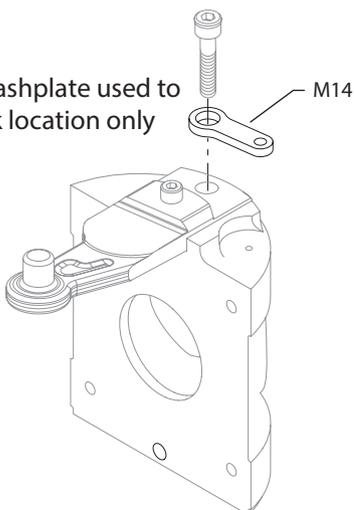
(LD)

(LP)

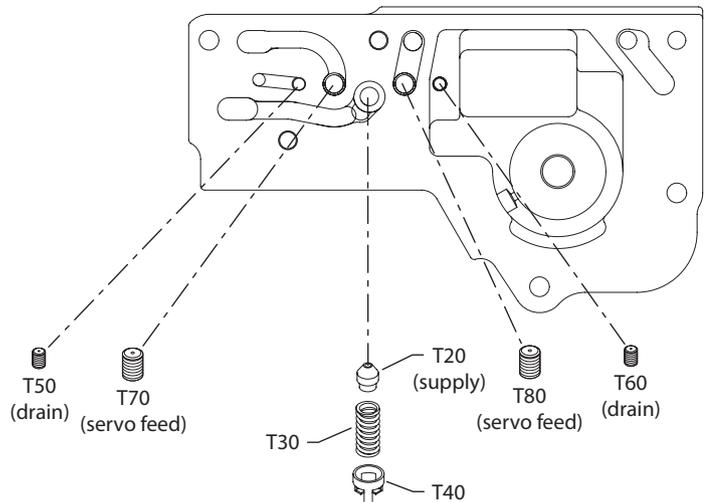


A generic neutral start switch is shown.

Generic swashplate used to show link location only



View "A"



Possible orifice locations

E100 927E

\* = included in control seal kit QM210

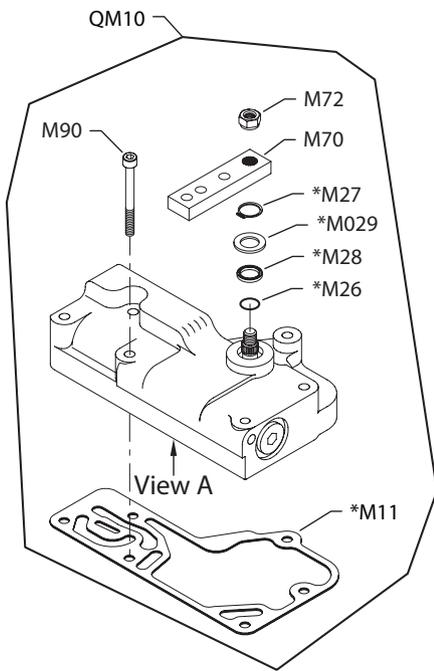

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
LD	M11	98-49	12-50	8800923	Control gasket	1	
	M14	98-49	12-50	11070307	Feedback link	1	
	M26	98-49	12-50	144725 (9004105-0110)	O-ring	1	
	M27	98-49	12-50	9006300-0044	Retaining ring	1	
	M70	98-49	12-50	9800916	Control handle	1	
	M72	98-49	12-50	040642 (9003513-0800)	Nut	1	
	M75	98-49	12-50	505022	Control manifold	1	
	M76	98-49	12-50	326108 (9700886)	Solenoid valve, 12 volt, 2-pole	1	
	M77	98-49	12-50	8800882	Manifold gasket	1	
	M78	98-49	12-50	693341 (9007314-0606)	Screw	2	
	M83	98-49	12-50	009670 (9004201-5000)	O-ring	1	
	M90	98-49	12-50	692889 (9007314-0611)	Screw	6	
	QM10	98-49	12-50	8510231	MDC kit, w/neutral start switch, 2-pole 12v solenoid	1	
	QM89	98-49	12-50	8510027	Neutral start switch kit, high force	1	
	QM034	98-49	12-50	11099649	Valve seal kit	1	
	QM036	98-49	12-50	11100383	Nut	1	
	QM037	98-49	12-50	11100385	Coil, 12 volt	1	
	QM210	98-49	12-50	11100031	Control seal kit	1	
	LP	M11	04-50		8800923	Control gasket	1
		M14	04-50		11070307	Feedback link	1
M26		04-50		144725 (9004105-0110)	O-ring	1	
M27		04-50		9006300-0044	Retaining ring	1	
M70		04-50		9800916	Control handle	1	
M72		04-50		040642 (9003513-0800)	Nut	1	
M75		04-50		505022	Control manifold	1	
M76		04-50		521242	Solenoid valve, 12 volt, 2-pole	1	
M77		04-50		8800882	Manifold gasket	1	
M78		04-50		693341 (9007314-0606)	Screw	2	
M83		98-49		001131 (9004201-5000)	O-ring	1	
M90		04-50		692889 (9007314-0611)	Screw	6	
QM10		04-50		8510375	MDC kit, w/neutral start switch, 2-pole 12v solenoid	1	
QM89		04-50		8510316	Neutral start switch kit, high force, Weather-pack	1	
QM034		04-50		11099649	Valve seal kit	1	
QM036		04-50		11100383	Nut	1	
QM037		04-50		11100386	Coil, 12 volt, Weather-pack	1	
QM210		04-50		11099998	Control seal kit	1	

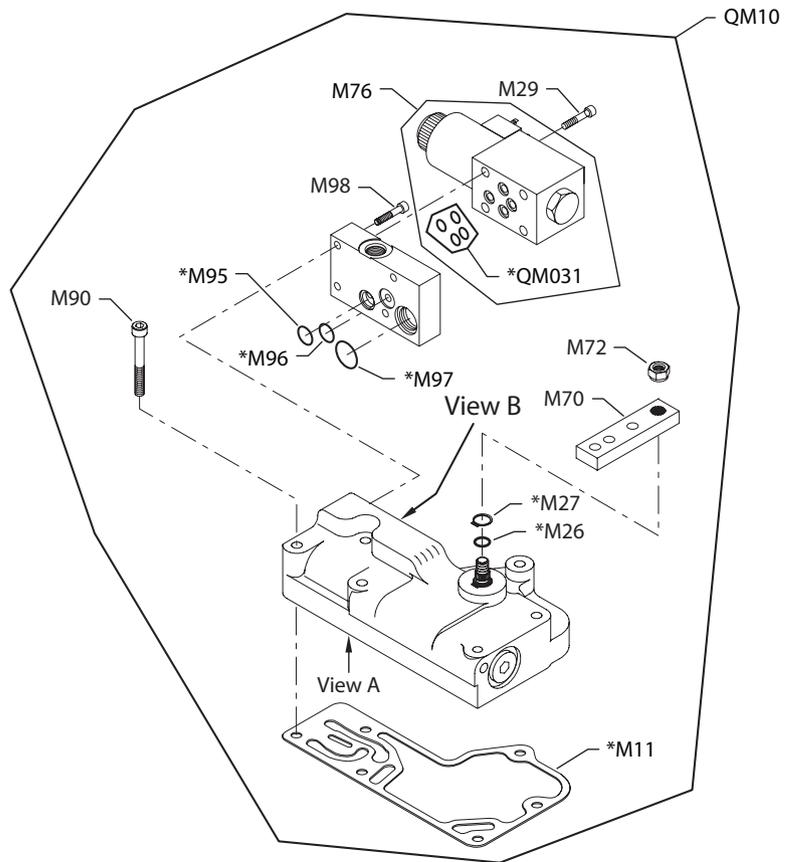


Variable displacement pump

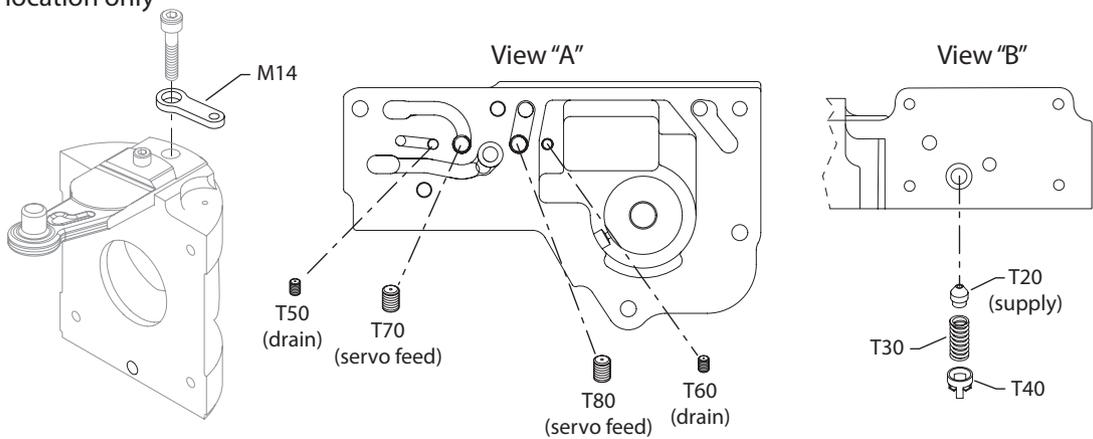
(LW)



(M8)



Generic swashplate used to show link location only



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 838E

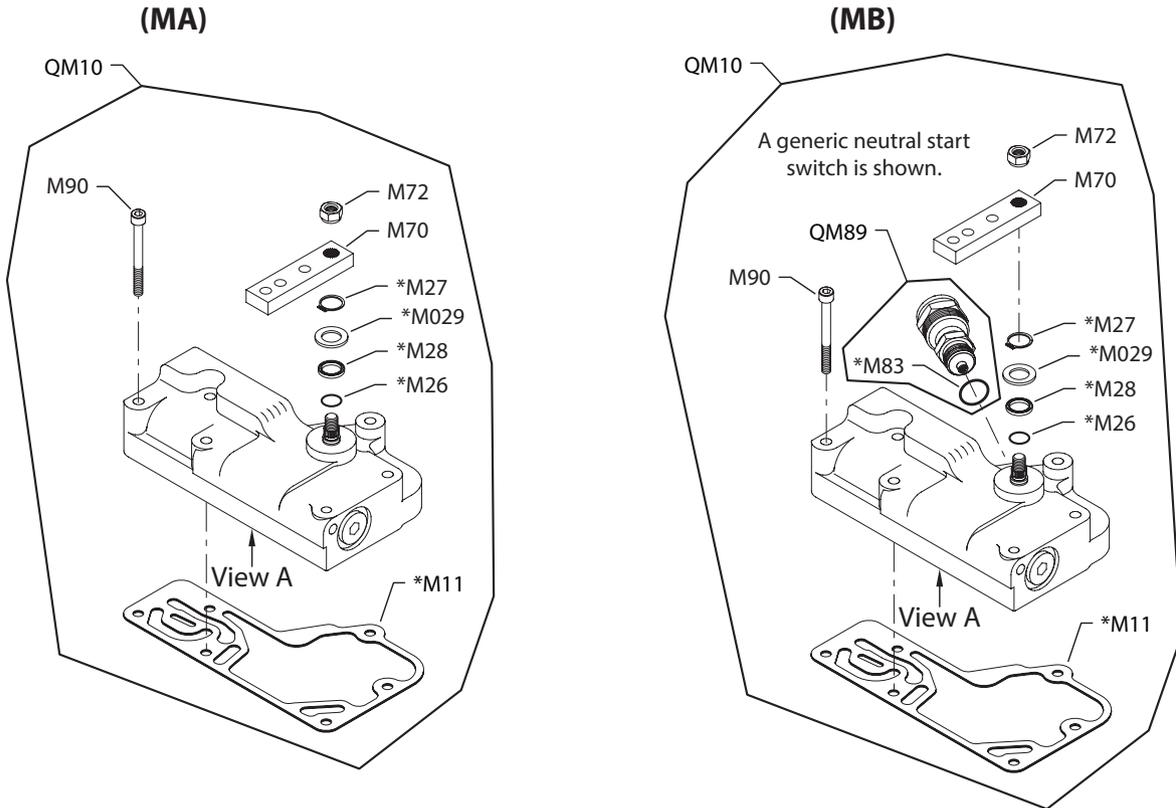
\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

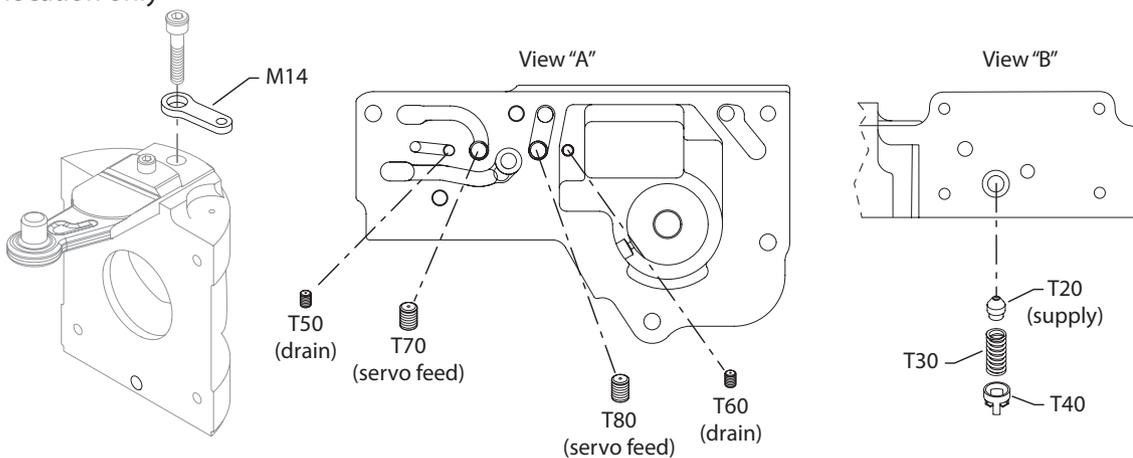
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
LW	M11	12-07		8800923	Control gasket	1
	M14	12-07		11070307	Feedback link	1
	M26	12-07		144725 (9004105-0110)	O-ring	1
	M27	12-07		042507	Retaining ring	1
	M28	12-07		510690	Seal	1
	M029	12-07		512047	Washer	1
	M70	12-07		9800916	Control handle	1
	M72	12-07		040642 (9003513-0800)	Nut	1
	M90	12-07		692889 (9007314-0611)	Screw	6
	QM10	12-07		11110671	MDC kit	1
	QM210	12-07		11110668	Control seal kit	1
	M8	M11	97-24		8800923	Control gasket
M14		97-24		11070307	Feedback link	1
M26		97-24		144725 (9004105-0110)	O-ring	1
M27		97-24		9006300-0044	Retaining ring	1
M29		97-24		035592	Screw	4
M70		97-24		9800916	Control handle	1
M72		97-24		040642 (9003513-0800)	Nut	1
M76		97-24		519369	Solenoid valve	1
M90		97-24		692889 (9007314-0611)	Screw	6
M95		97-24		056713 (9004105-0140)	O-ring	1
M96		97-24		056713 (9004105-0140)	O-ring	1
M97		97-24		544742 (9004105-0190)	O-ring	1
M98		97-24		067686	Screw	4
QM10		97-24		11086407	Control kit, 2-position solenoid, 24 volt	1
QM031		97-24		11099647	Seal kit	1
QM210		97-24		11099978	Control seal kit	1



Variable displacement pump



Generic swashplate used to show link location only



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 839E

\* = included in control seal kit QM210

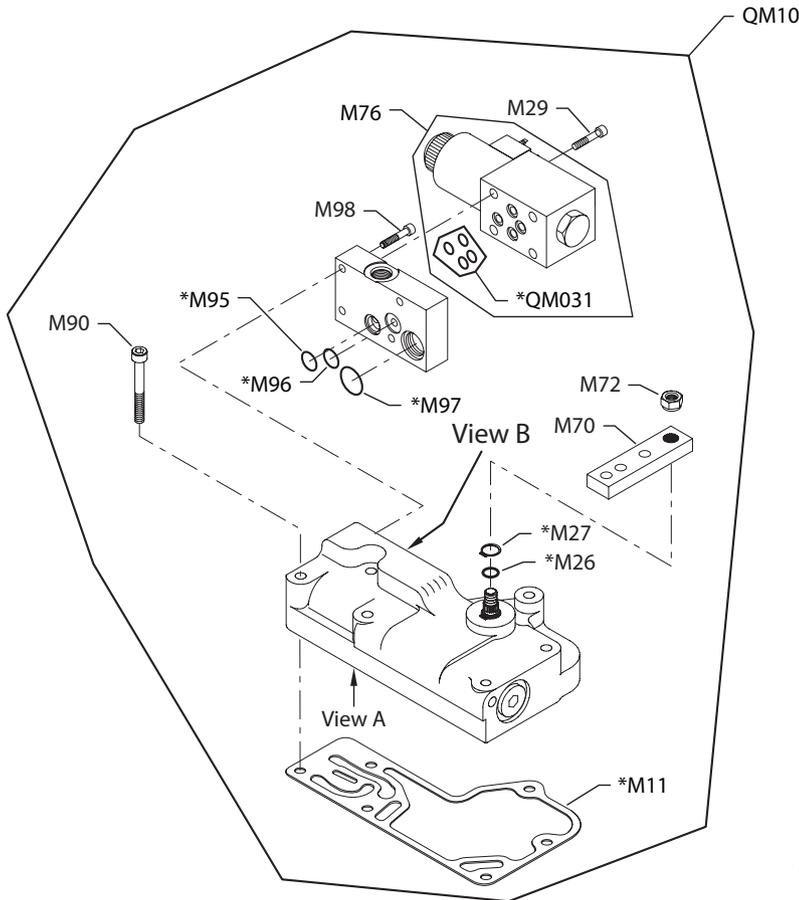

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
MA	M11	92-19		8800923	Control gasket	1	
	M14	92-19		11070307	Feedback link	1	
	M26	92-19		144725 (9004105-0110)	O-ring	1	
	M27	14-44		042507	Retaining ring	1	
	M27	92-19	14-43	9006300-0044	Retaining ring	1	
	M28	14-44		510690	Shaft seal	1	
	M029	14-44		512047	Washer	1	
	M70	92-19		9800916	Control handle	1	
	M72	92-19		040642 (9003513-0800)	Nut	1	
	M90	92-19		692889 (9007314-0611)	Screw	6	
	QM10	92-19		8302M0MA-B	MDC kit	1	
	QM210	92-19		11096274	Control seal kit	1	
	MB	M11	92-19		8800923	Control gasket	1
		M14	92-19		11070307	Feedback link	1
M26		92-19		144725 (9004105-0110)	O-ring	1	
M27		14-44		042507	Retaining ring	1	
M27		92-19	14-43	9006300-0044	Retaining ring	1	
M28		14-44		510690	Shaft seal	1	
M029		14-44		512047	Washer	1	
M70		92-19		9800916	Control handle	1	
M71		92-19		9009660-3100	Toothlock washer	1	
M72		92-19		040642 (9003513-0800)	Nut	1	
M83		92-19		001131 (9004201-5000)	O-ring	1	
M90		92-19		692889 (9007314-0611)	Screw	6	
QM10		92-19		8302M0MB-B	MDC kit with neutral start switch	1	
QM89		92-19		80020540	Neutral start switch, high force	1	
QM210		92-19		11096274	Control seal kit	1	

