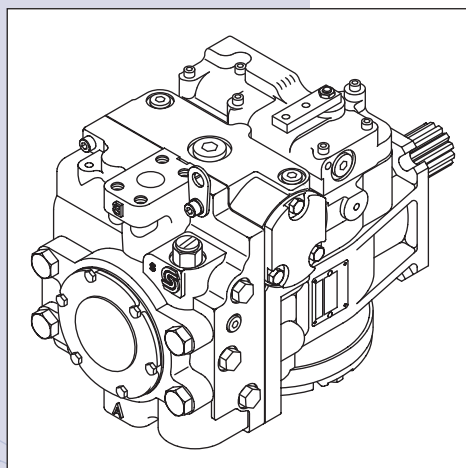
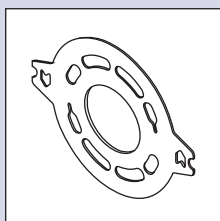
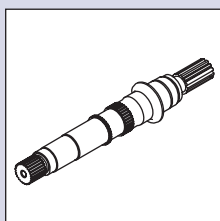
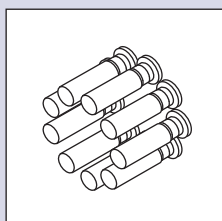
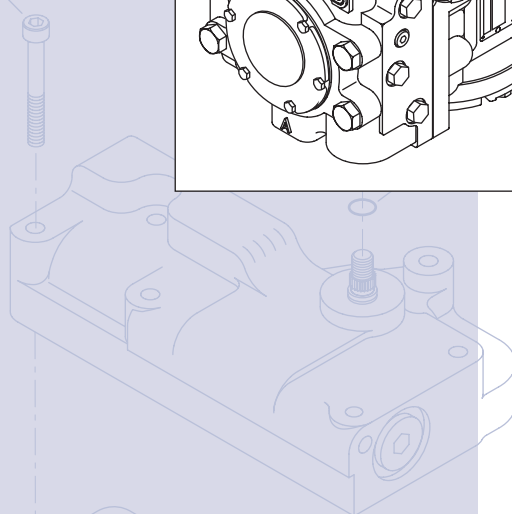


Series 90
130 cc Axial Piston
Pump

Parts Manual



M90



*M11



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Front cover illustrations: P100 609, P100 681, P100 680, P100 679

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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.



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
	E10	92-19		746107	Side cover	1
	E10	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.

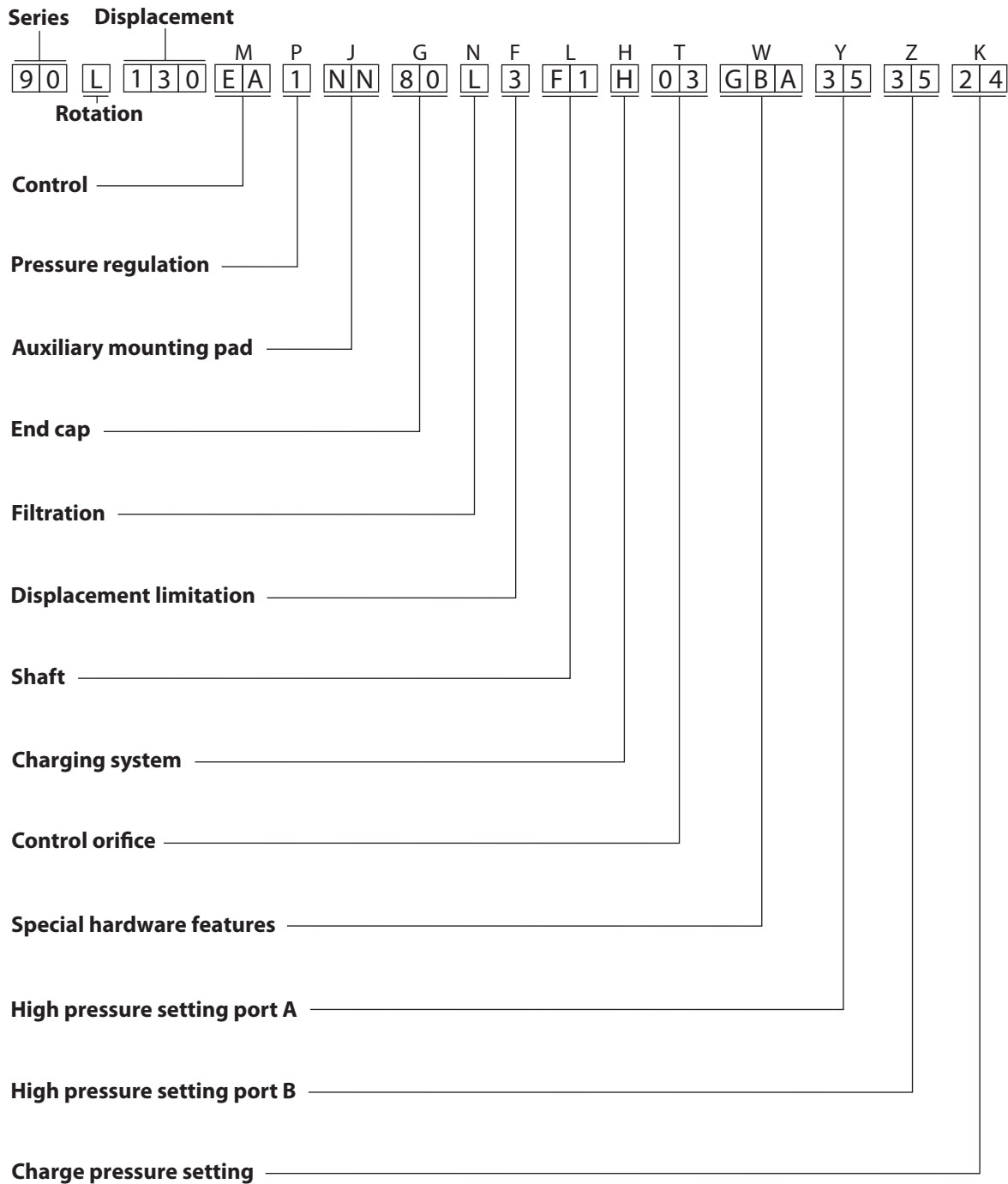
1) Referring to the input shaft module in the Order Code (see page 7), the input shaft option for this pump is identified by the code "F1". (90L130 EA 1 NN 80 L 3 **F1** H 03 GBA 35 35 24)

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.