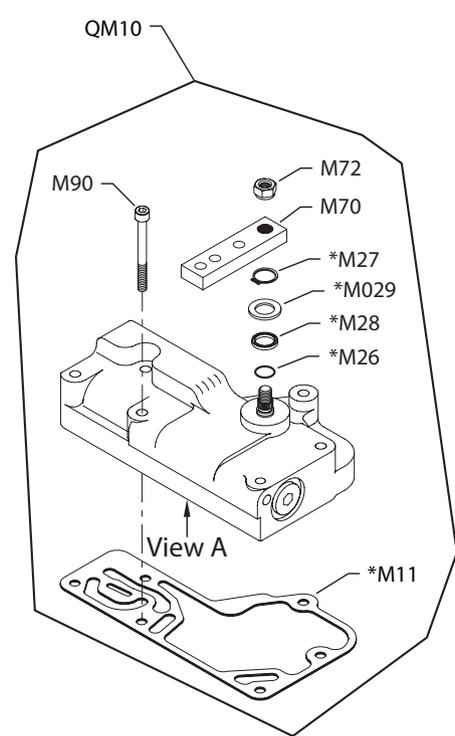


Variable displacement pump

(ME)

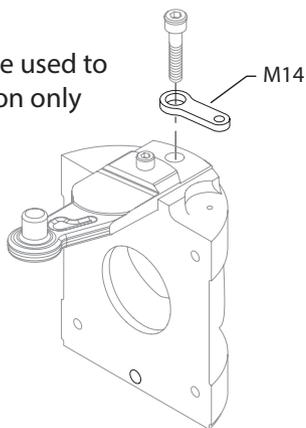


(MH)

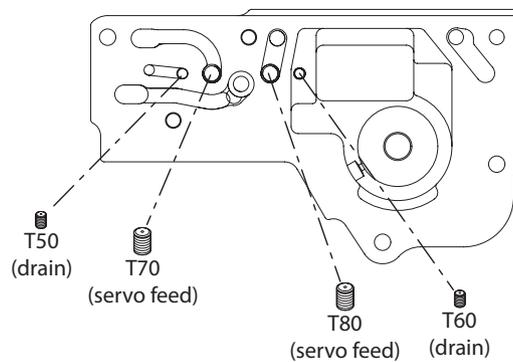


\* = included in control seal kit QM210

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.

E101 840E

\* = included in control seal kit QM210

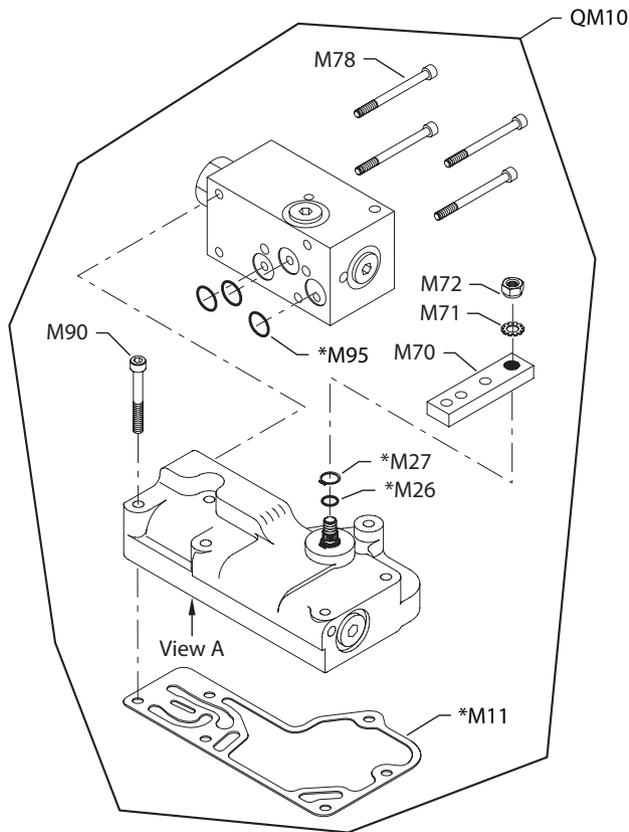

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
ME	M11	96-39		8800923	Control gasket	1
	M14	96-39		11070307	Feedback link	1
	M26	96-39		144725 (9004105-0110)	O-ring	1
	M27	96-39		9006300-0044	Retaining ring	1
	M29	96-39		035592	Screw	4
	M70	96-39		9800916	Control handle	1
	M72	96-39		040642 (9003513-0800)	Nut	1
	M76	96-39		519357	Solenoid valve, 12 volt	1
	M90	96-39		692889 (9007314-0611)	Screw	6
	M95	96-39		144725 (9004105-0110)	O-ring	1
	M96	96-39		056713 (9004105-0140)	O-ring	1
	M97	96-39		544742 (9004105-0190)	O-ring	1
	M98	96-39		067686	Screw	4
	QM10	96-39		11086406	Control kit, 2-position solenoid, 12 volt	1
	QM031	96-39		11099647	Seal kit	1
	QM210	96-39		11099978	Control seal kit	1
	MH	M11	04-49		8800923	Control gasket
M14		04-49		11070307	Feedback link	1
M26		04-49		144725 (9004105-0110)	O-ring	1
M27		14-44		042507	Retaining ring	1
M27		04-49	14-43	9006300-0044	Retaining ring	1
M28		14-44		510690	Shaft seal	1
M029		14-44		512047	Washer	1
M70		04-49		9800916	Control handle	1
M72		04-49		040642 (9003513-0800)	Nut	1
M90		04-49		692889 (9007314-0611)	Screw	6
QM10		04-49		11086361	MDC kit	1
QM210		04-49		11096274	Control seal kit	1

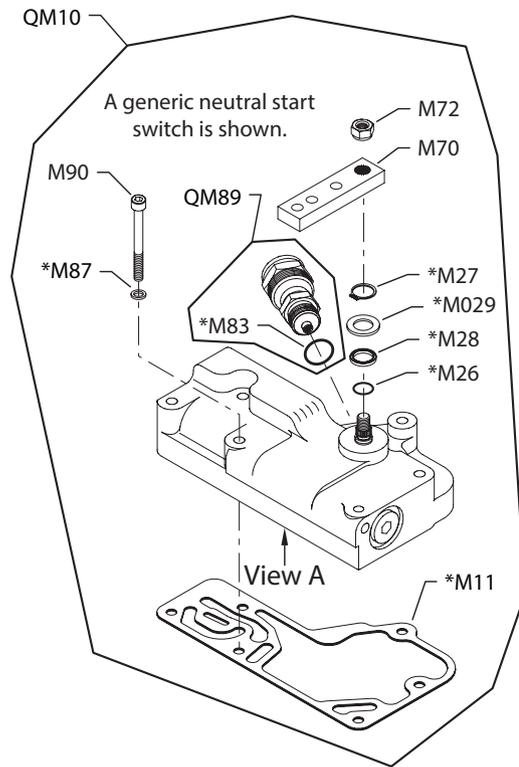


Variable displacement pump

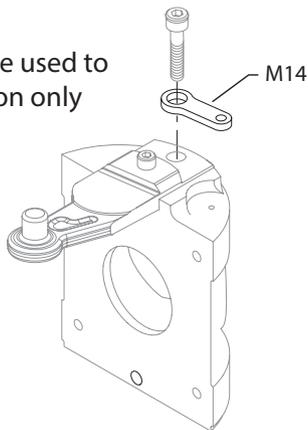
(M0)



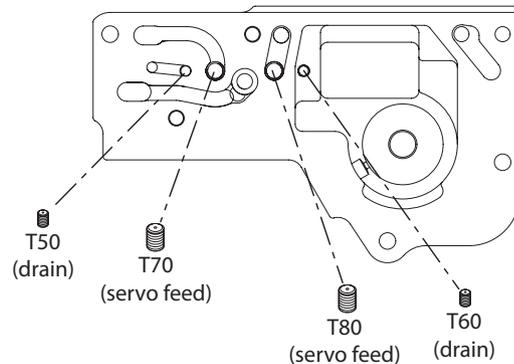
(MS & MV)



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.

E101 816E

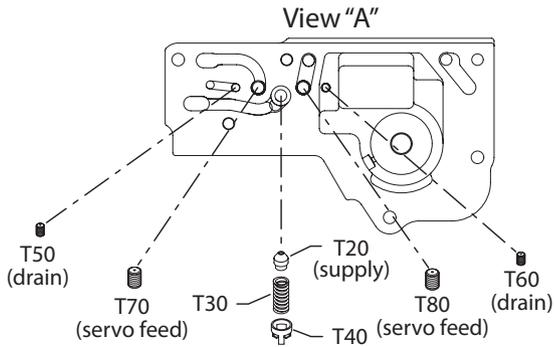
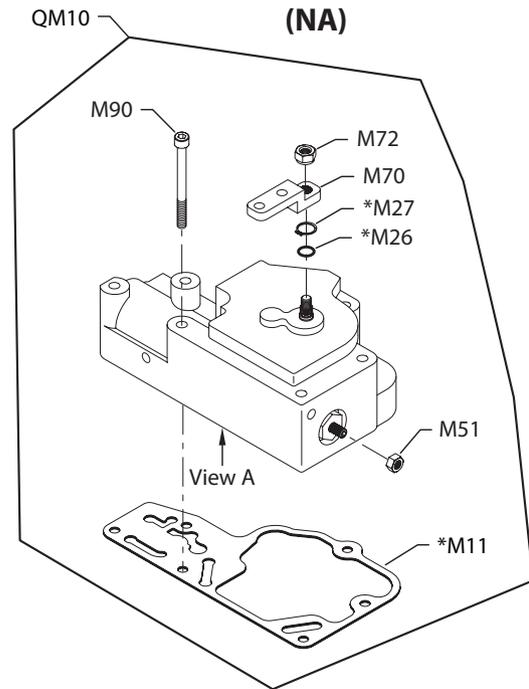
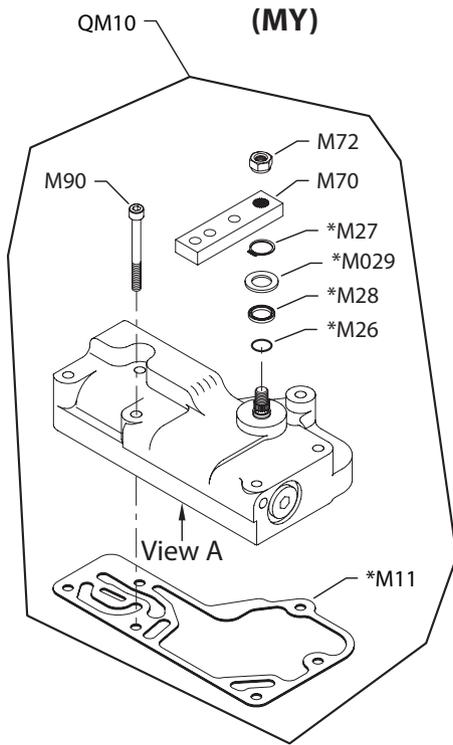
\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

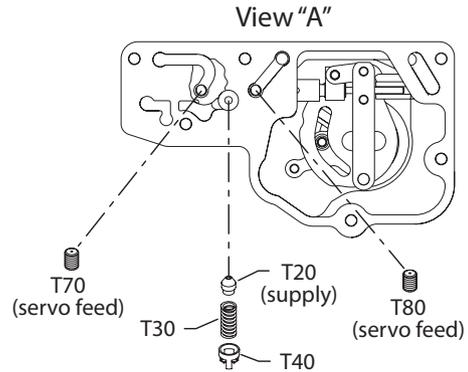
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
M0	M11	96-24		8800923	Control gasket	1	
	M14	96-24		11070307	Feedback link	1	
	M26	96-24		144725 (9004105-0110)	O-ring	1	
	M27	96-24		9006300-0044	Retaining ring	1	
	M70	96-24		9800916	Control handle	1	
	M72	96-24		040642 (9003513-0800)	Nut	1	
	M78	96-24		090159	Screw	4	
	M90	96-24		692889 (9007314-0611)	Screw	6	
	M95	96-24		011304 (9004104-0140)	O-ring	3	
	QM10	96-24		11086426	MDC kit	1	
	QM210	96-24		11099981	Control seal kit	1	
	MS	M11	00-01		8800923	Control gasket	1
M14		00-01		11070307	Feedback link	1	
M26		00-01		144725 (9004105-0110)	O-ring	1	
M27		14-44		042507	Retaining ring	1	
M27		00-01	14-43	9006300-0044	Retaining ring	1	
M28		14-44		510690	Shaft seal	1	
M029		14-44		512047	Washer	1	
M70		00-01		9800916	Control handle	1	
M72		00-01		040642 (9003513-0800)	Nut	1	
M83		00-01		001131 (9004201-5000)	O-ring	1	
M90		00-01		692889 (9007314-0611)	Screw	6	
QM10		00-01		11086409	MDC kit, with neutral start switch	1	
QM89		00-01		8510027	Neutral start switch, high force	1	
QM210		00-01		11096274	Control seal kit	1	
MV		M11	94-24		8800923	Control gasket	1
		M14	94-24		11070307	Feedback link	1
		M26	94-24		144725 (9004105-0110)	O-ring	1
	M27	14-44		042507	Retaining ring	1	
	M27	94-24	14-43	9006300-0044	Retaining ring	1	
	M28	14-44		510690	Shaft seal	1	
	M029	14-44		512047	Washer	1	
	M70	94-24		9800916	Control handle	1	
	M72	94-24		040642 (9003513-0800)	Nut	1	
	M83	94-24		001131 (9004201-5000)	O-ring	1	
	M90	94-24		692889 (9007314-0611)	Screw	6	
	QM10	94-24		8510267	MDC kit, with neutral start switch	1	
	QM89	94-24		8510170	Neutral start switch kit, high force	1	
	QM210	94-24		11096274	Control seal kit	1	



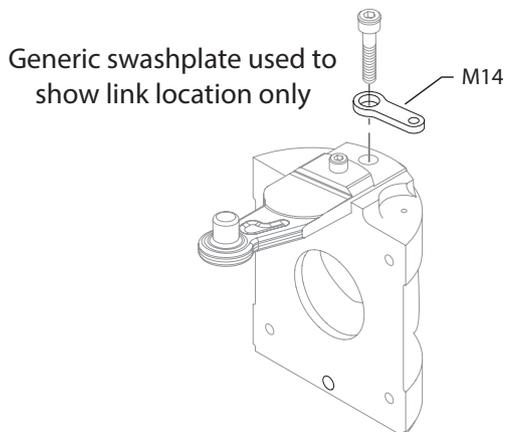
Variable displacement pump



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.

E100 928E

\* = included in control seal kit QM210

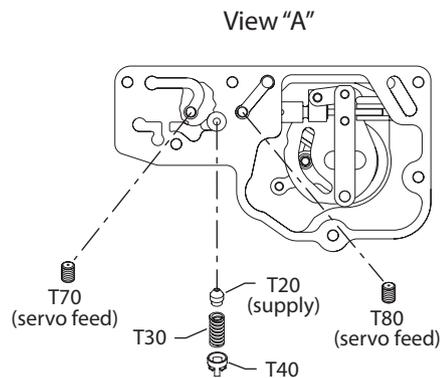
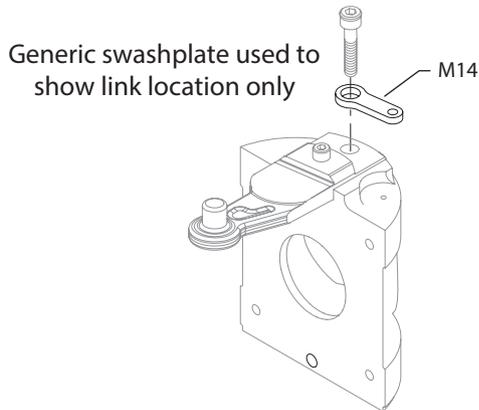
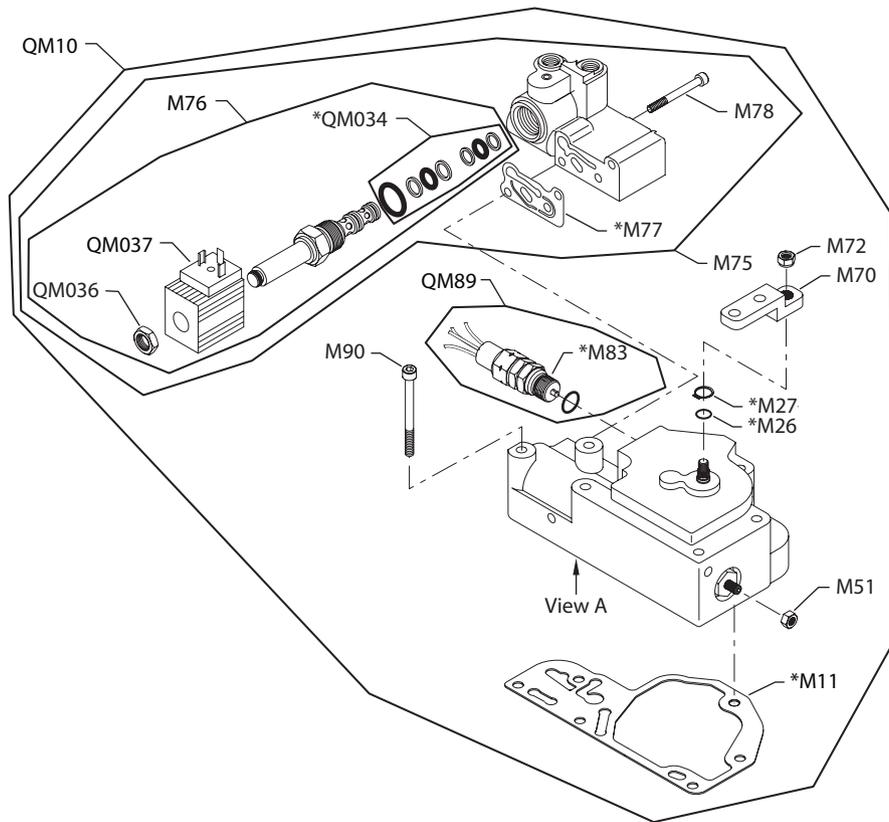

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
MY	M11	94-24		8800923	Control gasket	1	
	M14	94-24		11070307	Feedback link	1	
	M26	94-24		144725 (9004105-0110)	O-ring	1	
	M27	15-05		042507	Retaining ring	1	
	M27	94-24	15-04	9006300-0044	Retaining ring	1	
	M28	15-05		510690	Shaft seal	1	
	M029	15-05		512047	Washer	1	
	M70	94-24		9800916	Control handle	1	
	M72	94-24		040642 (9003513-0800)	Nut	1	
	M90	94-24		692889 (9007314-0611)	Screw	6	
	QM10	94-24		11086408	MDC kit	1	
	QM210	94-24		11096274	Control seal kit	1	
	NA	M11	91-37		504733	Control gasket	1
		M14	91-37		11070307	Feedback link	1
M26		91-37		144725 (9004105-0110)	O-ring	1	
M27		91-37		9006300-0044	Retaining ring	1	
M51		91-37		345462	Nut	1	
M70		91-37		769075 (8800691)	Control handle	1	
M72		91-37		040642 (9003513-0800)	Nut	1	
M90		91-37		9007314-0614	Screw	6	
QM10		91-37		8302M0NA-A	MDC kit	1	
QM210		91-37		11096273	Control seal kit	1	



Variable displacement pump

(NU)



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 849E

\* = included in control seal kit QM210

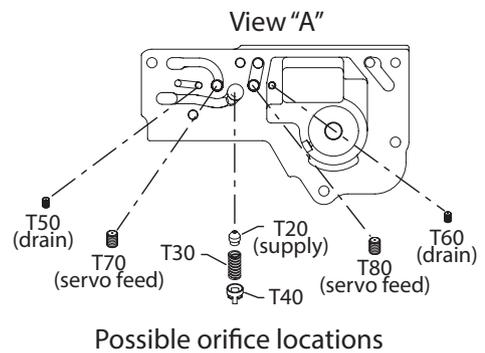
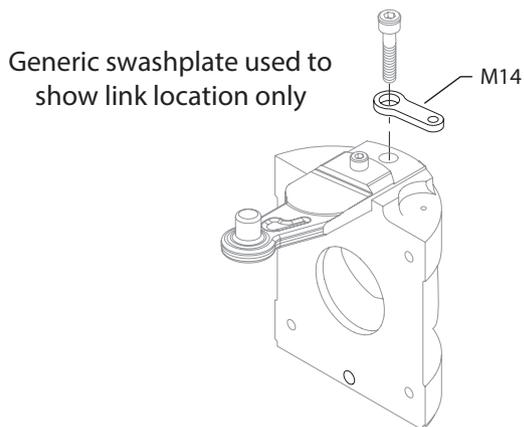
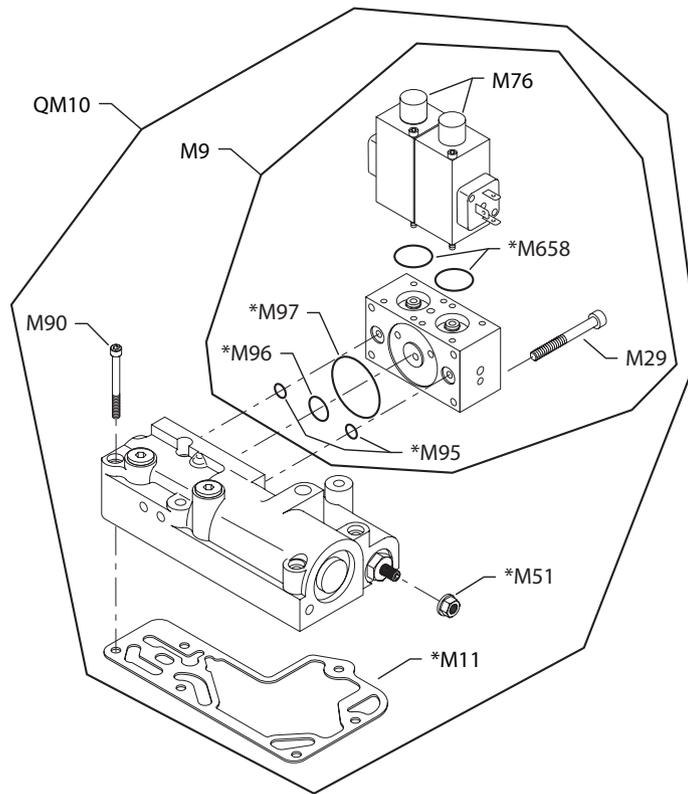

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
NU	M11	96-19		504733	Control gasket	1
	M14	96-19		11070307	Feedback link	1
	M26	96-19		144725 (9004105-0110)	O-ring	1
	M27	96-19		9006300-0044	Retaining ring	1
	M51	96-19		345462	Nut	1
	M70	96-19		769075 (8800691)	Control handle	1
	M71	96-19		9009660-3100	Toothlock washer	1
	M72	96-19		040642 (9003513-0800)	Nut	1
	M75	96-19		500147	Manifold assembly	1
	M76	96-19		8700100	Solenoid valve	1
	M77	96-19		500260	Gasket	1
	M78	96-19		692889 (9007314-0611)	Screw	2
	M83	96-19		784686	O-ring	1
	M90	96-19		9007314-0614	Screw	6
	QM10	96-19		11086410	MDC kit, 12 volt	1
	QM89	96-19		11087773	Neutral start switch kit	1
	QM034	96-19		11100391	Valve seal kit	1
	QM036	96-19		11100383	Nut	1
	QM037	96-19		11100389	Coil, 12 volt	1
	QM210	96-19		11100415	Control seal kit	1



Variable displacement pump

(PA & PB)



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 842E

\* = included in control seal kit QM210

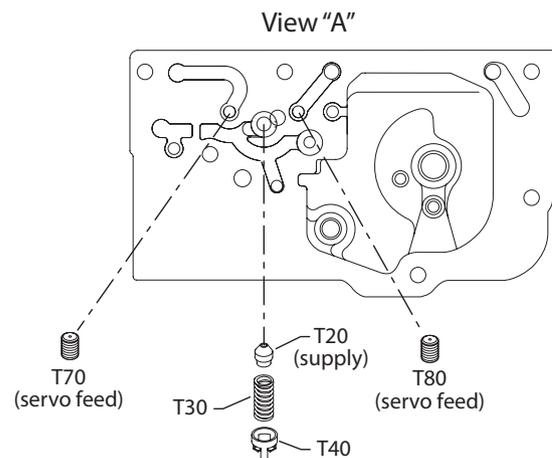
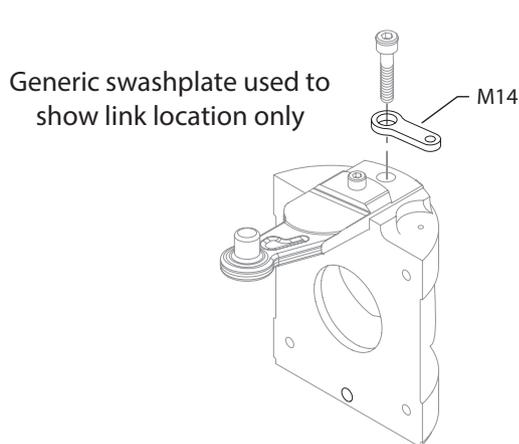
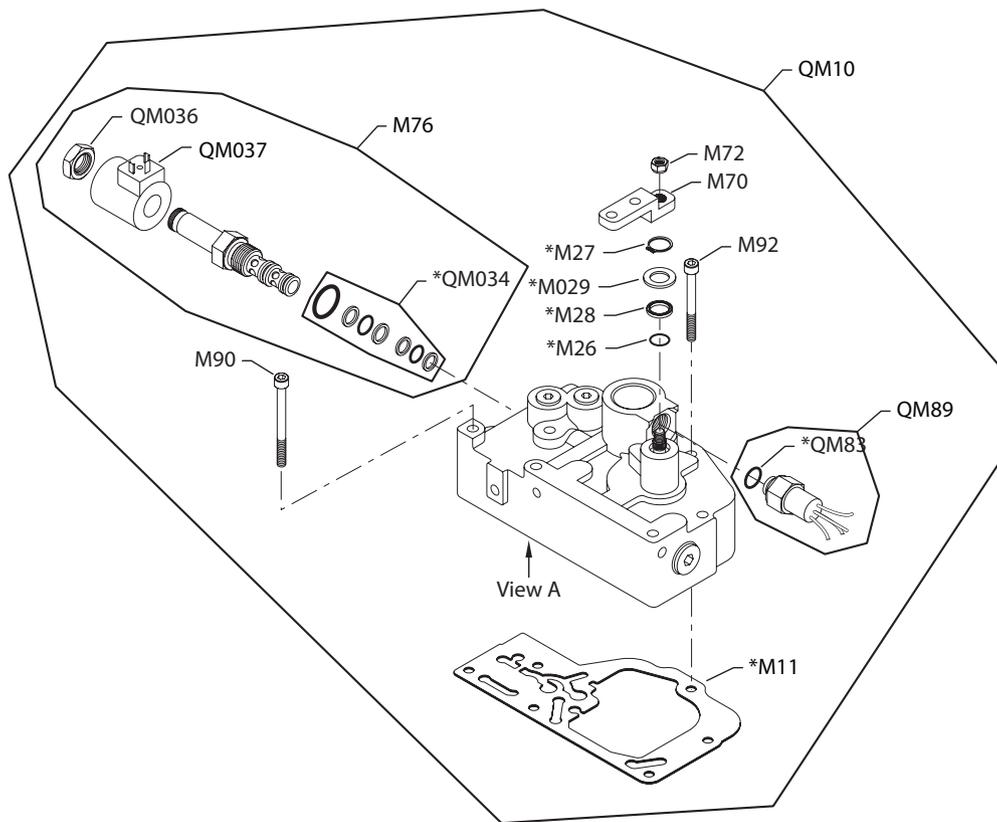

**Variable displacement pump**
**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
PA	M9	08-44		782037	PDC, 12 volt	1	
	M11	08-44		8801241	Gasket	1	
	M14	08-44		11070307	Feedback link	1	
	M29	08-44		035592	Screw	4	
	M51	08-44		9003509-0008	Seal nut	1	
	M76	08-44		11001795	Solenoid, 12 volt	2	
	M90	08-44		692889 (9007314-0611)	Screw	6	
	M95	08-44		011296 (9004105-0120)	O-ring	2	
	M96	08-44		688721 (9004104-0170)	O-ring	1	
	M97	08-44		314534 (9004104-0310)	O-ring	1	
	M658	08-44		635938 (9004100-0210)	O-ring	2	
	QM10	08-44		11086411	Control kit	1	
	QM210	08-44		11096251	Control seal kit	1	
	PB	M9	04-49		782045	PDC, 24 volt	1
		M11	04-49		8801241	Gasket	1
M14		04-49		11070307	Feedback link	1	
M29		04-49		035592	Screw	4	
M51		04-49		9003509-0008	Seal nut	1	
M76		04-49		11001794	Solenoid, 24 volt	2	
M90		04-49		692889 (9007314-0611)	Screw	6	
M95		04-49		011296 (9004105-0120)	O-ring	2	
M96		04-49		688721 (9004104-0170)	O-ring	1	
M97		04-49		314534 (9004104-0310)	O-ring	1	
M658		04-49		635938 (9004100-0210)	O-ring	2	
QM10		04-49		11034094	Control kit	1	
QM210		04-49		11096251	Control seal kit	1	



Variable displacement pump

(RS & RU)



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 843E

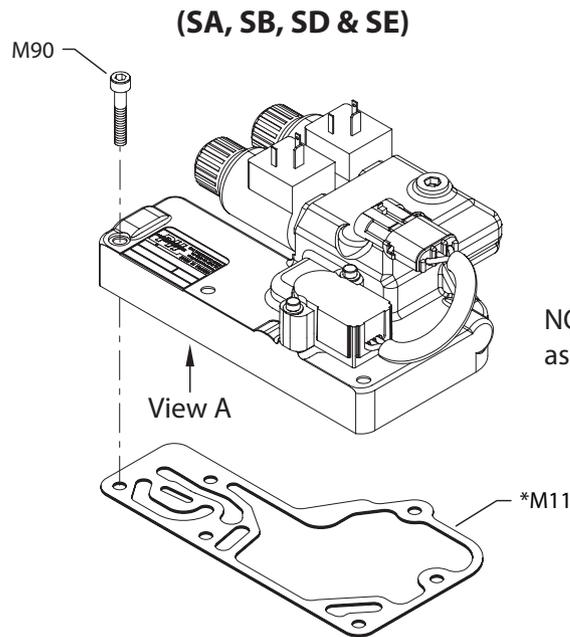
\* = included in control seal kit QM210


**Variable displacement pump**
**Control**

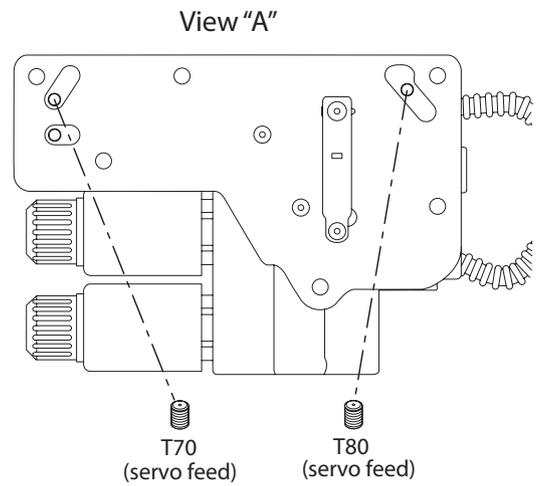
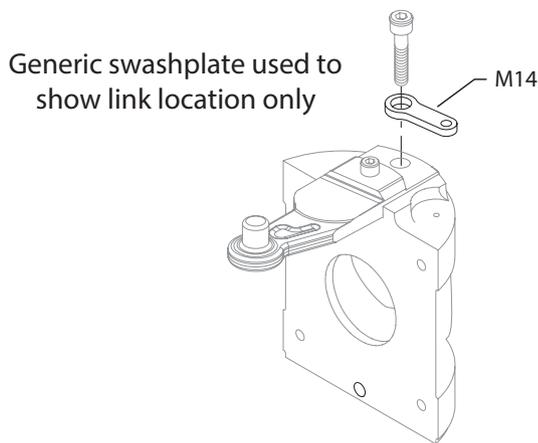
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
RS	M11	01-15		510378	Gasket	1
	M14	01-15		11070307	Feedback link	1
	M26	01-15		144725 (9004105-0110)	O-ring	1
	M27	01-15		042507	Retaining ring	1
	M28	01-15		510690	Shaft seal ring	1
	M029	01-15		512047	Washer	1
	M70	01-15		769075	Control handle	1
	M71	01-15		9009660-3100	Toothlock washer	1
	M72	01-15		040642 (9003513-0800)	Nut	1
	M76	01-15		513018	Solenoid, 24 volt	1
	M90	01-15		354407 (9007314-0611)	Screw	5
	M92	01-15		510382	Screw	1
	QM10	01-15		11086422	Control kit, roller, 24 volt, nss	1
	QM83	01-15		009670 (9004201-5000)	O-ring	1
	QM89	01-15		11099847	Neutral start switch kit	1
	QM034	01-15		11099850	Valve seal kit	1
	QM036	01-15		11100383	Nut	1
	QM037	01-15		11100387	Coil, 24 volt, Weather-pack connector	1
	QM210	01-15		11100030	Control seal kit	1



Variable displacement pump



NOTE: This control is not available as a service part



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 844E

\* = included in control seal kit QM210



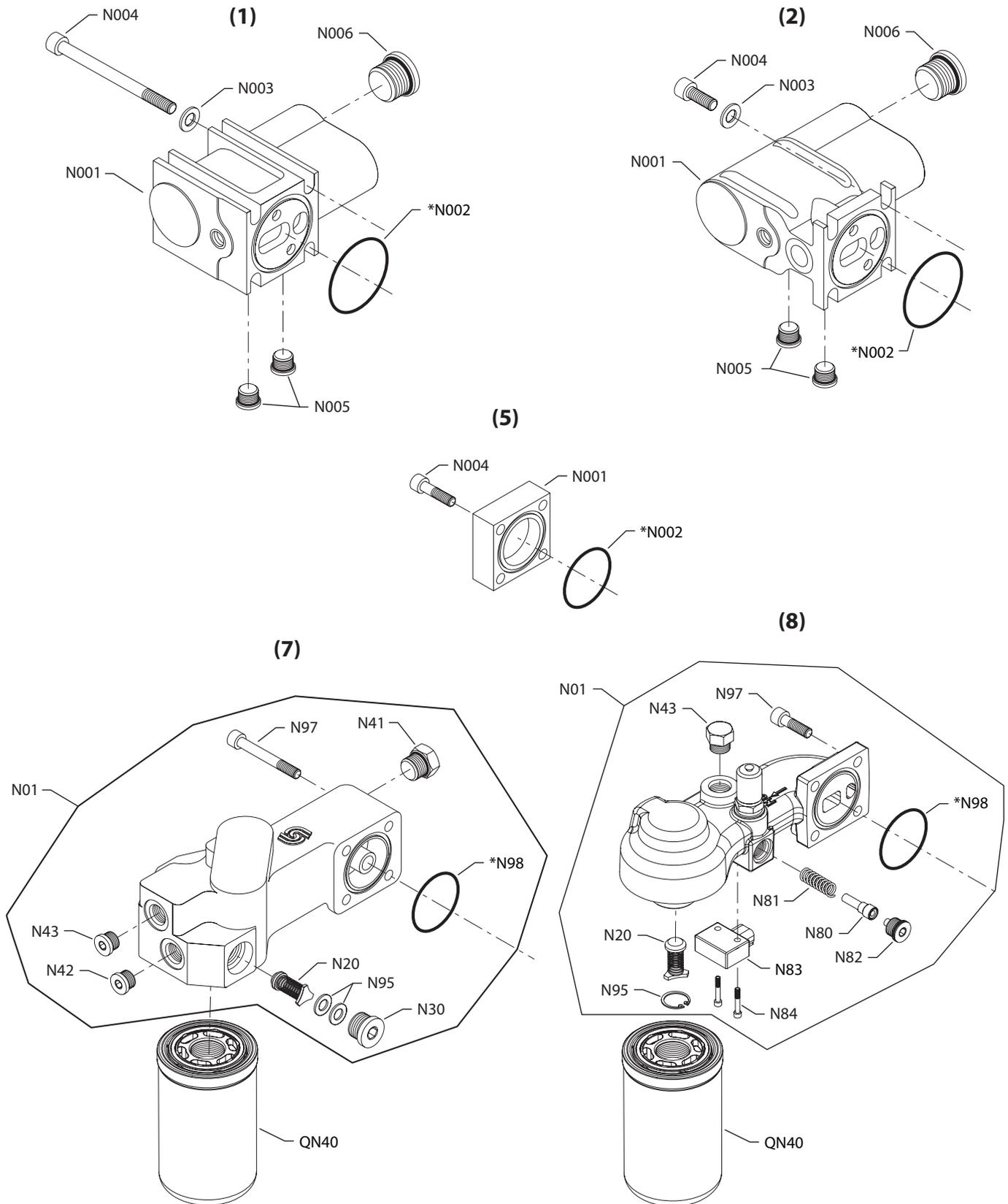
**Variable displacement pump**

**Control**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
SA	M11	08-32		8800923	Gasket	1
	M14	08-32		11070307	Feedback link	1
	M90	08-32		694356 (9007314-0608)	Screw	6
SB	M11	08-32		8800923	Gasket	1
	M14	08-32		11070307	Feedback link	1
	M90	08-32		694356 (9007314-0608)	Screw	6
SD	M11	10-34		8800923	Gasket	1
	M14	10-34		11070307	Feedback link	1
	M90	10-34		694356 (9007314-0608)	Screw	6
SE	M11	10-34		8800923	Gasket	1
	M14	10-34		11070307	Feedback link	1
	M90	10-34		694356 (9007314-0608)	Screw	6