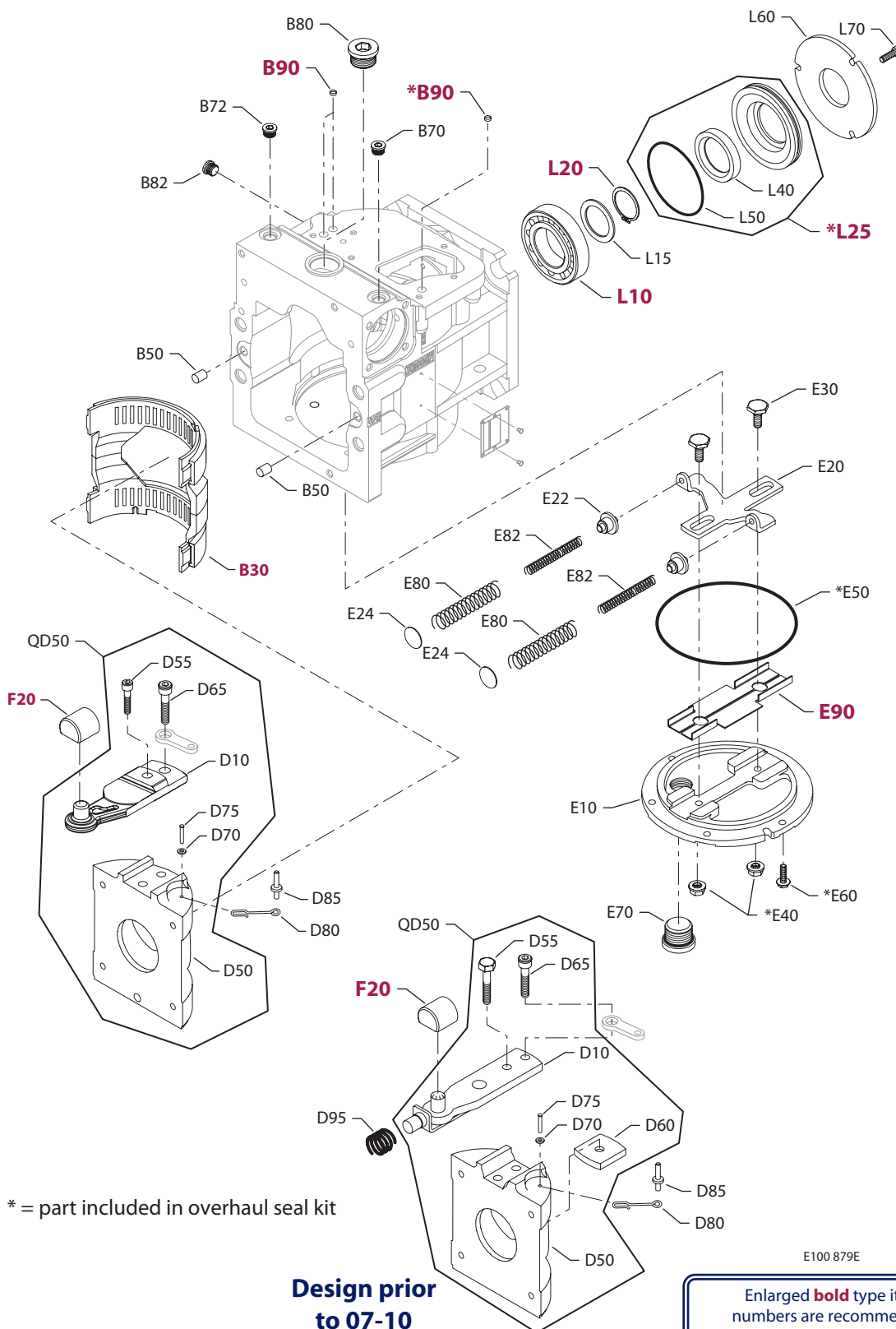


Series 90 130 cc Axial Piston Pump
Parts Manual
Notes





P100 713E

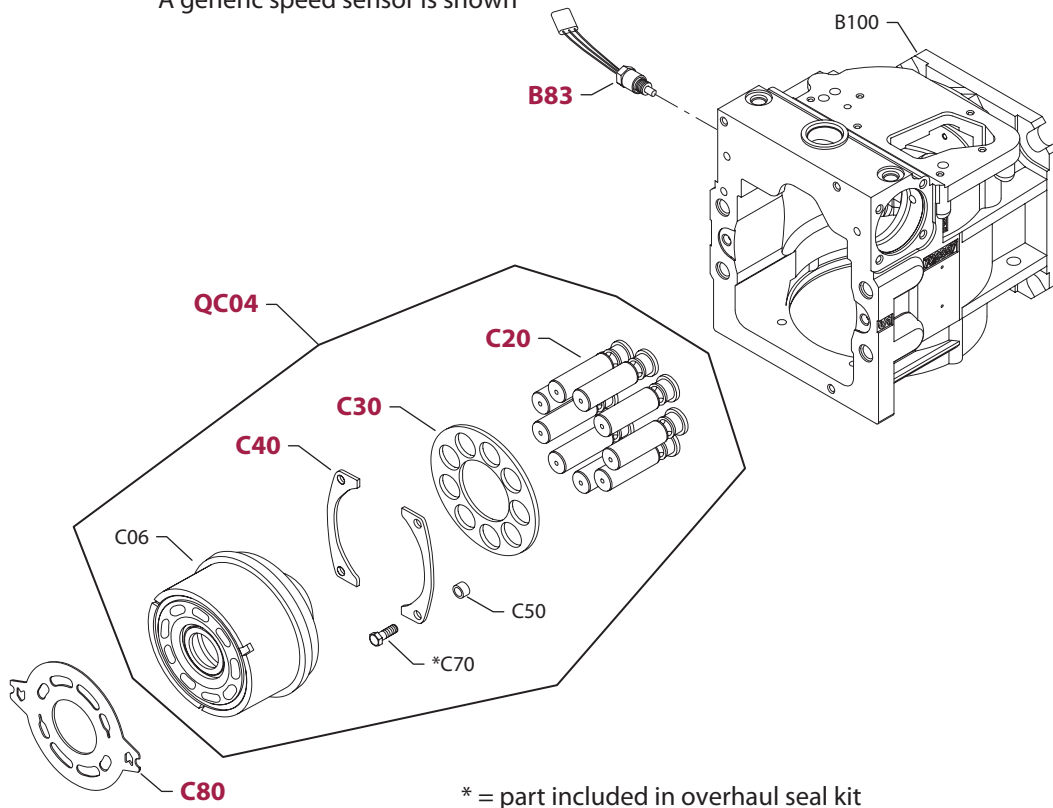


COMMON PARTS

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	B30	07-10		11000866	Cradle bearing assembly (SB-2007-008A)	1
	B30	89-41	07-09	324657	Cradle bearing assembly	1
	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	536649 (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	96-02	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		8300011	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		11000317	Slider block	1
	L10	89-41		11018484	Roller bearing	1
	L15	89-41		376319	Shim	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
	QD50	07-10		11031840	Swashplate kit	1
	QD50	88-16	07-09	521382	Swashplate kit (SB-2007-008A)	1

(EAT, EBA, EDB & EDD)

A generic speed sensor is shown

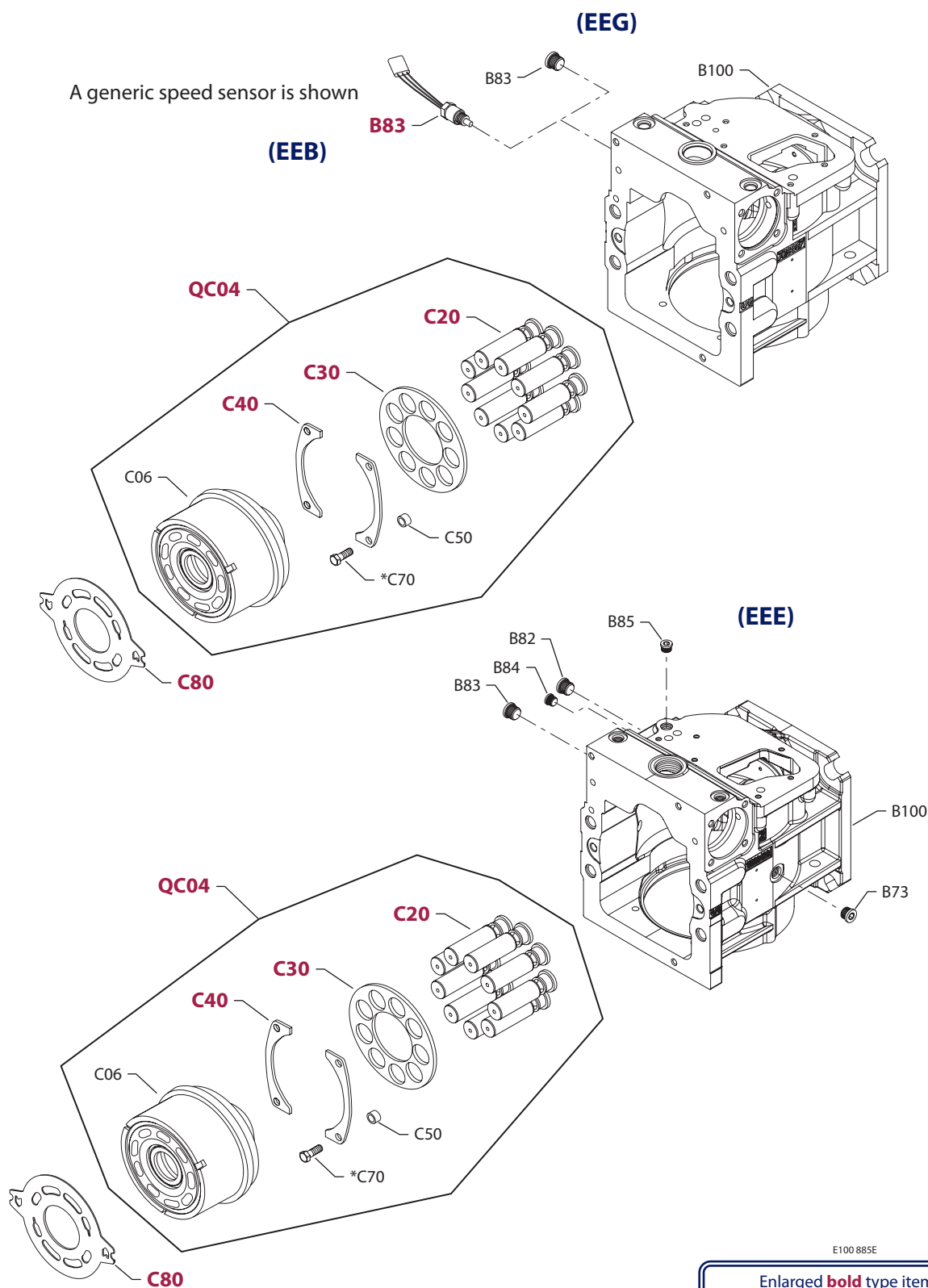


E100 882E

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

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		735506	Slipper guide	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		519275	Cylinder block kit, with speed ring	1
EBA	B83	92-19		KPPG13408	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		735506	Slipper guide	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
EDB	B83	92-19	08-03	KPPG15408	Speed sensor	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
	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	735506	Slipper guide	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
	QC04	92-19	08-03	519275	Cylinder block kit, with speed ring	1
EDD	B83	92-19		KPPG12408	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		735506	Slipper guide	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		519275	Cylinder block kit, with speed ring	1

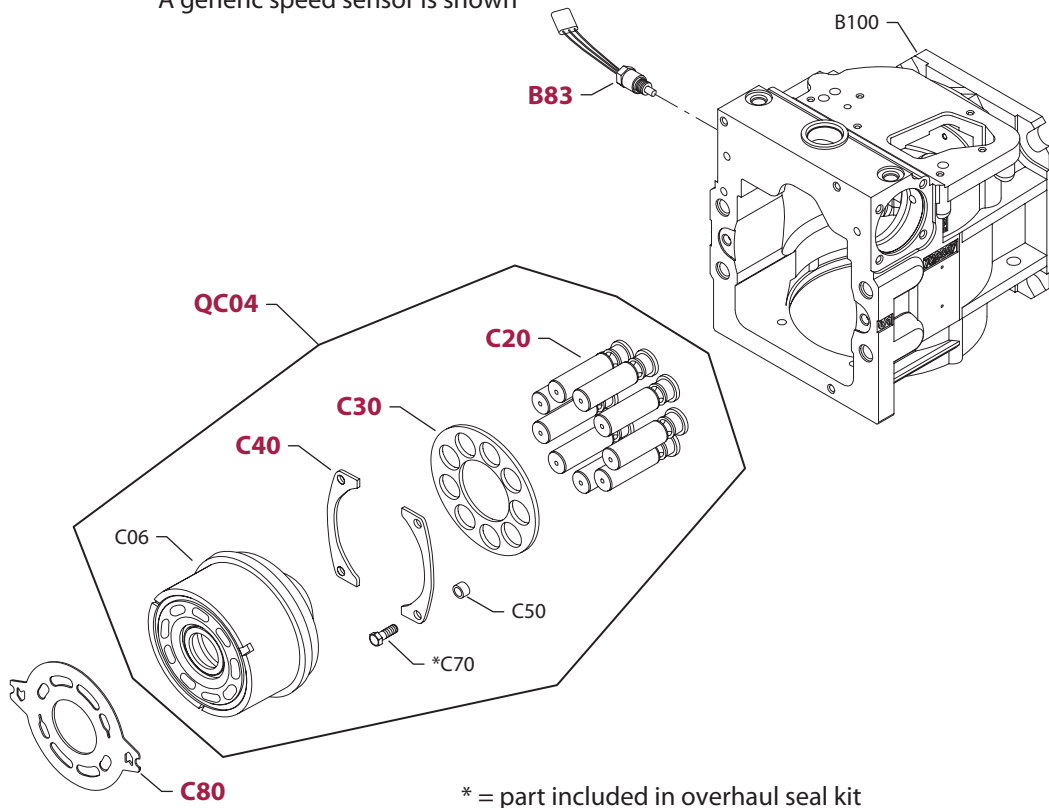


SPECIAL HARDWARE

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		735506	Slipper guide	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		140644	Plug assembly	1
	B83	00-13		140644	Plug assembly	1
	B84	00-13		509603	Plug assembly, M10 x 1	1
	B85	00-13		509603	Plug assembly, M10 x 1	1
	B100	07-10		11006984	Housing (SB-2007-008A)	1
	B100	00-13	07-09	515350	Housing (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		735506	Slipper guide	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
	QC04	00-13		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		735506	Slipper guide	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

(EFC, EFI, EFM & EGA)

A generic speed sensor is shown



E100 882E

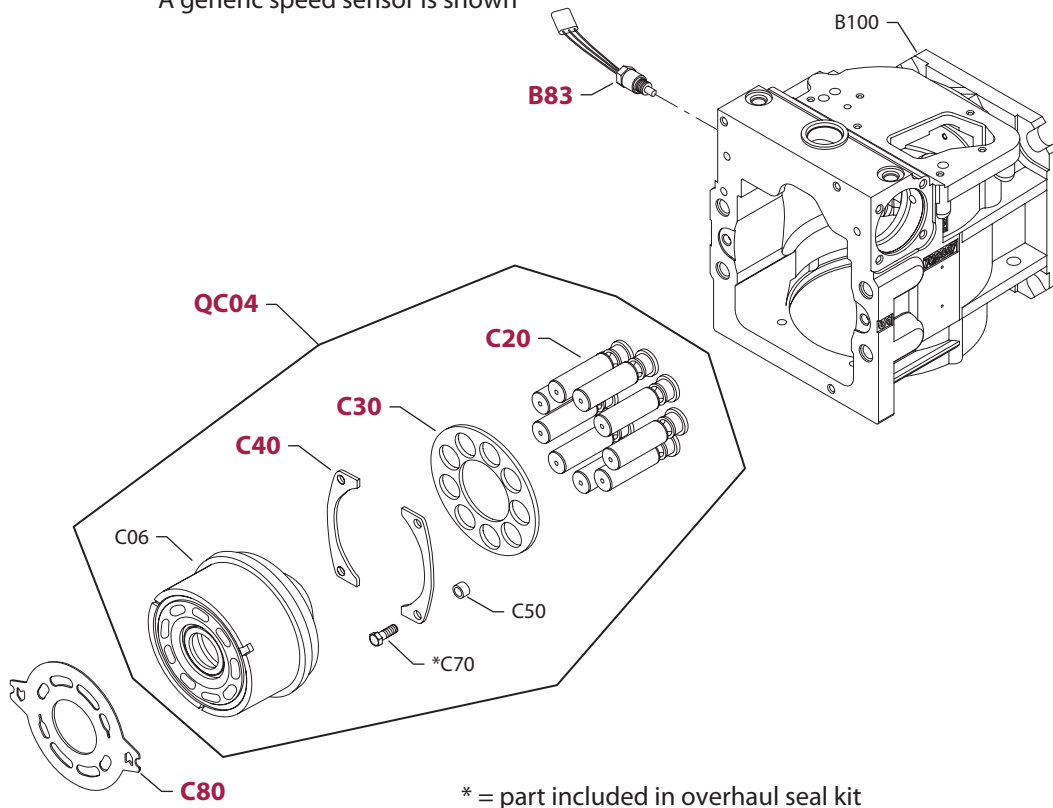
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		735506	Slipper guide	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
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		735506	Slipper guide	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		KPPG156	Speed sensor	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	98-31	07-09	8510060	Housing assembly (SB-1992-003)	1
	C06	98-31		519259	Cylinder block assy., with speed ring	1
	C20	98-31		727750	Piston assembly, welded	9
	C30	98-31		735506	Slipper guide	1
	C40	98-31		700963	Slipper guide bearing	2
	C50	98-31		509015	Spacer	4
	C70	98-31		308643	Screw	4
	C80	98-31		518808	Valve plate	1
	QC04	98-31		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		735506	Slipper guide	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

(EHA & EHB)

A generic speed sensor is shown

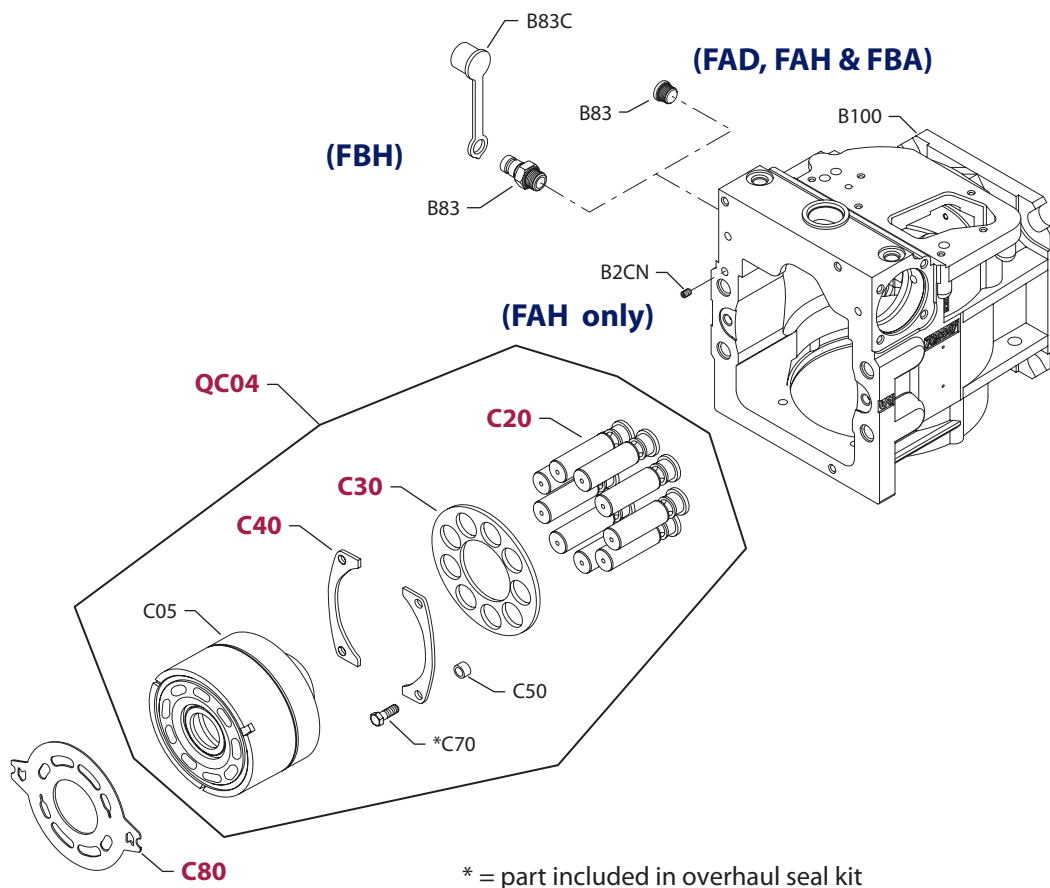


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Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		735506	Slipper guide	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		KPPG16408	Speed sensor	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	02-47	07-09	8510060	Housing assembly (SB-1992-003)	1
	C06	02-47		519259	Cylinder block assy., with speed ring	1
	C20	02-47		727750	Piston assembly, welded	9
	C30	02-47		735506	Slipper guide	1
	C40	02-47		700963	Slipper guide bearing	2
	C50	02-47		509015	Spacer	4
	C70	02-47		308643	Screw	4
	C80	02-47		518808	Valve plate	1
	QC04	02-47		519275	Cylinder block kit, with speed ring	1