Variable displacement pump



E100 929E

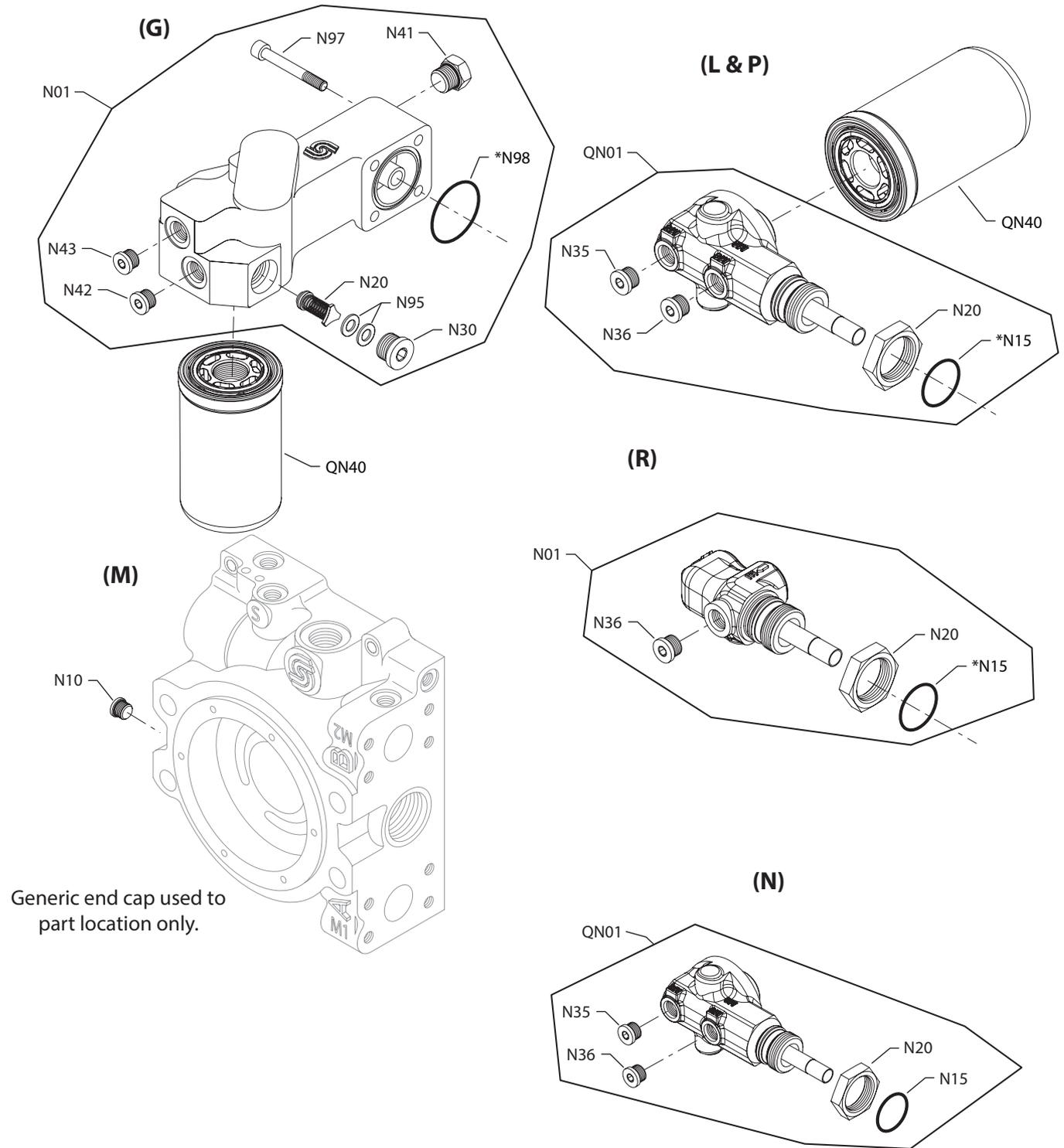
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**Filtration**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	N001	94-43	12-36	501096	Manifold	1
	N002	94-43	12-36	9004104-0320	O-ring	1
	N003	94-43	12-36	002311 (9009610-3459)	Washer	4
	N004	94-43	12-36	505442	Screw	4
	N005	94-43	12-36	140644	Plug assembly	2
	N006	94-43	12-36	320002 (9005110-9200)	Plug assembly	1
2	N001	94-43	12-36	505414	Manifold	1
	N002	94-43	12-36	9004104-0320	O-ring	1
	N003	94-43	12-36	002311 (9009610-3459)	Washer	4
	N004	94-43	12-36	713594	Screw	4
	N005	94-43	12-36	140644	Plug assembly	2
	N006	94-43	12-36	320002 (9005110-9200)	Plug assembly	1
5	N001	99-18		515972	Cover plate	1
	N002	99-18		9004104-0320	O-ring	1
	N004	99-18		746594	Screw	4
7	N01	02-03		501831	Filter manifold assembly	1
	N20	02-03		360768	Check valve	1
	N30	02-03		365965	Plug	1
	N43	02-03		001537 (9005100-8700)	Plug assembly	1
	N42	02-03		140644	Plug assembly	1
	N43	02-03		140644	Plug assembly	1
	N95	02-03		500115	Washer	2
	N97	02-03		376269	Screw	4
	N98	02-03		9004104-0320	O-ring	1
	QN40	02-03		11004919	Filter assembly, long	1
8			None			
9	N01	02-03		518202	Filter manifold assembly	1
	N20	02-03		520974	Check valve	1
	N43	02-03		508497	Plug assembly	1
	N80	02-03		518331	Plug assembly, magnetnic	1
	N81	02-03		519585	Spring	1
	N82	02-03		518335	Plug assembly, special	1
	N83	02-03		11000357	Filtration sensor	1
	N84	02-03		519968	Screw	2
	N95	02-03		042515	Retaining ring	1
	N97	02-03		393603	Screw	4
	N98	02-03		9004104-0320	O-ring	1
	QN40	02-03		11004919	Filter assembly, long	1
	D			None		



Variable displacement pump



E103 681E

\* = included in overhaul seal kit Q210

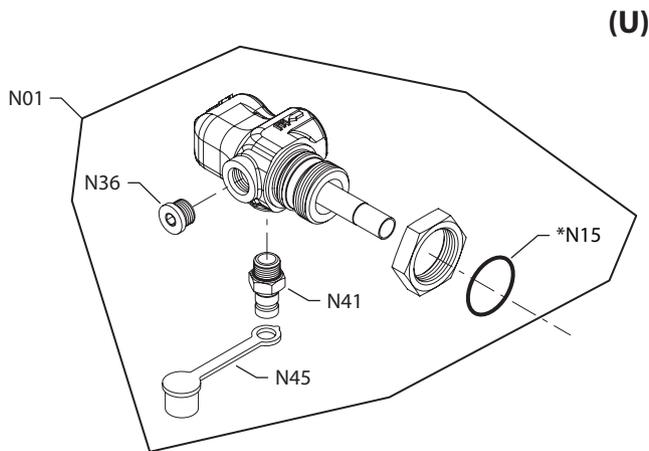
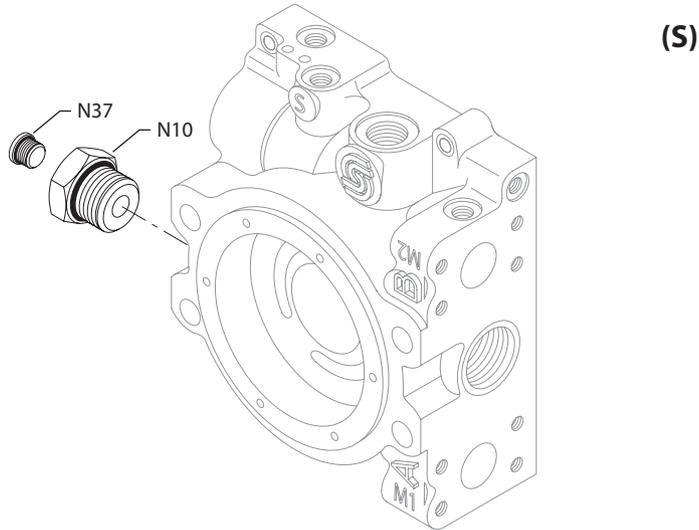

**Variable displacement pump**
**Filtration**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
G	N01	02-03		501831	Filter manifold assembly	1
	N20	02-03		360768	Check valve	1
	N30	02-03		365965	Plug	1
	N43	02-03		001537 (9005100-8700)	Plug assembly	1
	N42	02-03		140644	Plug assembly	1
	N43	02-03		140644	Plug assembly	1
	N95	02-03		500115	Washer	2
	N97	02-03		376269	Screw	4
	N98	02-03		9004104-0320	O-ring	1
	QN40	02-03		11004917	Filter assembly, short	1
L	N15	89-41		9004201-9000	O-ring	1
	N20	95-18		11049997	Nut	1
	N20	89-41	95-17	700492 (9002863-1600)	Nut (SB-1994-036)	1
	N35	89-41		140644	Plug assembly	1
	N36	89-41		140644	Plug assembly	1
	QN01	89-41		11145250	Filter manifold assembly	1
	QN40	02-03		11004919	Filter assembly, long	1
	M	N10	94-16		140644	Plug assembly
N	N01	17-28		11060346	Filter manifold assembly	1
	N36	17-28		140644	Plug assembly	1
	N40	17-28		11008261	Filtration Cover	1
	QN01	17-28		11145250	Filter assembly assembly	1
	P	N15	89-41		9004201-9000	O-ring
	N20	95-18		11049997	Nut	1
	N20	89-41	95-17	700492 (9002863-1600)	Nut (SB-1994-036)	1
	N35	89-41		140644	Plug assembly	1
	N36	89-41		140644	Plug assembly	1
	QN01	89-41		11145250	Filter manifold assembly	1
	QN40	02-03		11004917	Filter assembly, short	1
R	N01	89-41		11060429	Filter manifold assembly, remote	1
	N15	89-41		9004201-9000	O-ring	1
	N20	95-18		11049997	Nut	1
	N20	89-41	95-17	700492 (9002863-1600)	Nut (SB-1994-036)	1
	N36	89-41		140644	Plug assembly	1



**Variable displacement pump**

Generic end cap used to  
part location only.



E103 682E

\* = included in overhaul seal kit Q210



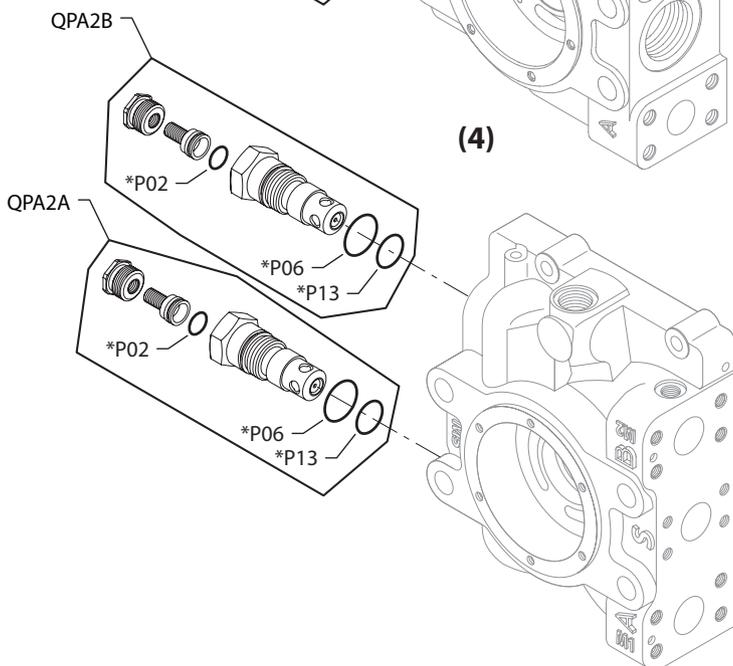
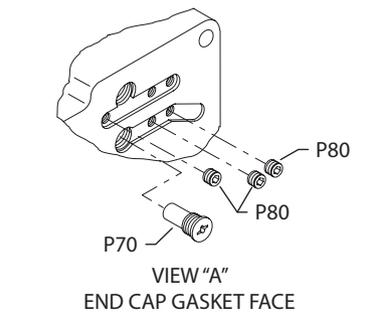
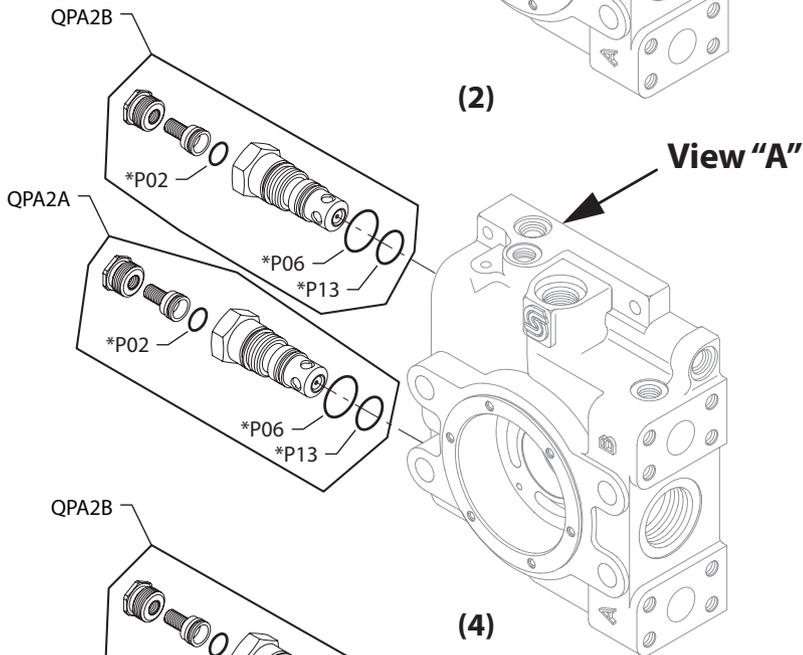
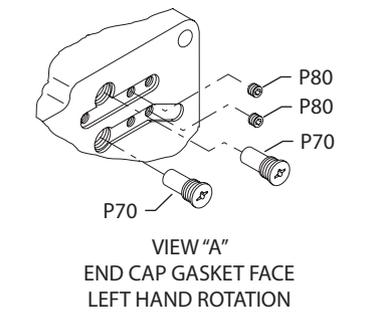
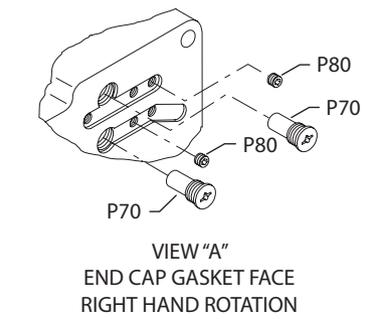
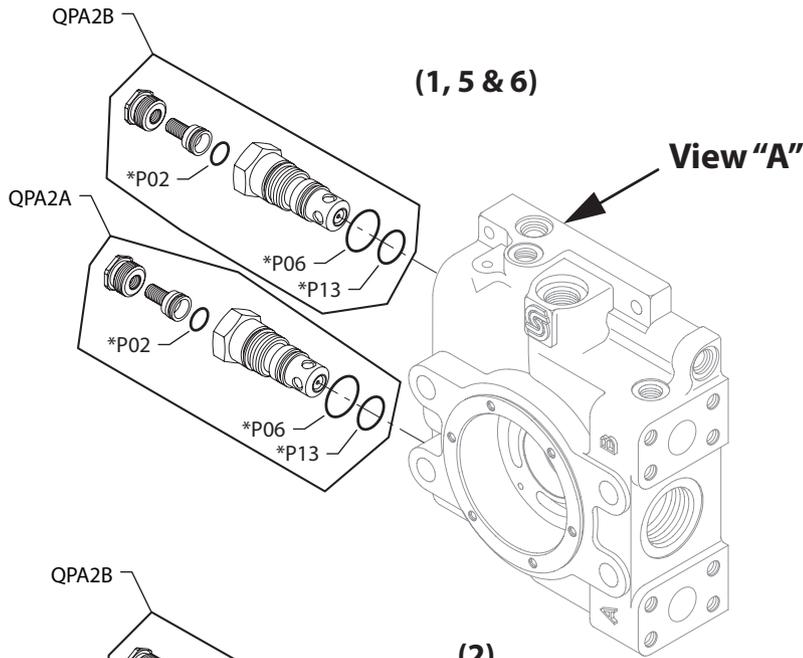
Variable displacement pump

Filtration

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
S	N10	89-41		707554	Reducer assembly	1
	N37	89-41		140644	Plug assembly	1
U	N01	89-41		11067124	Filter manifold assembly, remote	1
	N15	89-41		9004201-9000	O-ring	1
	N20	95-18		11049997	Nut	1
	N20	89-41	95-17	700492 (9002863-1600)	Nut (SB-1994-036)	1
	N36	89-41		140644	Plug assembly	1
	N41	89-41		8700127	Diagnostic receptical	1
	N45	89-41		8700128	Dust cover	1
V				None		