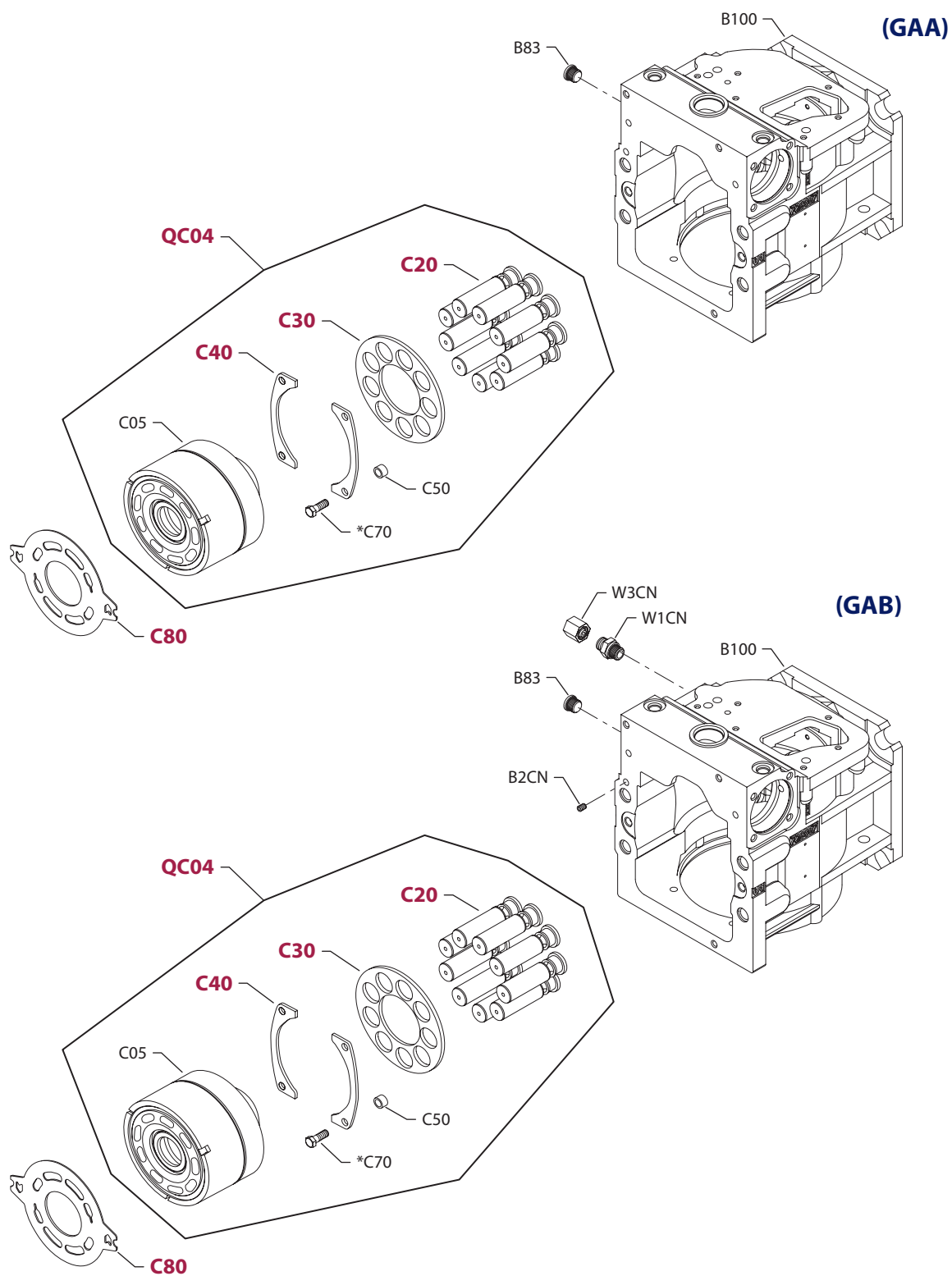


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Enlarged **bold** type item numbers are recommended part to stock for servicing.

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	92-19		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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
FAH	B2CN	92-19		775312	Set screw	1
	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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	1
	C40	92-19		700963	Slipper guide bearing	2
	C50	92-19		509015	Spacer	4
	C70	92-19		308643	Screw	4
	C80	92-19		518935	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	08-44		519258	Cylinder block assembly	1
	C20	08-44		727750	Piston assembly, welded	9
	C30	08-44		735506	Slipper guide	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	
	B100	10-06		11026913	Housing assembly	1
	C05	10-06		519258	Cylinder block assembly	1
	C20	10-06		727750	Piston assembly, welded	9
	C30	10-06		735506	Slipper guide	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