Variable displacement pump



Generic end caps used to show valve location only

E100 931E

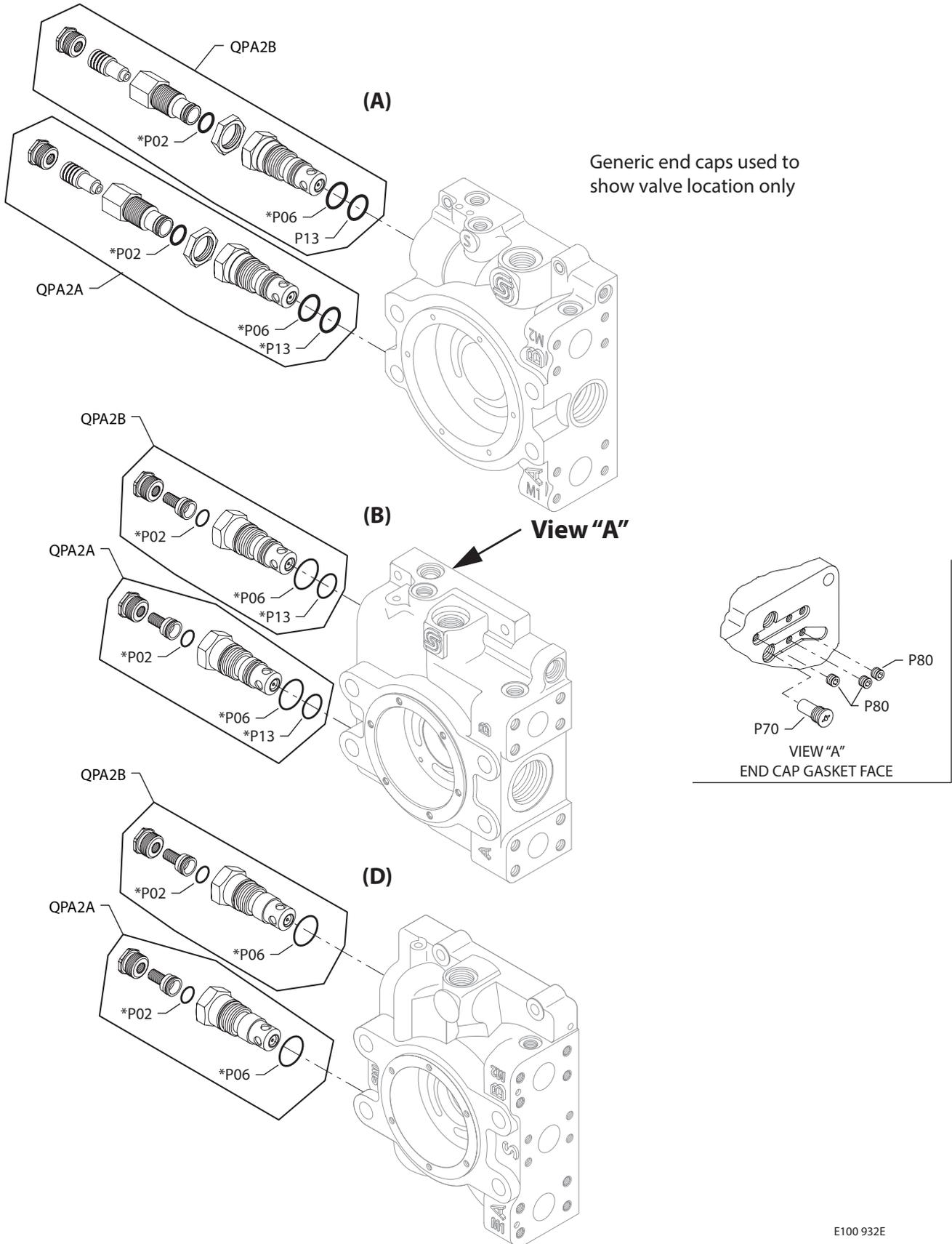
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**High pressure regulation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	P2	89-41		775080	O-ring	2
	P6	89-41		360784 (9004105-0290)	O-ring	2
	P13	89-41		775155	O-ring	2
	P70	89-41		8800188	Check valve assembly	2
	P80	89-41		9005475-0004	Special pipe plug	2
	QPA2A	89-41		8510023-1	Multi-function valve kit (SB-1991-014)	1
	QPA2B	89-41		8510023-1	Multi-function valve kit (SB-1991-014)	1
	2	P2	89-41		775080	O-ring
P6		89-41		360784 (9004105-0290)	O-ring	2
P13		89-41		775155	O-ring	2
P70		89-41		327007 (9005110-4400)	Plug assembly	1
P80		89-41		9005475-0004	Special pipe plug	3
QPA2A		89-41		8510023-2	Multi-function valve kit (SB-1991-014)	1
QPA2B		89-41		8510023-2	Multi-function valve kit (SB-1991-014)	1
4		P2	03-28		775080	O-ring
	P6	03-28		360784 (9004105-0290)	O-ring	2
	P13	03-28		775155	O-ring	2
	QPA2A	03-28		8510023-7	Multi-function valve kit (SB-1991-014)	1
	QPA2B	03-28		8510023-7	Multi-function valve kit (SB-1991-014)	1
	5	P2	98-02		775080	O-ring
P6		98-02		360784 (9004105-0290)	O-ring	2
P13		98-02		775155	O-ring	2
P70		98-02		8800188	Check valve assembly	2
P80		98-02		9005475-0004	Special pipe plug	2
QPA2A		98-02		8510274	Multi-function valve kit (SB-1991-014)	1
QPA2B		98-02		8510274	Multi-function valve kit (SB-1991-014)	1
6		P2	93-26		775080	O-ring
	P6	93-26		360784 (9004105-0290)	O-ring	2
	P13	93-26		775155	O-ring	2
	P70	93-26		8800188	Check valve assembly	2
	P80	93-26		9005475-0004	Special pipe plug	2
	QPA2A	93-26		8510023-6	Multi-function valve kit (SB-1991-014)	1
	QPA2B	93-26		8510023-6	Multi-function valve kit (SB-1991-014)	1



Variable displacement pump



E100 932E

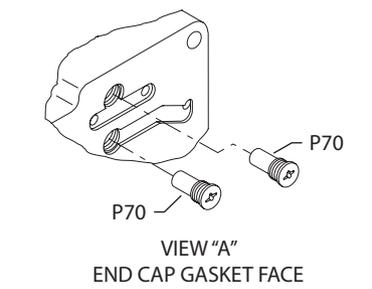
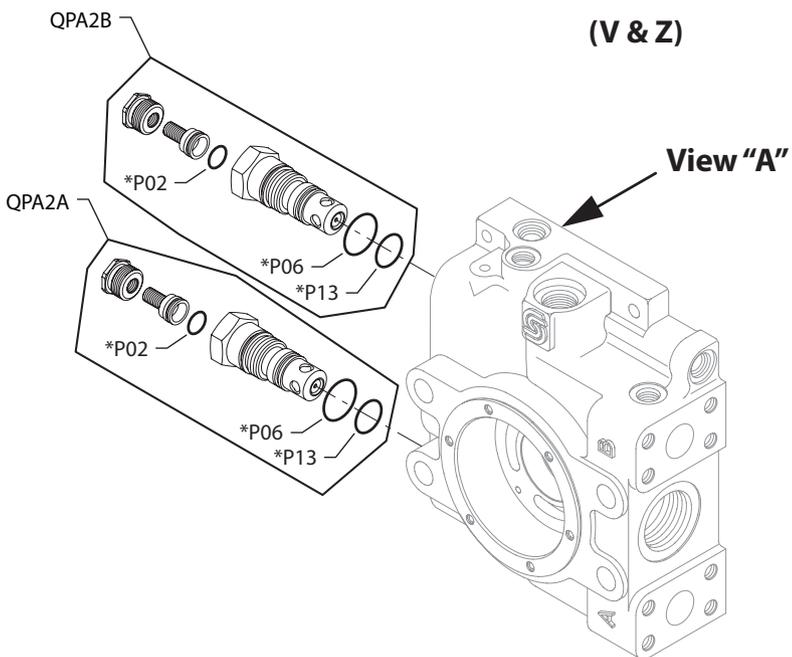
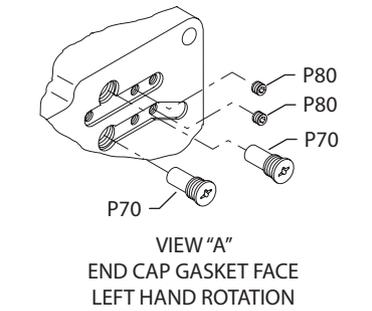
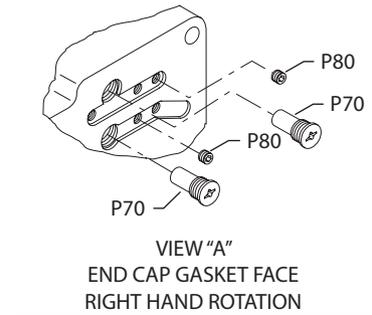
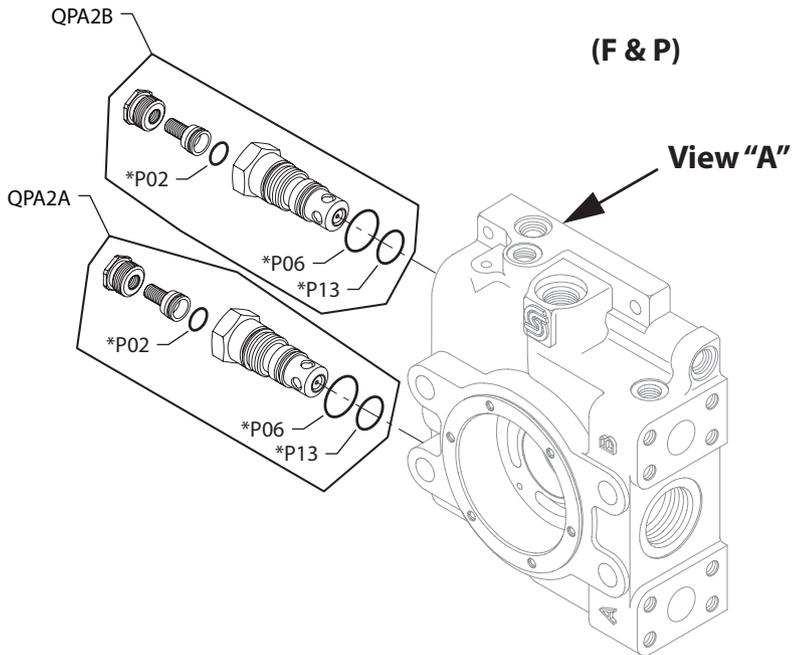
\* = included in overhaul seal kit Q210


**Variable displacement pump**
**High pressure regulation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
A	P02	89-41	14-25	775080	O-ring	2
	P06	89-41	14-25	360784 (9004105-0290)	O-ring	2
	P13	89-41	14-25	775155	O-ring	2
B	P02	99-09		775080	O-ring	2
	P06	99-09		360784 (9004105-0290)	O-ring	2
	P13	99-09		775155	O-ring	2
	P70	99-09		8800188	Check valve assembly	1
	P80	99-09		9005475-0004	Special pipe plug	3
	QPA2A	99-09		8510023-1	Multi-function valve kit (SB-1991-014)	1
	QPA2B	99-09		8510023-7	Multi-function valve kit (SB-1991-014)	1
D	P02	97-40		775080	O-ring	2
	P06	97-40		360784 (9004105-0290)	O-ring	2
	QPA2A	97-40		11086466	Multi-function valve kit (SB-1991-014)	1
	QPA2B	97-40		11086466	Multi-function valve kit (SB-1991-014)	1



Variable displacement pump



Generic end cap used to show valve location only

E101 841E

\* = included in overhaul seal kit Q210

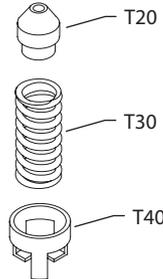

**Variable displacement pump**
**High pressure regulation**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit	
F	P2	94-39		775080	O-ring	2	
	P6	94-39		360784 (9004105-0290)	O-ring	2	
	P13	94-39		775155	O-ring	2	
	P70	94-39		8800188	Check valve assembly	2	
	P80	94-39		9005475-0004	Special pipe plug	2	
	QPA2A	94-39		8510023-2	Multi-function valve kit (SB-1991-014)	1	
	QPA2B	94-39		8510023-2	Multi-function valve kit (SB-1991-014)	1	
	P	P2	99-10		775080	O-ring	2
P6		99-10		360784 (9004105-0290)	O-ring	2	
P13		99-10		775155	O-ring	2	
P70		99-10		8800188	Check valve assembly	2	
P80		99-10		9005475-0004	Special pipe plug	2	
QPA2A		99-10		8510292	Multi-function valve kit (SB-1991-014)	1	
QPA2B		99-10		8510292	Multi-function valve kit (SB-1991-014)	1	
V		P2	02-30		775080	O-ring	2
	P6	02-30		360784 (9004105-0290)	O-ring	2	
	P13	02-30		775155	O-ring	2	
	P70	02-30		8800188	Check valve assembly	2	
	QPA2A	02-30		8510240	Multi-function valve kit (SB-1991-014)	1	
	QPA2B	02-30		8510240	Multi-function valve kit (SB-1991-014)	1	
	Z	P2	04-12		775080	O-ring	2
		P6	04-12		360784 (9004105-0290)	O-ring	2
P13		04-12		775155	O-ring	2	
P70		04-12		8800188	Check valve assembly	2	
QPA2A		04-12		8510022-1	Multi-function valve kit (SB-1991-014)	1	
QPA2B		04-12		8510022-1	Multi-function valve kit (SB-1991-014)	1	



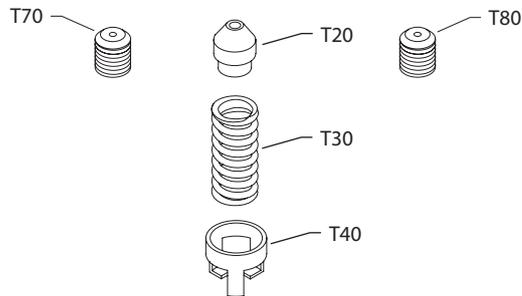
Variable displacement pump

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



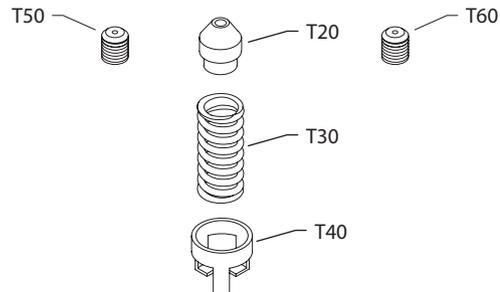
See control drawing  
for orifice location

**(21)**



See control drawing  
for orifice location

**(23)**



See control drawing  
for orifice location

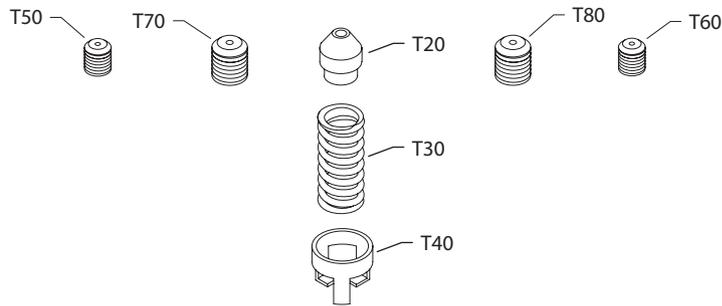

**Variable displacement pump**
**Orifice**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
00				None		
01	T20	89-41		8801136	Orificed check valve, .018"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
02	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
03	T20	89-41		11061958	Orificed check valve, .81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
04	T20	89-41		11061970	Orificed check valve, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
05	T20	89-41		11061981	Orificed check valve, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
06	T20	89-41		11061993	Orificed check valve, 1.57mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
09	T20	89-41		11062006	Orificed check valve, 2.34mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
21	T20	89-41		11061970	Orificed check valve, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		714477	Orifice plug, 0.8mm, M8 x 8	1
	T80	89-41		714477	Orifice plug, 0.8mm, M8 x 8	1
22	T20	89-41		8801137	Orificed check valve, .022"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
23	T20	89-41		11061958	Orificed check valve, .81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639153	Orifice plug, 1.3mm, M5 x 6	1
	T60	89-41		639153	Orifice plug, 1.3mm, M5 x 6	1



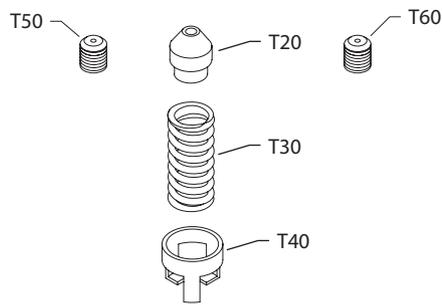
Variable displacement pump

**(25, 28 & 30)**



See control drawing  
for orifice location

**(26, 27 & 29)**



See control drawing  
for orifice location

**(32 & 33)**



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
25	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		606657	Orifice plug, 0.5mm, M5 x 6	1
	T60	89-41		606657	Orifice plug, 0.5mm, M5 x 6	1
	T70	89-41		716837	Orifice plug, 0.6mm, M8 x 8	1
	T80	89-41		716837	Orifice plug, 0.6mm, M8 x 8	1
	26	T20	89-41		11061958	Orificed check valve, .81mm
T30		89-41		679506 (8700007)	Spring	1
T40		89-41		8801303	Spring retainer	1
T50		89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
T60		89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
27		T20	89-41		11061970	Orificed check valve, 1.02mm
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
	T60	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
	28	T20	89-41		8801139	Orificed check valve, .026"
T30		89-41		679506 (8700007)	Spring	1
T40		89-41		8801303	Spring retainer	1
T50		89-41		639104	Orifice plug, 0.7mm, M5 x 6	1
T60		89-41		639104	Orifice plug, 0.7mm, M5 x 6	1
T70		89-41		704650	Orifice plug, 0.7mm, M8 x 8	1
T80		89-41		704650	Orifice plug, 0.7mm, M8 x 8	1
29		T20	89-41		11061958	Orificed check valve, .81mm
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639104	Orifice plug, 0.7mm, M5 x 6	1
	T60	89-41		639104	Orifice plug, 0.7mm, M5 x 6	1
	30	T20	89-41		8801139	Orificed check valve, .026"
T30		89-41		679506 (8700007)	Spring	1
T40		89-41		8801303	Spring retainer	1
T50		89-41		639153	Orifice plug, 1.3mm, M5 x 6	1
T60		89-41		639153	Orifice plug, 1.3mm, M5 x 6	1
T70		89-41		704650	Orifice plug, 0.7mm, M8 x 8	1
T80		89-41		704650	Orifice plug, 0.7mm, M8 x 8	1
32		T50	89-41		639120	Orifice plug, 1.0mm, M5 x 6
	T60	89-41		639153	Orifice plug, 1.3mm, M5 x 6	1
33	T50	89-41		639153	Orifice plug, 1.3mm, M5 x 6	1
	T60	89-41		639153	Orifice plug, 1.3mm, M5 x 6	1



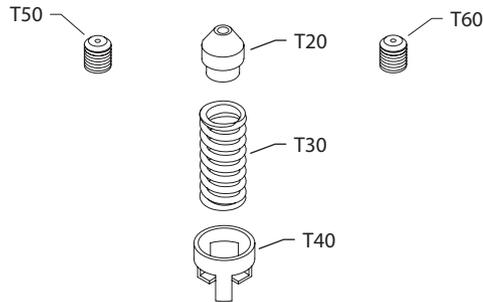
Variable displacement pump

**(34)**



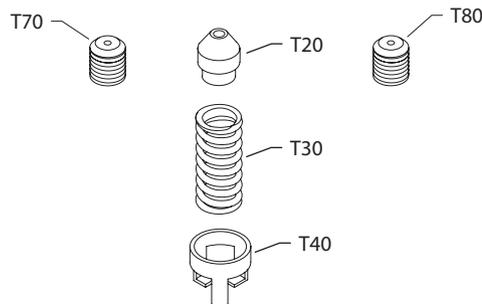
See control drawing  
for orifice location

**(37, 44, 45, 46 & 49)**



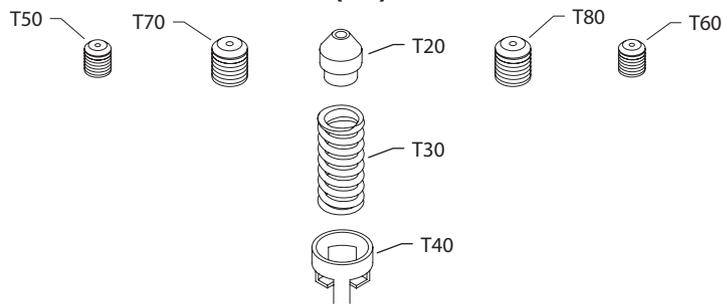
See control drawing  
for orifice location

**(38)**



See control drawing  
for orifice location

**(48)**



See control drawing  
for orifice location

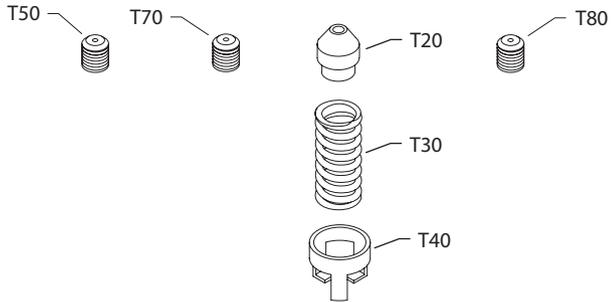

**Variable displacement pump**
**Orifice**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
34	T70	89-41		755793	Orifice plug, 1.0mm, M8 x 8	1
	T80	89-41		755793	Orifice plug, 1.0mm, M8 x 8	1
37	T20	89-41		11061981	Orificed check valve, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639120	Orifice plug, 1.0mm, M5 x 6	1
	T60	89-41		639120	Orifice plug, 1.0mm, M5 x 6	1
38	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		716837	Orifice plug, 0.6mm, M8 x 8	1
	T80	89-41		716837	Orifice plug, 0.6mm, M8 x 8	1
44	T20	89-41		11061981	Orificed check valve, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
	T60	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
45	T20	89-41		11061958	Orificed check valve, 0.81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639153	Orifice plug, 1.3mm, M5 x 6	1
	T60	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
46	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
	T60	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
48	T20	89-41		11061958	Orificed check valve, 0.81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
	T60	89-41		598292	Orifice plug, 0.8mm, M5 x 6	1
	T70	89-41		714477	Orifice plug, 0.8mm, M8 x 8	1
	T80	89-41		714477	Orifice plug, 0.8mm, M8 x 8	1
49	T20	89-41		11061958	Orificed check valve, 0.81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639120	Orifice plug, 1.0mm, M5 x 6	1
	T60	89-41		639120	Orifice plug, 1.0mm, M5 x 6	1



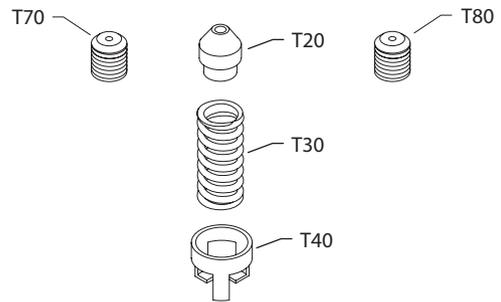
Variable displacement pump

**(50)**



See control drawing  
for orifice location

**(54)**



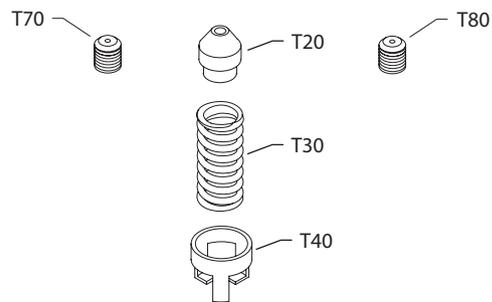
See control drawing  
for orifice location

**(64)**



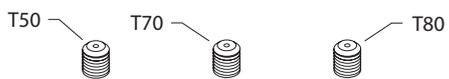
See control drawing  
for orifice location

**(76, 99, A5 & A8)**



See control drawing  
for orifice location

**(82)**



See control drawing  
for orifice location

**(84 & A4)**



See control drawing  
for orifice location

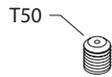
**Variable displacement pump**
**Orifice**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
50	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
	T70	89-41		517571	Orifice plug, 0.9mm, M6 x 6	1
	T80	89-41		517571	Orifice plug, 0.9mm, M6 x 6	1
	54	T20	89-41	12-29	11061970	Orificed check valve, 1.02mm
T30		89-41	12-29	679506 (8700007)	Spring	1
T40		89-41	12-29	8801303	Spring retainer	1
T70		89-41	12-29	755793	Orifice plug, 1.0mm, M8 x 8	1
T80		89-41	12-29	755793	Orifice plug, 1.0mm, M8 x 8	1
64		T50	89-41		617159	Orifice plug, 1.8mm, M5 x 6
	T60	89-41		617159	Orifice plug, 1.8mm, M5 x 6	1
76	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
	T80	89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
	82	T50	89-41		310771	Orifice plug, 1.2mm, M6 x 6
T70		89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
T80		89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
84	T70	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
	T80	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
99	T20	89-41		8801301	Orificed check valve, .047"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		517572	Orifice plug, 1.5mm, M6 x 6	1
	T80	89-41		517572	Orifice plug, 1.5mm, M6 x 6	1
	A4	T70	89-41		578542	Orifice plug, 0.8mm, M6 x 8
T80		89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
A5	T20	89-41		11061970	Control orifice kit, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
	T80	89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
	A8	T20	89-41		11061970	Control orifice kit, 1.02mm
T30		89-41		679506 (8700007)	Spring	1
T40		89-41		8801303	Spring retainer	1
T70		89-41		508014	Orifice plug, 1.0mm, M6 x 8	1
T80		89-41		508014	Orifice plug, 1.0mm, M6 x 8	1



Variable displacement pump

**(B1, B7, B8, B9 & G1)**



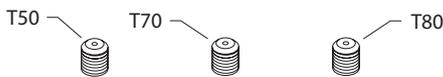
See control drawing  
for orifice location

**(B2)**



See control drawing  
for orifice location

**(B3 & BA)**



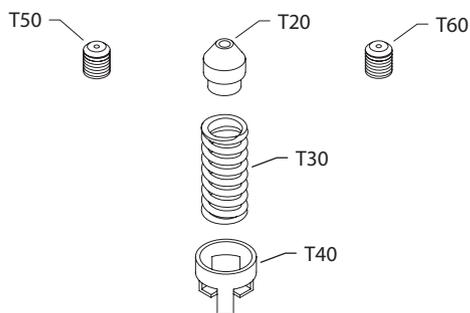
See control drawing  
for orifice location

**(C4)**



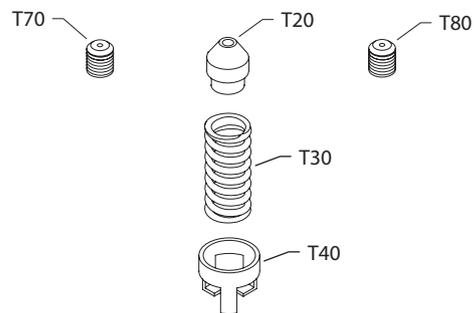
See control drawing  
for orifice location

**(C5, C6 & C7)**



See control drawing  
for orifice location

**(D1)**



See control drawing  
for orifice location

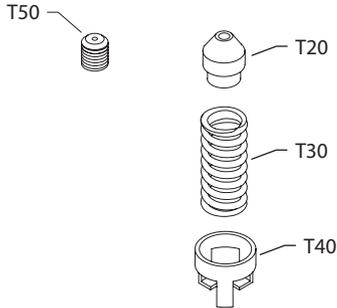

**Variable displacement pump**
**Orifice**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
B1	T50	89-41		507042	Orifice plug, 1.5mm, M6 x 8	1
B2	T70	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
	T80	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
B3	T50	89-41		507042	Orifice plug, 1.5mm, M6 x 8	1
	T70	89-41		739144	Orifice plug, 0.8mm, M6 x 6	1
	T80	89-41		739144	Orifice plug, 0.8mm, M6 x 6	1
B7	T50	89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
B8	T50	89-41		508014	Orifice plug, 1.0mm, M6 x 8	1
B9	T50	89-41		516598	Orifice plug, 1.2mm, M6 x 8	1
BA	T50	89-41		516598	Orifice plug, 1.2mm, M6 x 8	1
	T70	89-41		507042	Orifice plug, 1.5mm, M6 x 8	1
	T80	89-41		507042	Orifice plug, 1.5mm, M6 x 8	1
C4	T50	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
	T60	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
C5	T20	89-41		11061958	Orificed check valve, 0.81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
	T60	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
C6	T20	89-41		11061970	Control orifice kit, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
	T60	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
C7	T20	89-41		11061981	Control orifice kit, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
	T60	89-41		639161	Orifice plug, 1.4 mm, M5 x 6	1
D1	T20	89-41		11061981	Control orifice kit, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		043356	Orifice plug, 0.9mm, M6 x 8	1
	T80	89-41		043356	Orifice plug, 0.9mm, M6 x 8	1
G1	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1



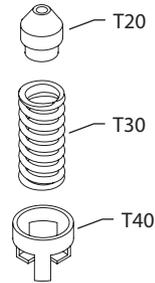
Variable displacement pump

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



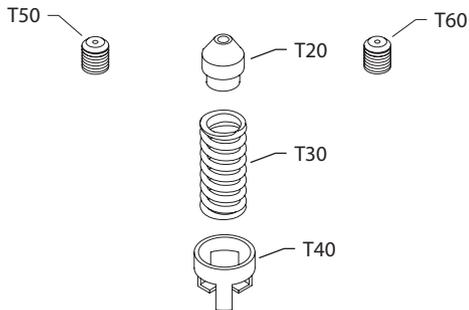
See control drawing for orifice location

**(K1)**



See control drawing for orifice location

**(K2 & Z3)**



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
G4	T20	89-41		8801136	Control orifice kit, .018"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1
G8	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1
GB	T20	89-41		11061958	Orificed check valve, 0.81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1
GD	T20	89-41		11061993	Orificed check valve, 1.57mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1
GF	T20	89-41		11061970	Control orifice kit, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1
GJ	T20	89-41		11061981	Control orifice kit, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2 mm, M6 x 6	1
K1	T20	89-41		11061981	Control orifice kit, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
K2	T20	89-41		11061958	Orificed check valve, 0.81mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		639104	Orifice plug, 0.7mm, M5 x 6	1
	T60	89-41		639104	Orifice plug, 0.7mm, M5 x 6	1
P1	T70	11-40		508014	Orifice plug, 1.0mm, M6 x 8	1
	T80	11-40		508014	Orifice plug, 1.0mm, M6 x 8	1
Z3	T20	89-41		11061970	Control orifice kit, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		519659	Orifice plug, 1.0mm, M6 x 6	1
	T60	89-41		519659	Orifice plug, 1.0mm, M6 x 6	1


**Variable displacement pump**
**Overhaul seal kit**

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	Q210	89-41		11035671	Overhaul seal kit, 130cc	1
	Q210	89-41		11095651	Service kit, base pump, 130cc	1
	B90	89-41		9803390	Filter screen	3
	C70	89-41		308643	Screw	4
	E40	89-41		042432	Seal nut, M10	2
	E50	89-41		517379	O-ring	1
	E60	89-41		517230	Screw (SB-2002-014)	6
	F11	89-41		9004100-2240	O-ring	2
	F11	89-41		754150	O-ring	2
	F12	89-41		507800	Piston ring	2
	F12	89-41		754168	Piston ring	2
	F40	89-41		354316	O-ring	2
	F50	89-41		552224 (9004104-0360)	O-ring	2
	F112	89-41		042432	Seal nut, M10	1
	F124	89-41		066159	Seal nut, M12	1
	F212	89-41		042432	Seal nut, M10	1
	F224	89-41		066159	Seal nut, M12	1
	G30	89-41		730895	End cap gasket	1
	J40	89-41		11147582	O-ring	1
	J50	89-41		505068	O-ring	1
	K50	89-41		001156 (9004201-7500)	O-ring	1
	L25	89-41		519732	Seal carrier assembly	1
	N15	89-41		001172 (9004201-9000)	O-ring	1
	N98	89-41		9004104-0320	O-ring	1
	P02	89-41		775080	O-ring	2
	P06	89-41		360784 (9004105-0290)	O-ring	2
	P13	89-41		775155	O-ring	2



**Notes**

**BLN-10107**

To improve efficiency and reliability, the number of parts in series 90 pumps is being reduced. The charge pump design on 55 cc - 130 cc frame sizes is being changed so that the outer port plate is an integral part of the charge pump cover and distance plates are eliminated. The change is taking effect at the following manufacturing dates:

55 cc: 93-10      75 cc: 93-10      100 cc: 93-15      130 cc: 93-34

For auxiliary pad options, the new charge pump cover is rotation dependent. The cover will be marked as either left hand (L) or right hand (R). The non-auxiliary pad cover is not rotation dependent.

The charge pump shaft also changes and must be replaced when using the new style hardware. The complete charge pump assembly can be interchanged with corresponding hardware from 89-17 and beyond. However, piece parts are not interchangeable. For units prior to 89-17, consult Sauer-Danfoss.

The old design charge pump hardware is obsolete and is no longer available. Refer to the chart on the next page to determine the replacement kit.

**BLN-10107**

The following information must be known to determine the correct charge pump replacement kit:

1. Unit size (055, 075, 100, or 130 cc)
2. Charge pump displacement (11, 14, 17, 20, 26, or 34 cc)
3. Auxiliary pad (Yes or No)
4. Rotation (LH or RH)



**Service Bulletin: SB-1991-014**

<b>Products affected</b>	Series 90130 cc variable pumps
<b>Subject</b>	Multi-function valve installation torque
<b>Description</b>	<p>To avoid damaging the multi-function valve cartridge used on 130cc variable pumps, the torque has been lowered from 206 lbf·ft (279 Nm) to 155 lbf·ft (210 Nm).</p> <p>The series 90 service manual will be changed to show the lower installation torque at its next revision.</p>
<b>Models affected</b>	All 97-2xxx pumps
<b>Serial numbers</b>	All
<b>Part numbers affected</b>	All
<b>Parts disposition</b>	■ Not applicable



**Service Bulletin: SB-1992-003A**

**Products affected** Series 90: 55, 75, 100, 130 cc pumps

**Subject** Block point change: components redesign

**Description** As part of our overall series 90 product improvement program, numerous components are being redesigned. This redesign is referred to as a “block point” change. The objective of the block point change is to minimize the number of times we change the units while we convert to high volume tooling at various plant sites. These design improvements will provide increased reliability and more application flexibility. The nature of these changes makes customer requalification unnecessary. Old style (pre-block point) variable housings and end caps will no longer be available as spare parts.

**Frame size: 130 cc**

Item	Description	Pre “blockpoint” Part Number	New Part Number (92-19 & Later)
<b>Common Parts Group, 130 cc</b>			
B10	Variable housing	700237(O)	8510060
E10	Side cover	340133	746107
E20	Leveler	701037	730143
E30	Guide post	340117	746255
E40	Screw	364489 (4)	042432 (2) Seal Nut
B82	Plug	n/a	9005110-5600
<b>End Cap Group, 130 cc</b>			
G308	End Cap gasket	709816(I)(O)	730895(I)
G908	Screw	376624	713719
G958	Screw	527218	9007314-0811
<b>Special Hardware Features Group, 130 cc</b>			
B83	Plug-Speed Pick-up	n/a	9005110-5600
<b>Control Group, 130 cc</b>			
All Control Types-Delete The Following Parts:			
M810	Plate	738203(O)	N/A
M820	O-ring	9004104-0440	N/A
M830	O-ring	9004100-0220	N/A
M840	O-ring	9004101-0130	N/A
M860	Screw	345496	N/A
M870	Plug	9005100-4400	N/A
M880	Washer	723981	N/A

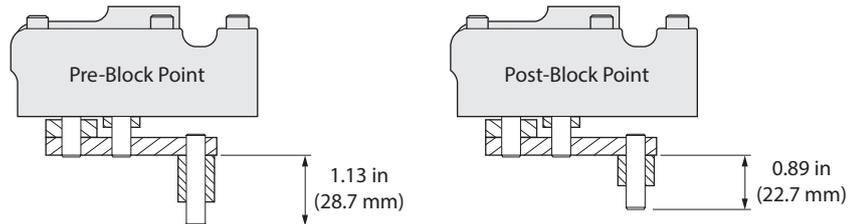
**Warning:** On 130cc pumps, “pre” and “Post” blockpoint controls are not interchangeable due to different length control pins.

(I) Interchangeable  
(O) Obsolete



Service Bulletin: SB-1992-003A

**Warning:** On 130cc pumps, “pre” and “Post” blockpoint controls (MDC’s, HDC’s and EDC’s) are not interchangeable due to different length control pins. Ensure positive pin engagement. Failure to do so may result in pump output, and the vehicle may move.