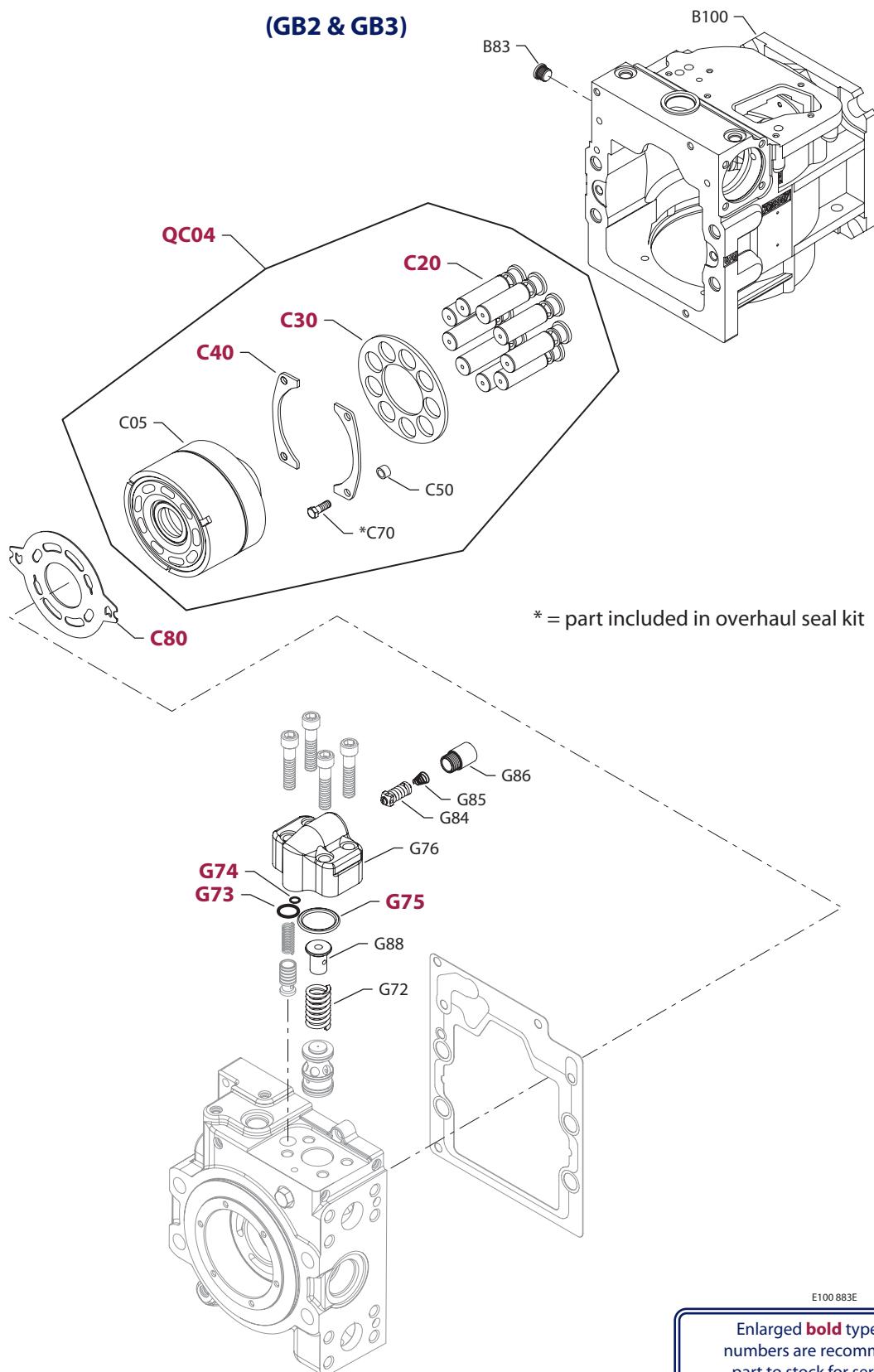
* = part included in overhaul seal kit

E100 886E

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

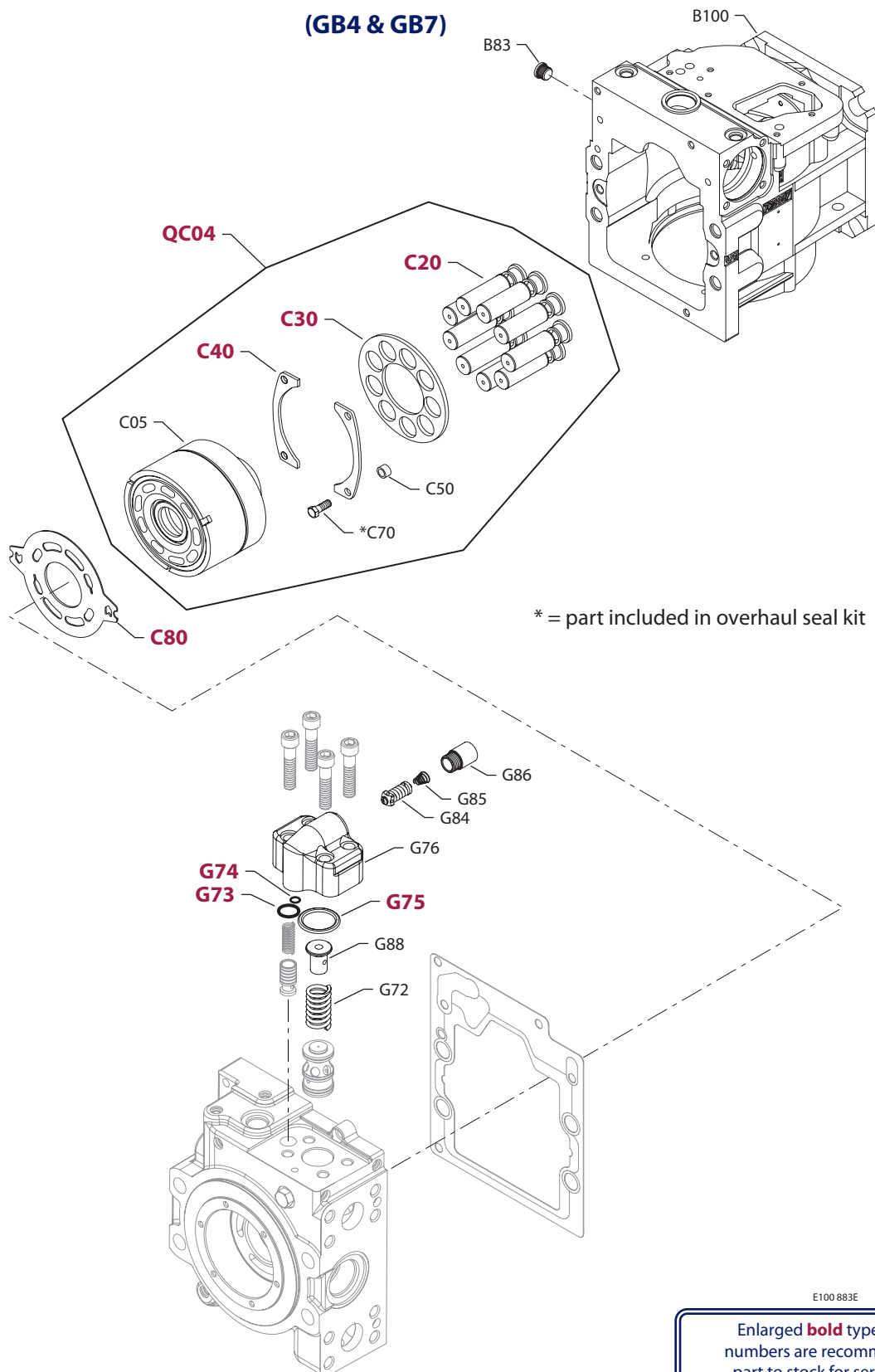
SPECIAL HARDWARE

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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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	08-03	519258	Cylinder block assembly	1
	C20	92-19	08-03	727750	Piston assembly, welded	9
	C30	92-19	08-03	735506	Slipper guide	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



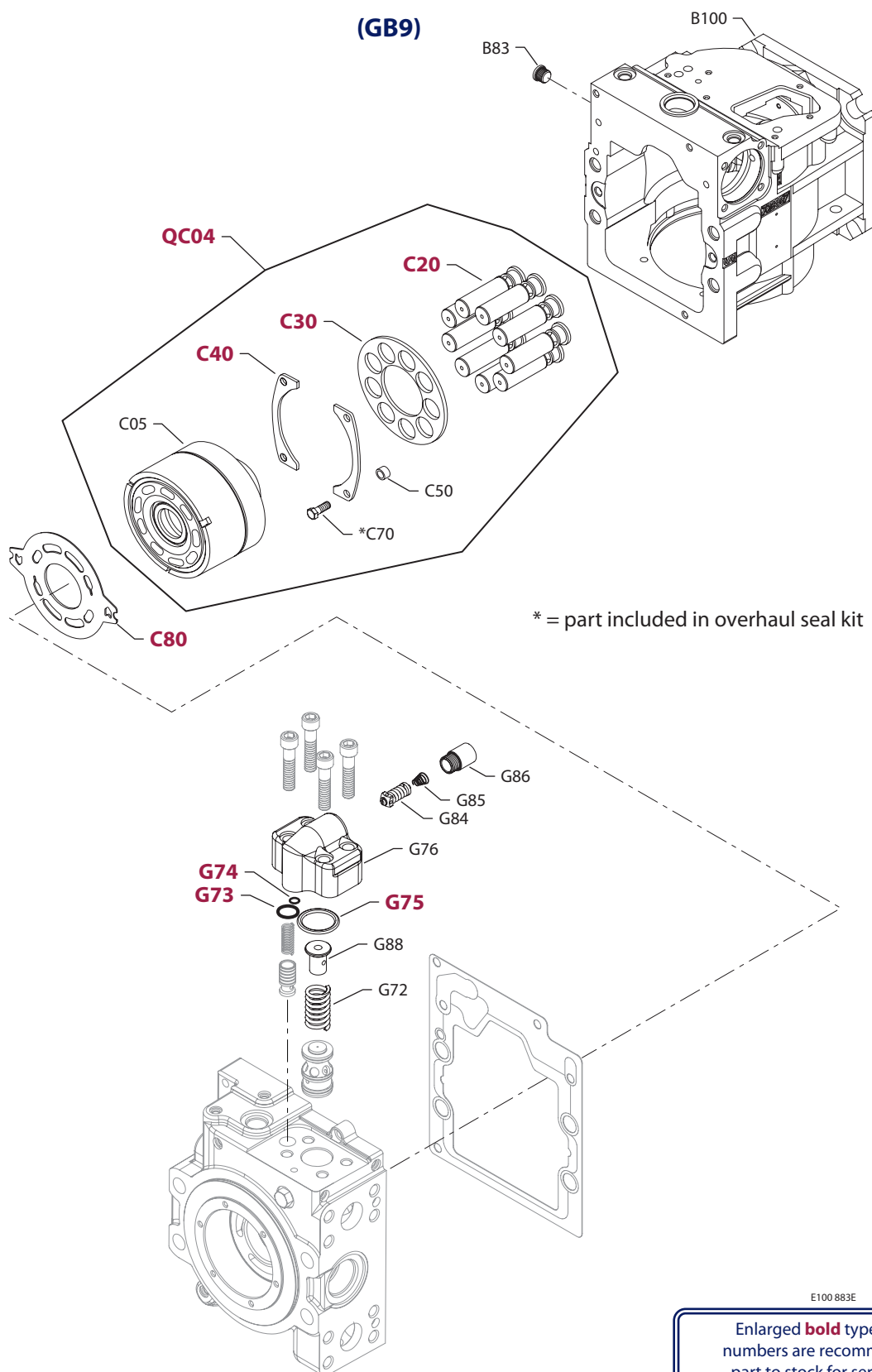
SPECIAL HARDWARE

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		735506	Slipper guide	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		3104295	Plug assembly	1
	G88	02-30		517829	Spring guide	1
	G89	02-30		517831	Spring	1
	QC04	02-30		11086179	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		735506	Slipper guide	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		3104295	Plug assembly	1
	G88	02-30		517829	Spring guide	1
	G89	02-30		517831	Spring	1
	QC04	02-30		11086179	Cylinder block kit	1



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		735506	Slipper guide	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		3104295	Plug assembly	1
	G88	92-19		517829	Spring guide	1
	G89	92-19		517831	Spring	1
	QC04	92-19		11086179	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		735506	Slipper guide	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		3104295	Plug assembly	1
	G88	05-34		517829	Spring guide	1
	G89	05-34		517831	Spring	1
	QC04	05-34		11086179	Cylinder block kit	1



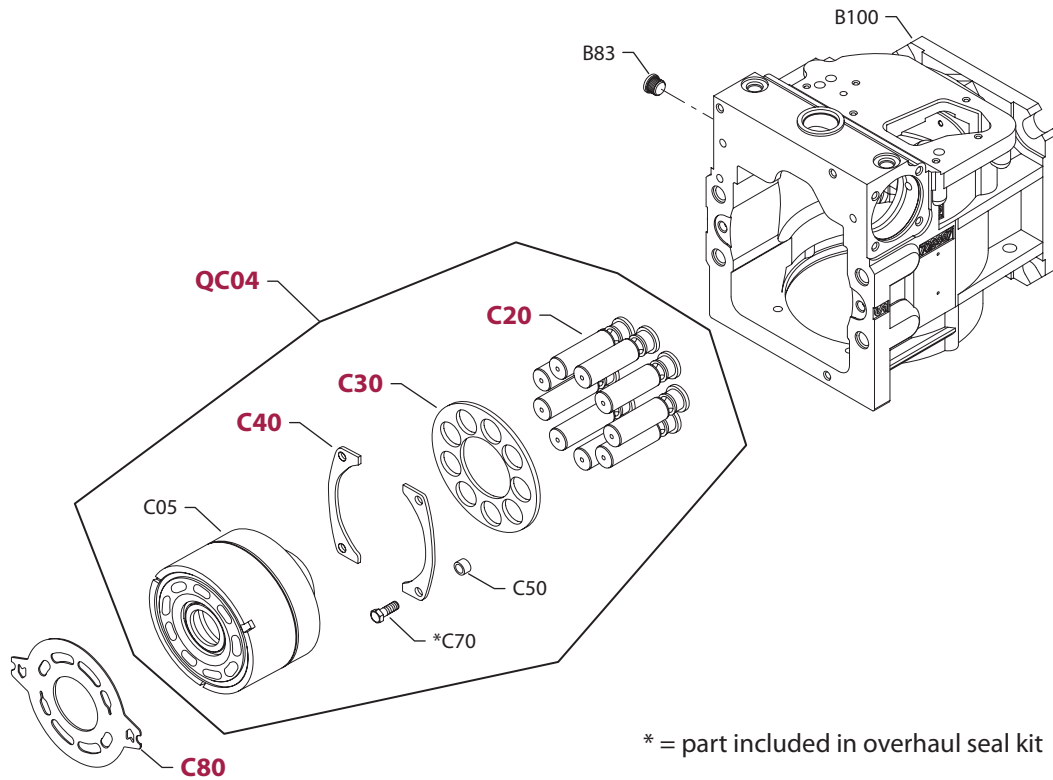
E100 883E

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

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		735506	Slipper guide	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		3104295	Plug assembly	1
	G88	06-34		517829	Spring guide	1
	G89	06-34		517831	Spring	1
	QC04	06-34		11086179	Cylinder block kit	1