Controls, 130 cc

Module		Pre “blockpoint”	New Part Number
Groups	Description	Part Number	(92-19 & Later)
MEA	EDC kit MS connector	MCV111B1302	See EC Group
MEP	EDC kit Packard	MCV111B1304	See EE Group
MEC	EDC, MS, standard	MCV114A1402	MCV114B1302
MEE	EDC, Packard, standard	MCV114A1404	MCV114B1304
MEG	EDC, MS, annular	MCV114C1402	MCV114D1302
MEH	EDC, Packard, annular	MCV114C1404	MCV114D1304
MHA	HDC, 1-11 bar	MCV112A1302	See HK Group
MHB	HDC, 1-6.7 bar	MCV112A1301	See HM Group
MHC	HDC, 3-11 bar	MCV112A1303	See HF Group
MHF	HDC, 3-11 bar, standard	MCV115A1403	MCV115A1303
MHG	HDC, .8-4.6 bar, annular	MCV115B1405	MCV115B1305
MHH	HDC, 1-11 bar, annular	MCV115B1402	MCV115B1302
MHJ	HDC, 3-11 bar, annular	MCV115B1403	MCV115B1303
MHK	HDC, 1-11 bar, standard	MCV115A1402	MCV115A1302
MHL	HDC, .8-4.6 bar, standard	MCV115A1405	MCV115A1305
MHM	HDC, 1.1-6.7 bar, standard	MCV115A1401	MCV115A1301
MHN	HDC, 1.1-6.7 bar, annular	MCV115B1401	MCV115B1301
MMA	MDC w/o nss	8302MOMA-A	8302MOMA-B
MMB	MDC w/ nss	8302MOMB-A	8302MOMB-B

**Service Bulletin: SB-1992-003A****Models affected**

All series 90 94-2xxx, 95-2xxx, 96-2xxx, and 97-2xxx variable pumps

**Serial numbers**

Changes will take place at the serial number 92-19-xxxxx for 130 cc pumps

**Part numbers affected**

Refer to text of this bulletin for specific part numbers.

Housing: (all frame sizes) Thickness adjacent to the side cover has been increased.

Side Cover: (100 cc & 130cc only) Thickness increased.

End Cap: (all frame sizes) Match housing change; small end cap screws (55 cc-100 cc) will be larger; the orientation of the charge relief valve on side port end caps has been changed from an oblique to a vertical orientation.

Controls: (130cc only) Eliminate mounting plate, three-pin link change.

Side Cover: (130cc only) Swashplate hold-down ("T-bar") mounting will be changed to commonize the design with the smaller displacement units

**Note: Reference PIB-9102 for design changes and outline dimensions.**

**Parts disposition**

■ Non-interchangeable



**Service Bulletin: SB-1994-025**

**Products affected** Series 90 130 cc variable pumps

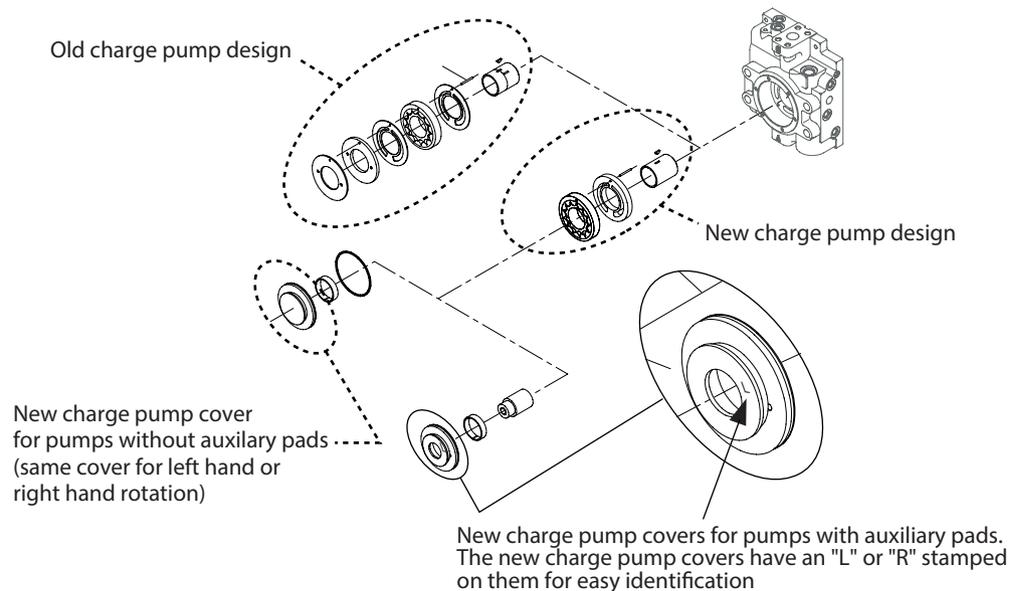
**Subject** Charge pump design change

**Description** To improve efficiency and reliability, the number of parts in the charge pump is being reduced. The charge pump on the 130 cc frame size is changing such that the outer port plate (H30) is an integral part of the charge pump cover (J15) and the distance plates are eliminated.

For auxiliary pad options, the new charge pump cover is rotation dependent. The cover will be marked either left hand (L) or right hand (R). The non-auxiliary pad cover is not rotation dependent.

The charge pump shaft also changes and must be replaced when using the new style hardware. The complete charge pump assembly can be interchanged with corresponding hardware.

However, piece parts are not interchangeable.





**Service Bulletin: SB-1994-025**

**Models affected** All 97-2xxx and 972xxxx variable pumps

**Serial numbers** Change occurred at serial number N-93-34-xxxxx

**Part numbers affected**

Obsolated Charge Pump Parts			Chg. pump displacement	Auxiliary pad	Rotation	Replacement Kit
Gear Set	Shaft	Cover				
714444	303636	347518	20 cc	No	LH or RH	8510064
		347526		Yes	LH	8510065
		347526		Yes	RH	8510066
714451	303636	347518	26 cc	No	LH or RH	8510067
		347526		Yes	LH	8510068
		347526		Yes	RH	8510069
714469	303636	347518	34 cc	No	LH or RH	8510070
		347526		Yes	LH	8510071
		347526		Yes	RH	8510072

**Parts disposition** ■ Interchangeable - piece parts are not interchangeable



**Service Bulletin: SB-1994-036**

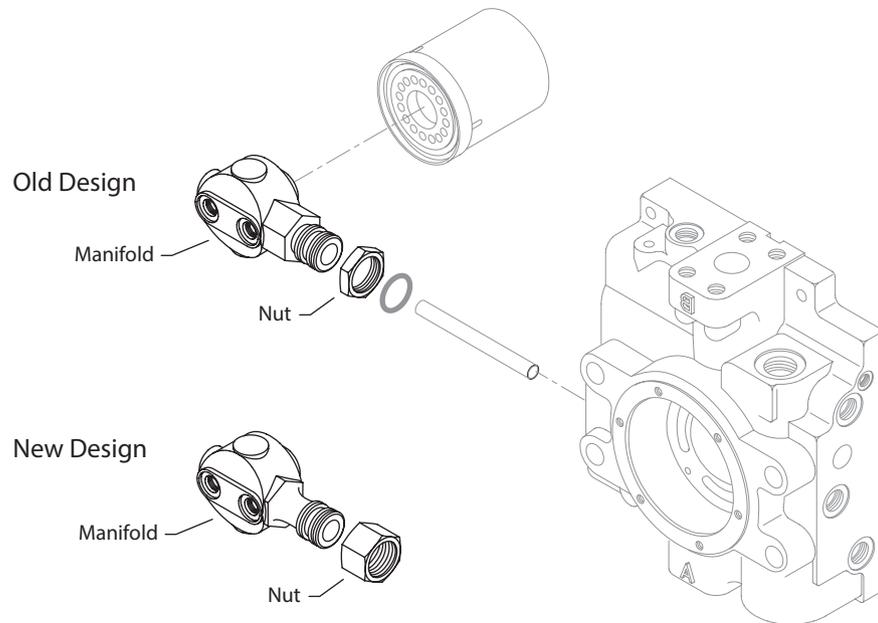
**Products affected** Series 90 55 thru 130 cc variable pumps

**Subject** Integral filtration manifold

**Description** As a product improvement, Sauer-Danfoss is changing the integral filter manifold and bulkhead nut to make it more easily indexed.

The old bulkhead nut may be used with either the old or new filter manifold. The new bulkhead nut can only be used with the new filter manifold.

The old bulkhead nut will remain available as a service part. The old filter manifold will be obsoleted and no longer available as a service part.



**Models affected** All series 90 55 thru 130 cc variable pumps with "L", "M", or "P" filtration option code

**Serial numbers** Change occurred at serial number 95-18-xxxxx

**Part numbers affected**

<u>Description</u>	<u>Part number (prior to 95-18)</u>	<u>Part number (95-18 &amp; beyond)</u>
Filter manifold	8800200	8800896
Bulkhead nut	9002863-1600	5000222

**Parts disposition** ■ Interchangeable - new bulkhead nut can only be used with new filter manifold



**Service Bulletin: SB-1995-003**

**Products affected** Series 90 variable pumps - all frame sizes

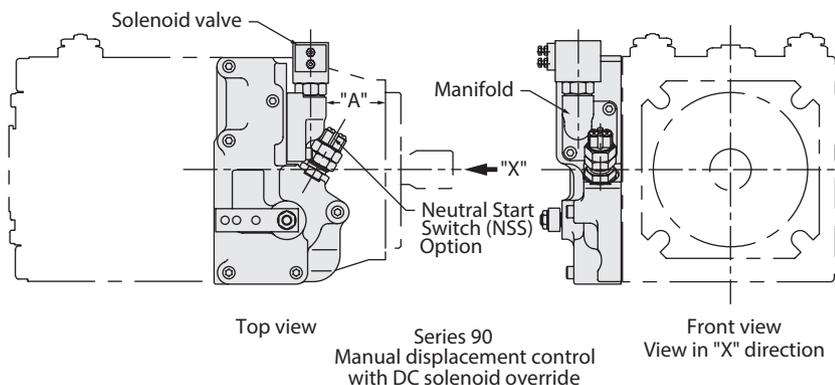
**Subject** Manual displacement control (MDC) with DC electric solenoid override

**Description** In order to accommodate our European customers, the manifold which attaches to the front of the manual displacement control (MDC) housing is being changed.

The European solenoid valve requires a thicker manifold to provide clearance between the solenoid and the front of the MDC housing. The revised manifold will protrude closer to the mounting flange of the pump, reducing dimension "A" shown in the accompanying drawing by approximately 5 mm [0.2 in]. Please see chart below for specific clearances.

The thicker manifold requires longer screws and may be used with either the U.S. or European sourced solenoid.

This change will become effective during March of 1995. The old manifold will be obsolete and no longer available as a service part.



Frame size		42	55	75	100	130
Dimension "A"	Current	39.9 [1.57]	55.9 [2.20]	54.1 [2.13]	60.2 [2.37]	74.4 [2.93]
	Future mm [in]	34.9 [1.37]	50.9 [2.0]	49.1 [1.93]	55.2 [2.17]	69.4 [2.73]

**Models affected** All series 90 variable pumps using MDC with DC electric solenoid override.

**Serial numbers** Change will take place in March 1995.

Part numbers affected	Description	Current part number	New part number	Quantity
	Manifold	8800365	505022	1
	Screw	9007314-0605	9007314-0606	2

**Parts disposition** ■ Interchangeable (new manifold requires longer screws)



**Service Bulletin: SB-1996-004**

**Products affected**

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

**Subject**

Side cover design change

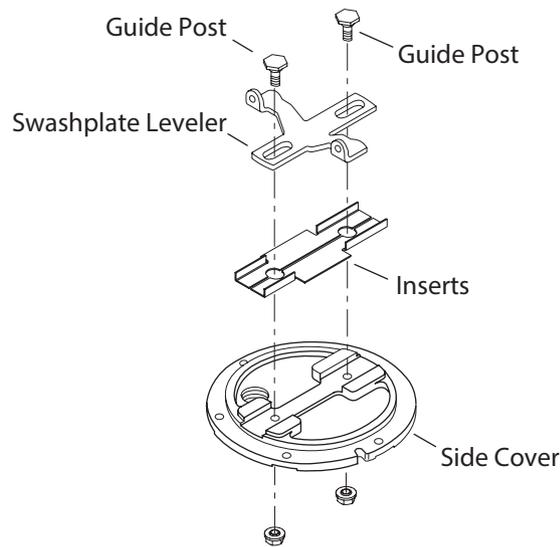
**Description**

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	Side cover 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

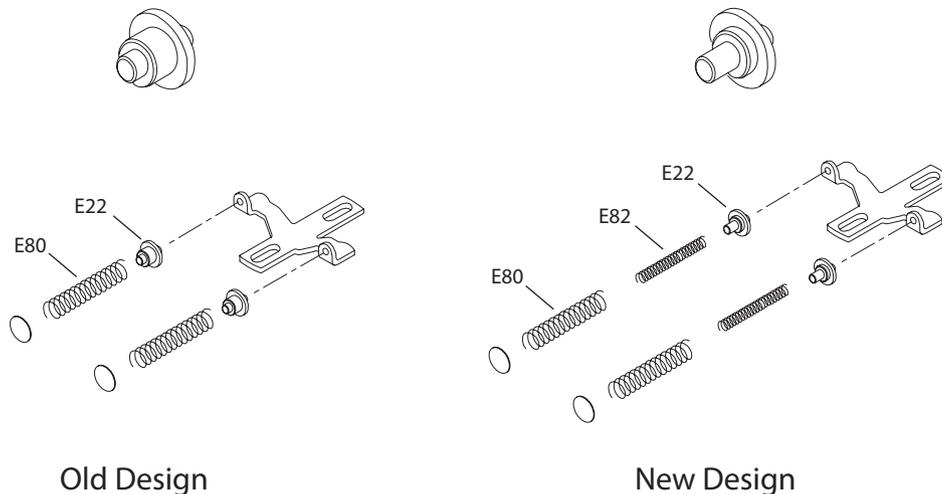


**Service Bulletin: SB-1997-018**

**Products affected** Series 90 130 cc variable pumps

**Subject** Swashplate leveler spring and spring seat change

**Description** As a product improvement, Sauer-Danfoss has changed the design of the springs and spring seats used on the swashplate leveler from two springs to four springs. The older spring and spring seat are obsolete and no longer available as a service part.



Spring identification	Old spring	New springs	
		E80	E82
Free length	106.44 mm [4.19 in]	111.4 mm [4.38 in]	95.25 mm [3.75 in]
O.D.	28.5 mm [1.122 in]	28.07 mm [1.11 in]	17.02 mm [.67 in]

**Models affected** All 97-2xxx and 972xxxx variable pumps

**Serial numbers** Change occurred at serial number N-97-08-xxxxx

Item no.	Description	Old p/n	Qty	New p/n	Qty
E22	Spring seat	367037	2	8300011	2
E82	Spring	-	-	8300009	2
E80	Spring	503091	2	8300010	2

**Parts disposition** ■ Interchangeable - only if springs and seats are changed together



**Service Bulletin: SB-1999-010**

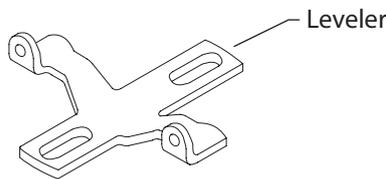
**Products affected** Series 90 130 cc variable pumps

**Subject** Swashplate leveler design change

**Description** Sauer-Danfoss has changed the design of the swashplate leveler used on Series 90 130 cc variable displacement pumps. Previously, the Series 90 130 cc pumps used two different leveler designs on a production basis. One leveler (730143) was used in pumps which were not equipped with an integral speed sensor and a second leveler (510780) was used specifically for pumps equipped with a speed sensor.

The new leveler is designed and manufactured to be compatible for use in both non speed sensor and speed sensor equipped Series 90 130 cc pumps. This change improves the initial assembly and servicing of the pumps by increasing the parts commonality.

The new leveler is completely interchangeable with both of the previous levelers. The previous two levelers have been obsoleted and are no longer available as service parts.



**Models affected** All 97-2xxx and 972xxxx variable pumps

**Serial numbers** Change occurred at serial number N-98-40-xxxxx

Integral speed sensor equipped	Previous to N-98-40	Current
	Yes	510780
No	730143	511052

**Parts disposition** ■ Interchangeable - piece parts are not interchangeable



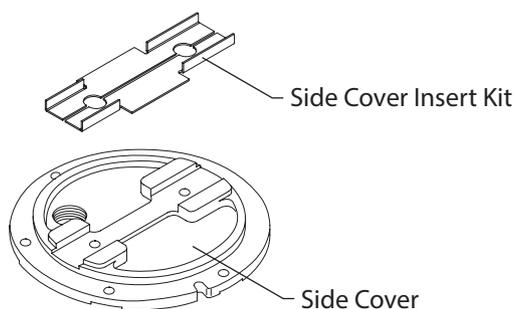
**Service Bulletin: SB-1999-041**

**Products affected** Series 90 variable pumps

**Subject** Change to side cover insert material

**Description** As a continuous product improvement, Sauer-Danfoss has changed the side cover insert material to improve wear characteristics. The new material is more wear resistant than the previous material.

In order to track this change, new part numbers have been created and the old part numbers will be obsolete.



**Models affected** 93-2xxx, 94-2xxxx, 95-2xxx, 96-2xxxx, 97-2xxx, 98-2xxx, and 99-2xxx

**Serial numbers**

Frame size	NMS effectivity date	Ames effectivity date
42 cc	N-99-36-xxxxx	N/A
55 cc	N-00-18-xxxxx	A-00-18-xxxxx
75 cc	N-99-26-xxxxx	A-00-38-xxxxx
100 cc	N-99-31-xxxxx	A-00-38-xxxxx
130 cc	N-99-33-xxxxx	N/A
180 cc	N-99-36-xxxxx	N/A
250 cc	N-99-36-xxxxx	N/A

**Part numbers affected**

Frame size	Old part number	New part number
42 cc	506916	513885
55 cc	8000406	513886
75 cc	8000562	513888
100 cc	8200321	513889
130 cc	8300004	513890
180 cc	506914	513891
250 cc	506914	513891

**Parts disposition** ■ 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 swashplate bearing locator pin retention

**Description**

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.

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.

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.

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 up position, until the initial servicing of the pump assembly.

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.

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.