(GBA, GBE & GBK)

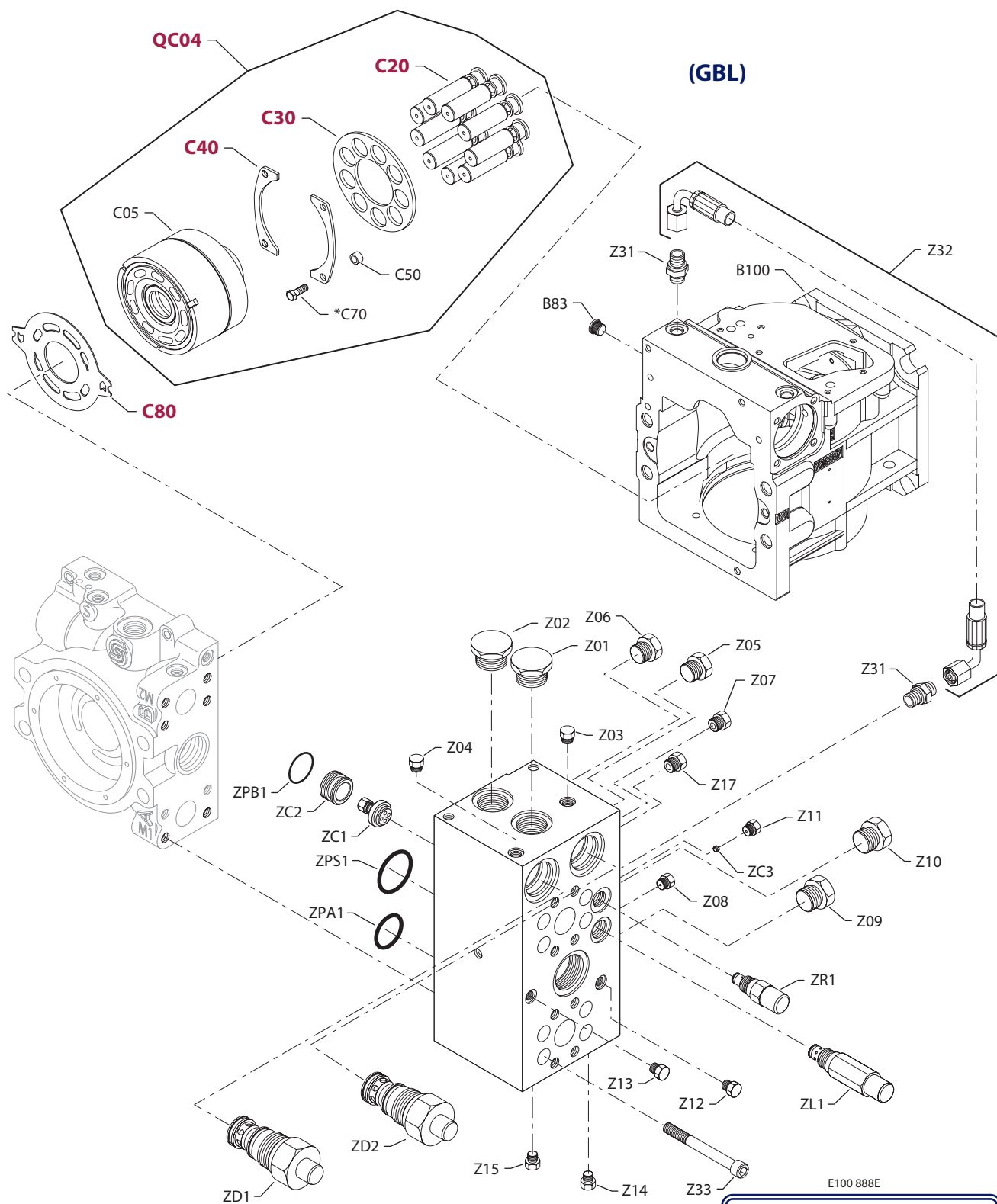


E100 887E

Enlarged **bold** type item
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part to stock for servicing.

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		519258	Cylinder block assembly, without speed ring	1
	C20	89-41		727750	Piston assembly, welded	9
	C30	89-41		735506	Slipper guide	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		519258	Cylinder block assembly, without speed ring	1
	C20	89-41		727750	Piston assembly, welded	9
	C30	89-41		735506	Slipper guide	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	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		519258	Cylinder block assembly, without speed ring	1
	C20	89-41		727750	Piston assembly, welded	9
	C30	89-41		735506	Slipper guide	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