**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.

**Part numbers affected**

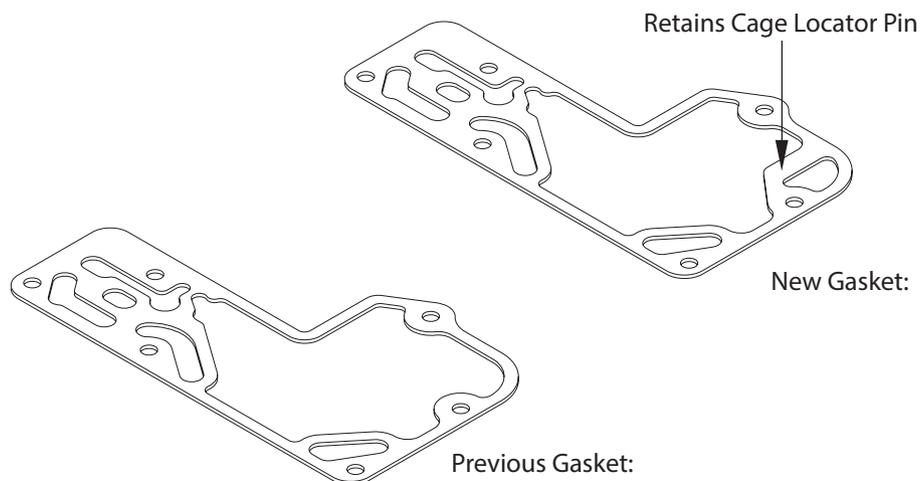
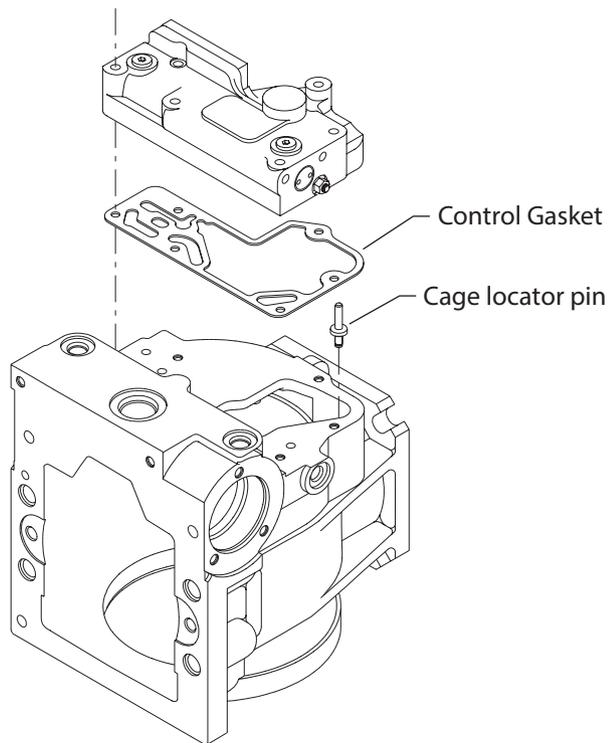
Previous gasket	New gasket
511608	8801241



Service Bulletin: SB-1999-065A

Parts disposition

■ Interchangeable





**Service Bulletin: SB-2000-022**

**Products affected** Series 90 75, 100, and 130 cc variable displacement pumps

**Subject** Displacement limiter screw and servo piston change

**Description** Sauer-Danfoss has identified a product issue affecting a limited number of Series 90 100cc variable displacement pumps built at the Ames, Iowa, USA facility in the time frame of June 2000 through August 2000 (serial date range A-00-23-xxxxx up to and including A-00-34-xxxxx). This same issue also affects a limited number of Series 90 75cc, 100cc, and 130cc variable displacement pumps built at the Neumunster, Germany facility in the time frame of June 2000 through September 2000 (serial date range N-00-23-xxxxx up to and including A-00-39-xxxxx).

These pumps, equipped with displacement limiters, may have a servo piston with large center drills. These large center drills may allow the displacement limiter screw to thread into the servo piston while turning the screw in against the servo piston while adjusting the pump's displacement. If this occurs, the pump will be mechanically held in stroke by the displacement limiter screw. This situation can only happen during adjustment; it will not occur during normal operation.

Sauer-Danfoss has introduced a change to the servo piston and the displacement limiter screw to prevent the reoccurrence of this issue. We have made a change to the servo piston to limit the size of the center drill. We have also changed the design of the service displacement limiter screw from a "flat" point to a "dog nose" point. When servicing a pump that meets the above criteria, you must verify that the displacement limiter screw of the new "dog nose" version. If it is not, you must replace the displacement limiter screw with the new version. If the pump is not inside the date code ranges and displacements mentioned, you do not need to verify the version of the displacement limiter screws.

To assist in tracking this change, we have issued new part numbers for the servo pistons and displacement limiter screws. Even though this issue did not affect the 42cc or 55cc pumps, the service displacement limiter screw part number will change also to keep one common service part. We do this as the same displacement limiter screw is used on 42cc, 55cc, 75cc, and 100cc pumps.



Old  
"Flat Point"  
Displacement Limiter Screw



New  
"Dog Nose"  
Displacement Limiter Screw



**Service Bulletin: SB-2000-022**

**Models affected**

All 95-2xxx, 952xxxx, 96-2xxx, 962xxxx, 97-2xxx, and 972xxxx variable displacement pumps. with 1, 2, 4, or P displacement limitation option.

**Serial numbers**

Sauer-Danfoss Ames 100cc production with serial number A-00-23-xxxxx up to and including A-00-34-xxxxx.

Sauer-Danfoss Neumunster, Germany production with serial number N-00-23-xxxxx up to and including A-00-39-xxxxx.

**Part numbers affected**

Frame size	Old servo piston	New servo piston	Old screw	New screw
42 & 55cc	N/A	N/A	9007712-0814	516677
75 cc	509282	516683	9007712-0814	516677
100 cc	509284	516684	9007712-0814	516677
130 cc	510496	516685	572180	516678

**Parts disposition**

- Interchangeable



**Service Bulletin: SB-2002-014**

**Products affected**

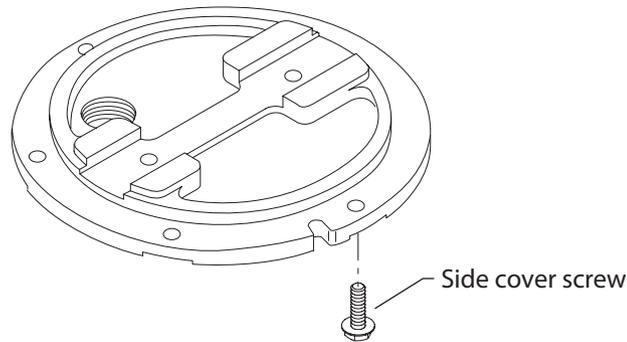
Series 90 42, 130, 180, and 250cc variable pumps

**Subject**

Side cover screw change

**Description**

Sauer-Danfoss has changed the locking compound used on the side cover screws. We have assigned new part numbers to track this change. The old screw part numbers are obsolete. They are no longer available for service.



**Models affected**

All 42, 130, 180, and 250 cc variable pumps

**Serial numbers**

N/A

**Part numbers affected**

Description	Previous part number	New part number
Screw-hex flange, M6 x 16	508437	517229
Screw-hex flange, M10 x 20	508439	517230
Screw-hex flange, M10 x 25	508441	517231

**Parts disposition**

■ Interchangeable

**Service Bulletin: SB-2007-008A**

**Products affected** Series 90 130 cc variable pumps

**Subject** Redesign block point change

**Part numbers affected** As a global improvement, the series 90 130cc pump has the following redesigned components: servo arm, swashplate guide, pump housing, shaft seal assembly, cradle bearing, swashplate locator link pin, servo arm screw, and leveler.

All parts are non-interchangeable with the exception of the locator link pin and shaft seal assembly. Model numbers and order codes will not be changed.

**Servo arm:** 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.

**Swashplate Guide:** 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 swashplate hold-down. 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 separate swashplate guide will remain available as a service part for a period of time.

**Housing:** The housing is modified internally to provide the servo arm pivot. Also, the cradle and side cover radii are reduced. Some customers may notice cosmetic external changes. The old housing will be obsoleted and no longer available as a service part.

**Shaft seal assembly:** The shaft seal assembly is interchangeable, but the piece parts are not. The new lip seal has a smaller O.D. and the I.D. of the seal carrier changed accordingly. The old shaft lip seal will remain available as a service part.

**Overhaul seal kit:** A new overhaul seal kit has been created that will service both old and new design pumps. The new seal kit also has additional O-rings and seal nuts required for a more complete repair. The old seal kit will be obsoleted and no longer available.

**Cradle bearing:** The new design is cold formed with the positioning pin now integral with the bearing. The old cradle bearing will remain available as a service part for a period of time.

**Locator link pin:** The new locator link pin has a rubber gripping element added to help hold it in position during assembly. The new locator link pin is interchangeable with the old locator link pin. The old locator link pin is obsolete and no longer available for service.

**Screw:** One of the two screws that hold the servo arm to the swashplate has changed from a M10 to a M8 screw. See drawing for details.

**Leveler:** All 130cc pumps now use a leveler and two spring seats. The new leveler plus spring seats are interchangeable with the old leveler. The old leveler is obsolete and no longer available for service.



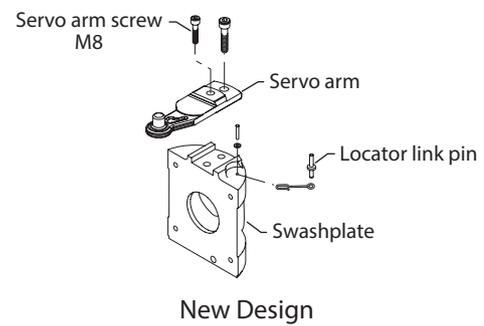
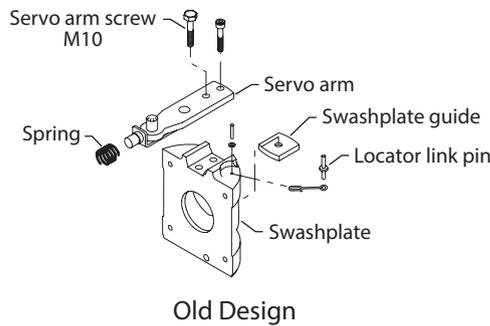
**Service Bulletin: SB-2007-008A**

**Models affected** All series 90 130 cc variable pumps

**Serial numbers** Change occurred at serial number N-07-10-xxxxx

**Part numbers affected**

Description	Old part number	New part number
Servo arm	303214	11000397
Servo arm screw	9007276-0111	519150
Swashplate	516204	11001678
Pin	754606	11003805
Cradle bearing	324657	11000866
Swashplate guide	766022	Not Used
Spring	303420	Not Used
Seal carrier assembly	510018	519732
Shaft lip seal	90080000-0114	519021
Housing	503426	11000395
Housing PPU special	515350	11006984
Housing PPU assembly	8510060	11026913
Side cover	501576	11001326
Leveler	508311	511052
Spring seats	None	8300011
Overhaul seal kit	83020530	11035671



**Parts disposition**

■ Interchangeable - piece parts are not interchangeable



**Service Bulletin: SB-2009-074**

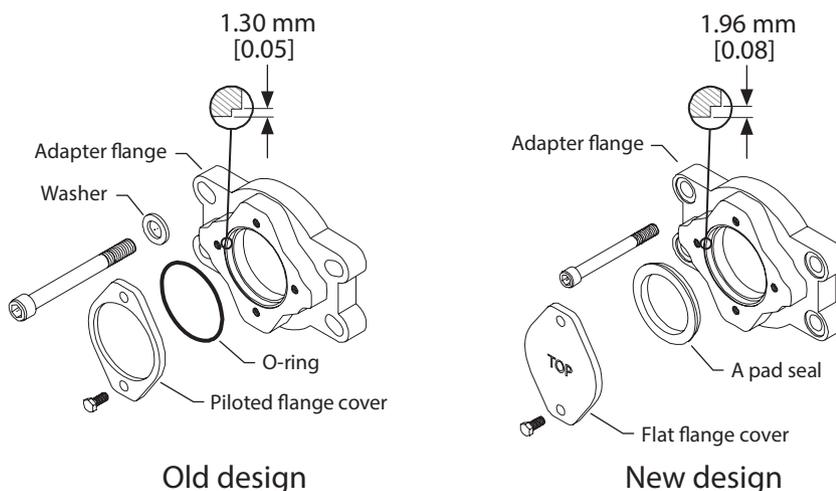
**Products affected** Series 90 42, 130, 180 and 250cc variable pumps

**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**

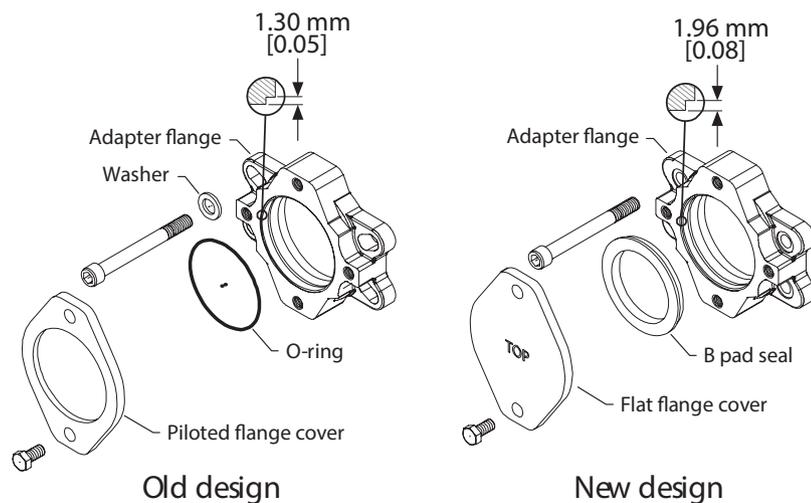
**Products affected** Series 90 42, 130, 180 and 250cc variable pumps

**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**

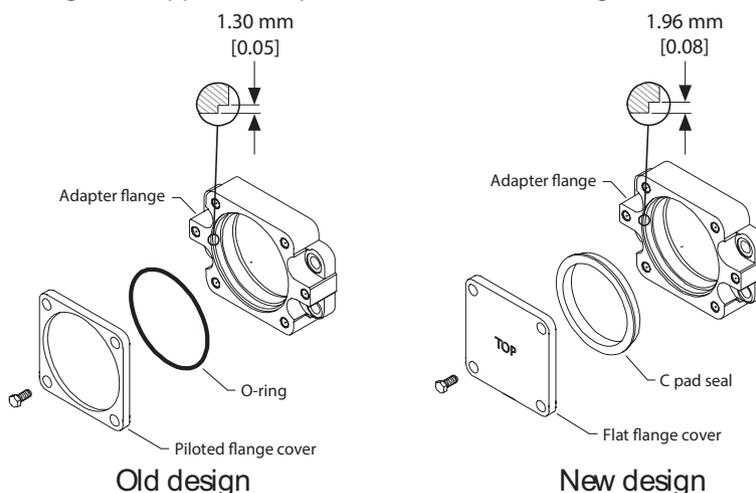
**Products affected** Series 90 130, 180 and 250cc variable pumps

**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 [0.103"] 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.



**Products we offer:**

- Bent Axis Motors
- Closed Circuit Axial Piston Pumps and Motors
- Displays
- Electrohydraulic Power Steering
- Electrohydraulics
- Hydraulic Power Steering
- Integrated Systems
- Joysticks and Control Handles
- Microcontrollers and Software
- Open Circuit Axial Piston Pumps
- Orbital Motors
- PLUS+1® GUIDE
- Proportional Valves
- Sensors
- Steering
- Transit Mixer Drives

**Danfoss Power Solutions** is a global manufacturer and supplier of high-quality hydraulic and electronic components. We specialize in providing state-of-the-art technology and solutions that excel in the harsh operating conditions of the mobile off-highway market. Building on our extensive applications expertise, we work closely with our customers to ensure exceptional performance for a broad range of off-highway vehicles.

We help OEMs around the world speed up system development, reduce costs and bring vehicles to market faster.

Danfoss – Your Strongest Partner in Mobile Hydraulics.

**Go to [www.powersolutions.danfoss.com](http://www.powersolutions.danfoss.com) for further product information.**

Wherever off-highway vehicles are at work, so is Danfoss.

We offer expert worldwide support for our customers, ensuring the best possible solutions for outstanding performance. And with an extensive network of Global Service Partners, we also provide comprehensive global service for all of our components.

Please contact the Danfoss Power Solution representative nearest you.

**Comatrol**

[www.comatrol.com](http://www.comatrol.com)

**Schwarzmueller-Inverter**

[www.schwarzmueller-inverter.com](http://www.schwarzmueller-inverter.com)

**Turolla**

[www.turollaocg.com](http://www.turollaocg.com)

**Valmova**

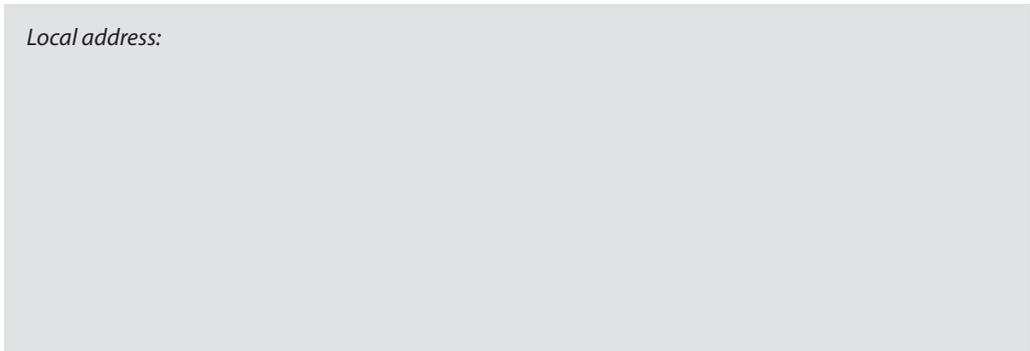
[www.valmova.com](http://www.valmova.com)

**Hydro-Gear**

[www.hydro-gear.com](http://www.hydro-gear.com)

**Daikin-Sauer-Danfoss**

[www.daikin-sauer-danfoss.com](http://www.daikin-sauer-danfoss.com)



**Danfoss Power Solutions US Company**

2800 East 13th Street  
Ames, IA 50010, USA  
Phone: +1 515 239 6000

**Danfoss Power Solutions GmbH & Co. OHG**

Krokamp 35  
D-24539 Neumünster, Germany  
Phone: +49 4321 871 0

**Danfoss Power Solutions ApS**

Nordborgvej 81  
DK-6430 Nordborg, Denmark  
Phone: +45 7488 2222

**Danfoss Power Solutions**

22F, Block C, Yishan Rd  
Shanghai 200233, China  
Phone: +86 21 3418 5200

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.