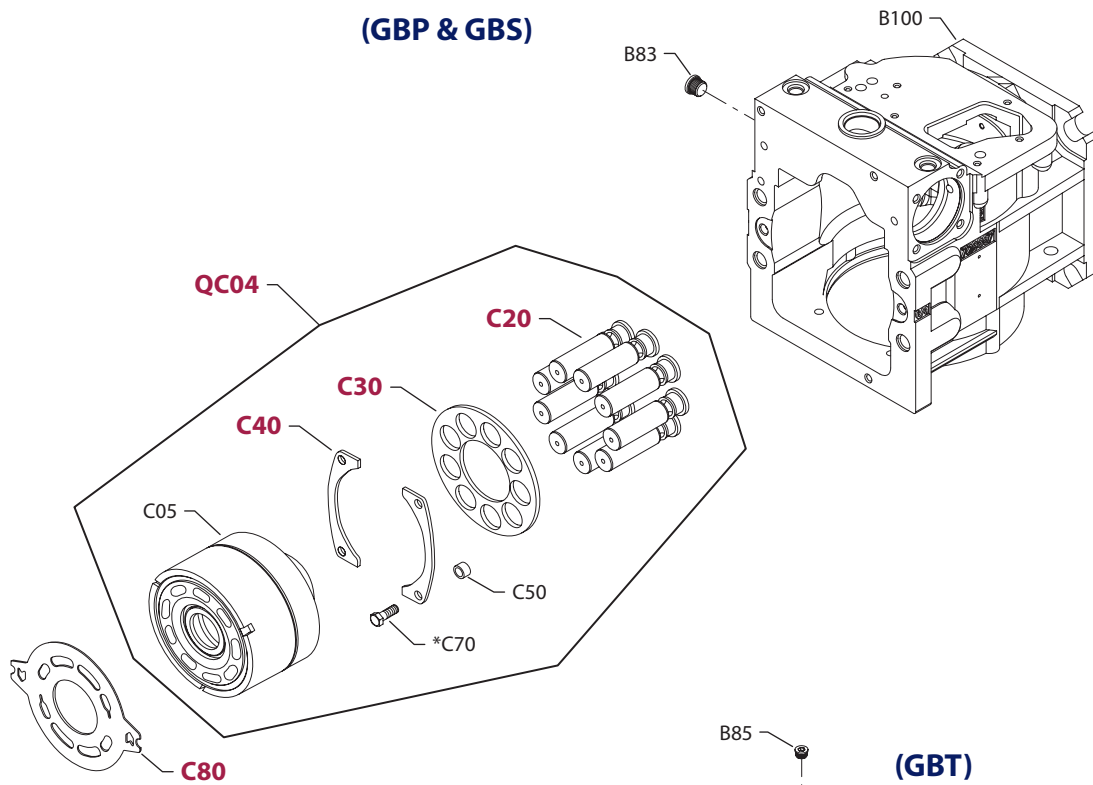
* = part included in overhaul seal kit

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

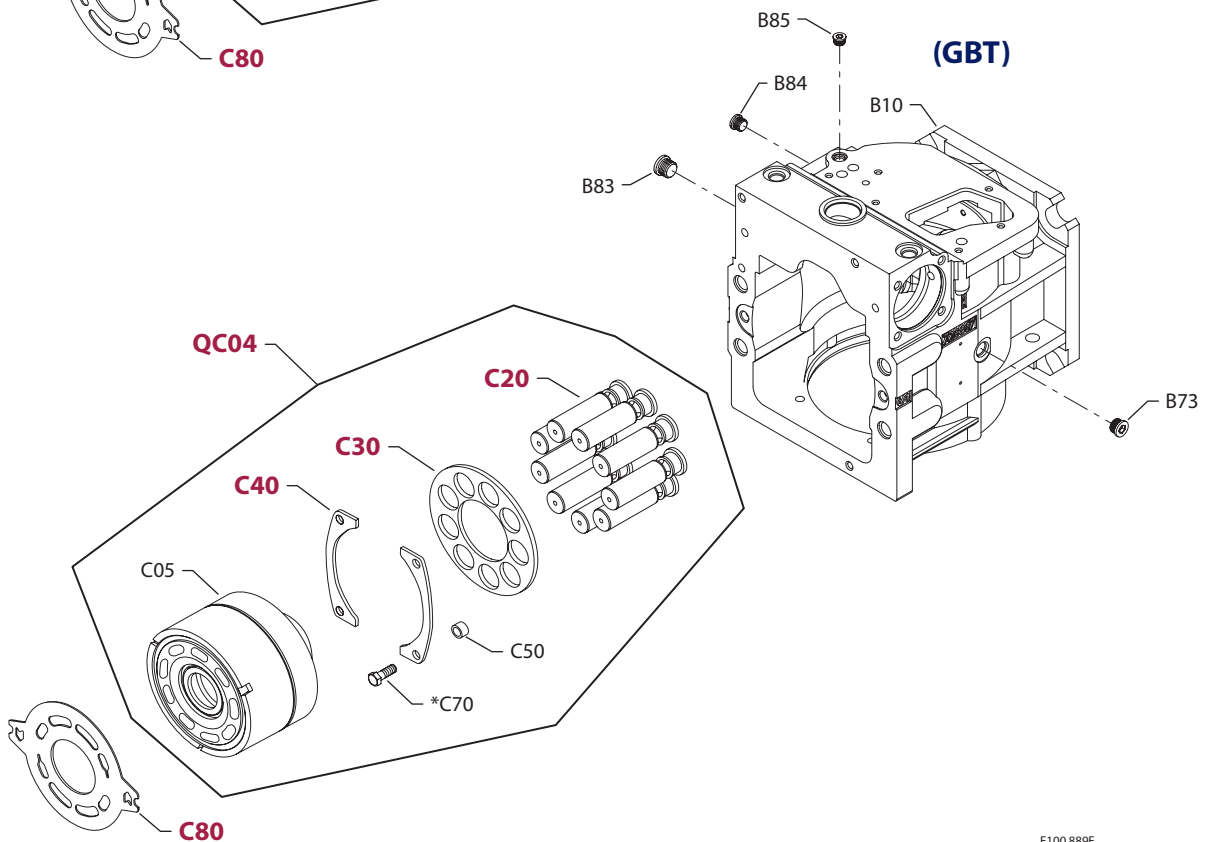
SPECIAL HARDWARE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GBL	B83	00-25		140644	Plug assembly	1
	B100	07-10		11026913	Housing assembly (SB-2007-008A)	1
	B100	00-25	07-09	8510060	Housing assembly (SB-1992-003)	1
	C05	00-25		519258	Cylinder block assembly, without speed ring	1
	C20	00-25		727750	Piston assembly, welded	9
	C30	00-25		735506	Slipper guide	1
	C40	00-25		700963	Slipper guide bearing	2
	C50	00-25		509015	Spacer	4
	C70	00-25		308643	Screw	4
	C80	00-25		518807	Valve plate	1
	QC04	00-25		738211	Cylinder block kit	1
	Z01	00-25		516748	Plug assembly	1
	Z02	00-25		516748	Plug assembly	1
	Z03	00-25		516742	Plug assembly	1
	Z04	00-25		516742	Plug assembly	1
	Z05	00-25		516744	Plug assembly	1
	Z06	00-25		516744	Plug assembly	1
	Z07	00-25		516745	Plug assembly	1
	Z08	00-25		516742	Plug assembly	1
	Z09	00-25		516748	Plug assembly	1
	Z10	00-25		516748	Plug assembly	1
	Z11	00-25		516742	Plug assembly	1
	Z12	00-25		516750	Plug assembly	1
	Z13	00-25		516750	Plug assembly	1
	Z14	00-25		516750	Plug assembly	1
	Z15	00-25		516750	Plug assembly	1
	Z17	00-25		516745	Plug assembly	1
	Z31	00-25		516137	Connector	2
	Z32	00-25		516134	Hydraulic hose	1
	Z33	00-25		019471	Screw	8
	ZC1	00-25		516720	Check valve	1
	ZC2	00-25		516721	Retainer	1
	ZC3	00-25		516747	Headless screw	1
	ZD1	00-25		516754	Pressure regulator	1
	ZD2	00-25		516754	Pressure regulator	1
	ZL1	00-25		516729	Relief valve	1
	ZR1	00-25		516733	Relief valve	1

(GBP & GBS)



(GBT)



* = part included in overhaul seal kit

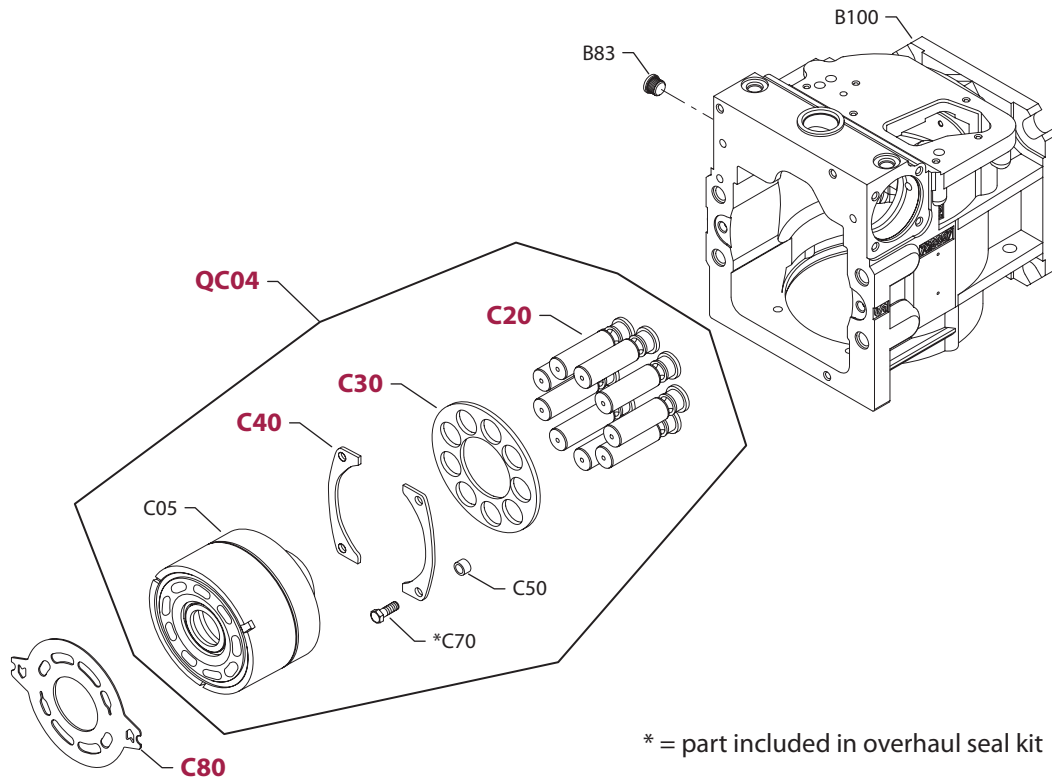
E100 889E

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

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		519258	Cylinder block assembly	1
	C20	06-17		727750	Piston assembly, welded	9
	C30	06-17		735506	Slipper guide	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	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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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	1
	B10	92-19	07-09	515350	Housing (SB-2007-008A)	1
	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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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

(GBV, GBW & GBY)



E100 887E

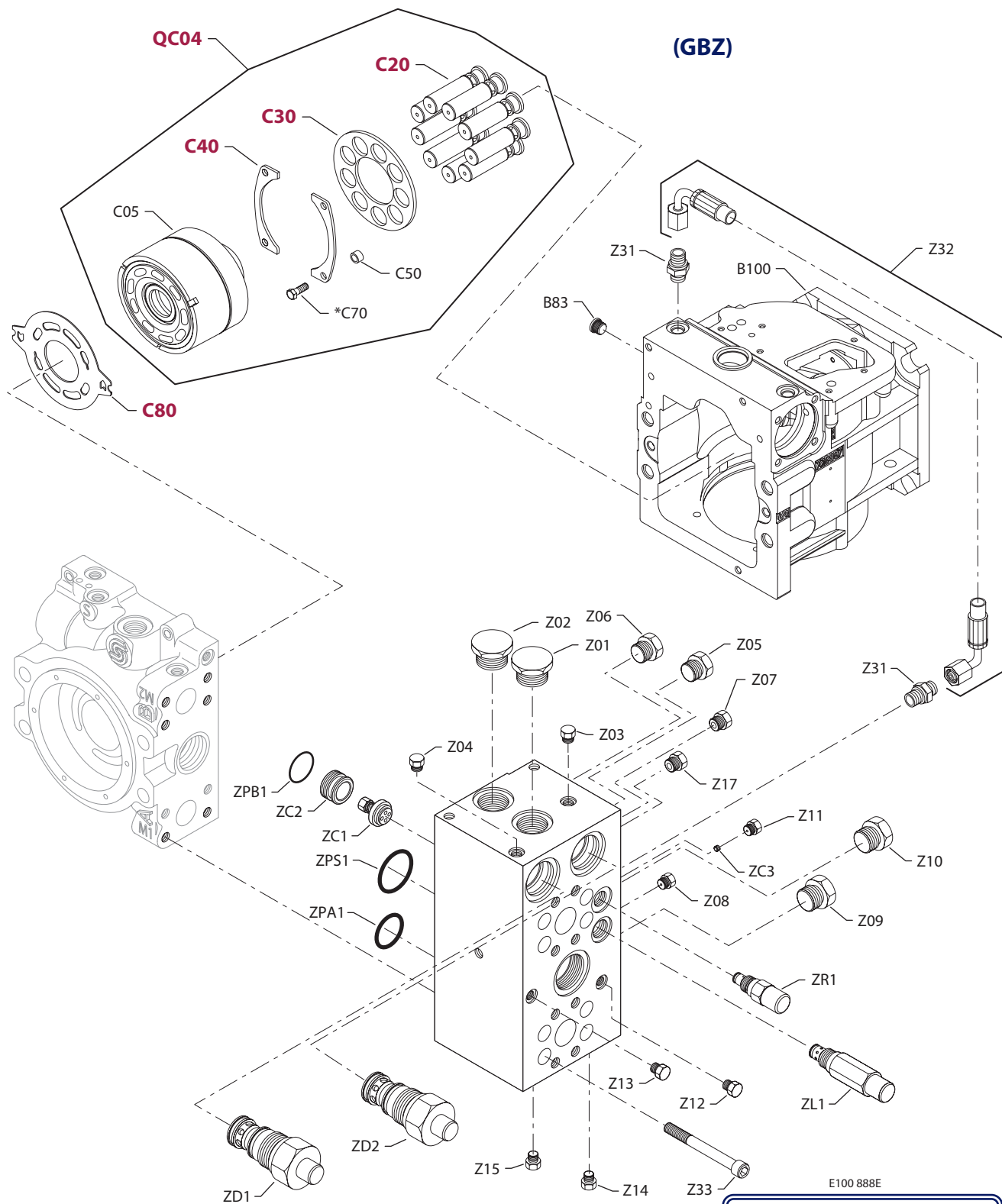
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		519258	Cylinder block assembly	1
	C20	00-05		727750	Piston assembly, welded	9
	C30	00-05		735506	Slipper guide	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		519258	Cylinder block assembly	1
	C20	99-50		727750	Piston assembly, welded	9
	C30	99-50		735506	Slipper guide	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		519258	Cylinder block assembly	1
	C20	99-52		727750	Piston assembly, welded	9
	C30	99-52		735506	Slipper guide	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

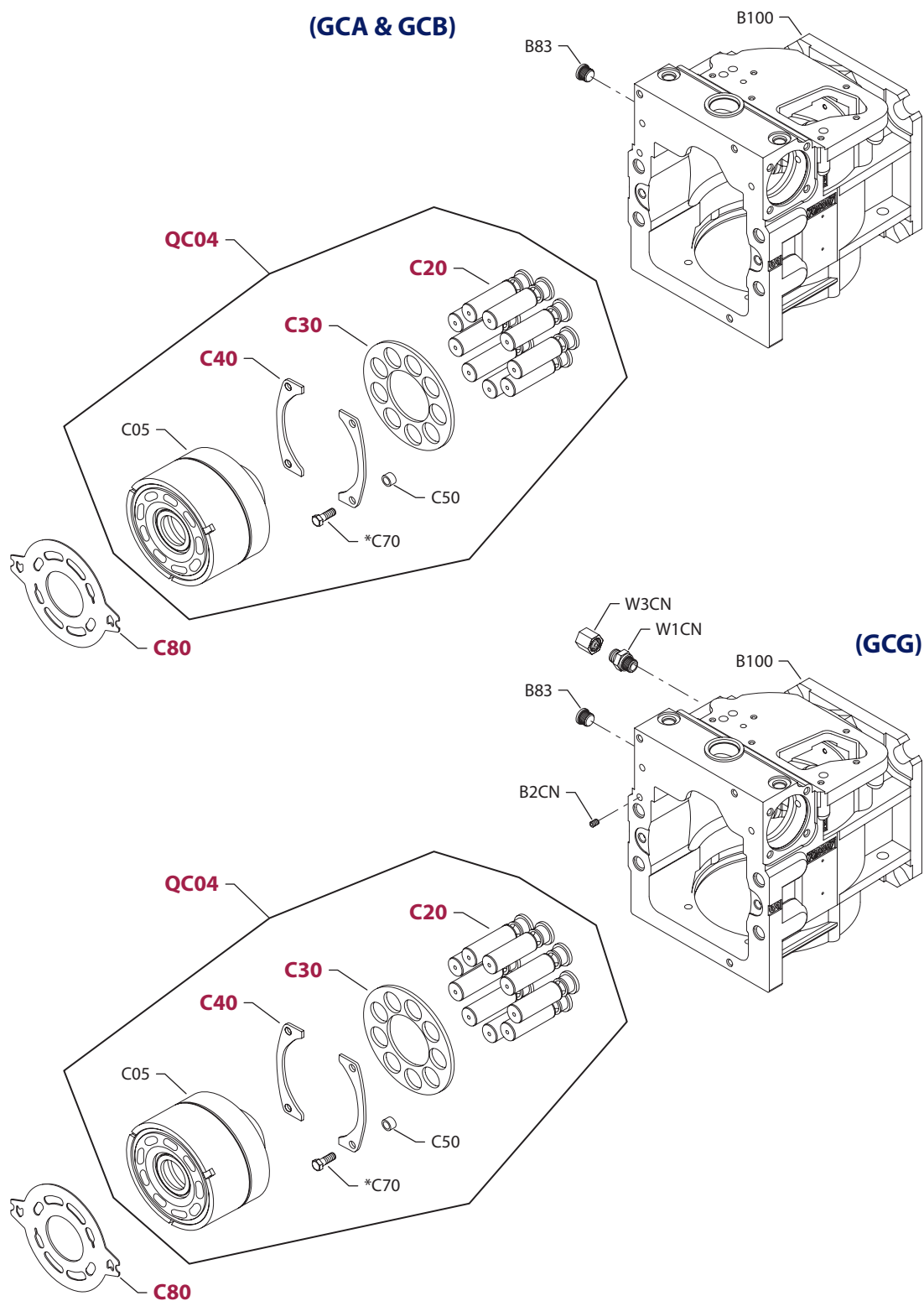


* = part included in overhaul seal kit

E100 888E
Enlarged **bold** type item
numbers are recommended
part to stock for servicing.

SPECIAL HARDWARE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GBZ	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		519258	Cylinder block assembly	1
	C20	99-52		727750	Piston assembly, welded	9
	C30	99-52		735506	Slipper guide	1
	C40	99-52		700963	Slipper guide bearing	2
	C50	99-52		509015	Spacer	4
	C70	99-52		308643	Screw	4
	C80	99-52		518807	Valve plate	1
	QC04	99-52		738211	Cylinder block kit	1
	Z01	99-52		516748	Plug assembly	1
	Z02	99-52		516748	Plug assembly	1
	Z03	99-52		516742	Plug assembly	1
	Z04	99-52		516742	Plug assembly	1
	Z05	99-52		516744	Plug assembly	1
	Z06	99-52		516744	Plug assembly	1
	Z07	99-52		516745	Plug assembly	1
	Z08	99-52		516742	Plug assembly	1
	Z09	99-52		516748	Plug assembly	1
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	Z11	99-52		516742	Plug assembly	1
	Z12	99-52		516750	Plug assembly	1
	Z13	99-52		516750	Plug assembly	1
	Z14	99-52		516750	Plug assembly	1
	Z15	99-52		516750	Plug assembly	1
	Z17	99-52		516745	Plug assembly	1
	Z31	99-52		516137	Connector	2
	Z32	99-52		516134	Hydraulic hose	1
	Z33	99-52		019471	Screw	8
	ZC1	99-52		516720	Check valve	1
	ZC2	99-52		516721	Retainer	1
	ZC3	99-52		516747	Headless screw	1
	ZD1	99-52		516722	Pressure regulator	1
	ZD2	99-52		516722	Pressure regulator	1
	ZL1	99-52		516729	Relief valve	1
	ZR1	99-52		516733	Relief valve	1



* = part included in overhaul seal kit

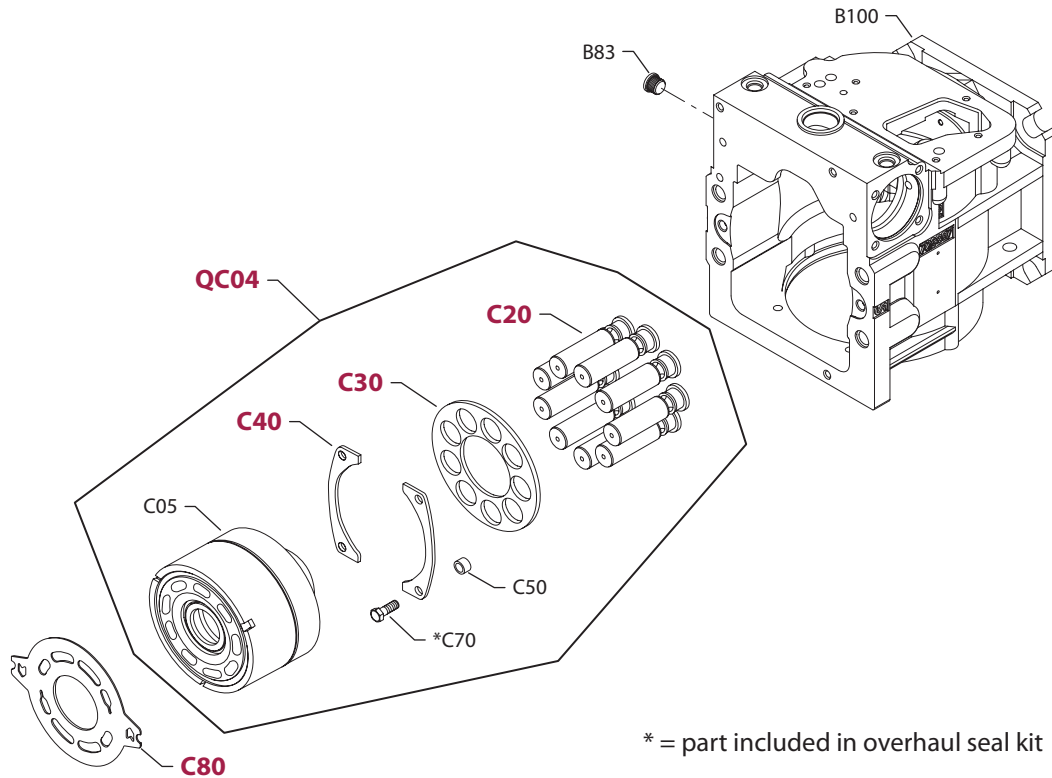
E100 886E

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

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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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	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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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	1
	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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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

(GCP, GCS & GDA)

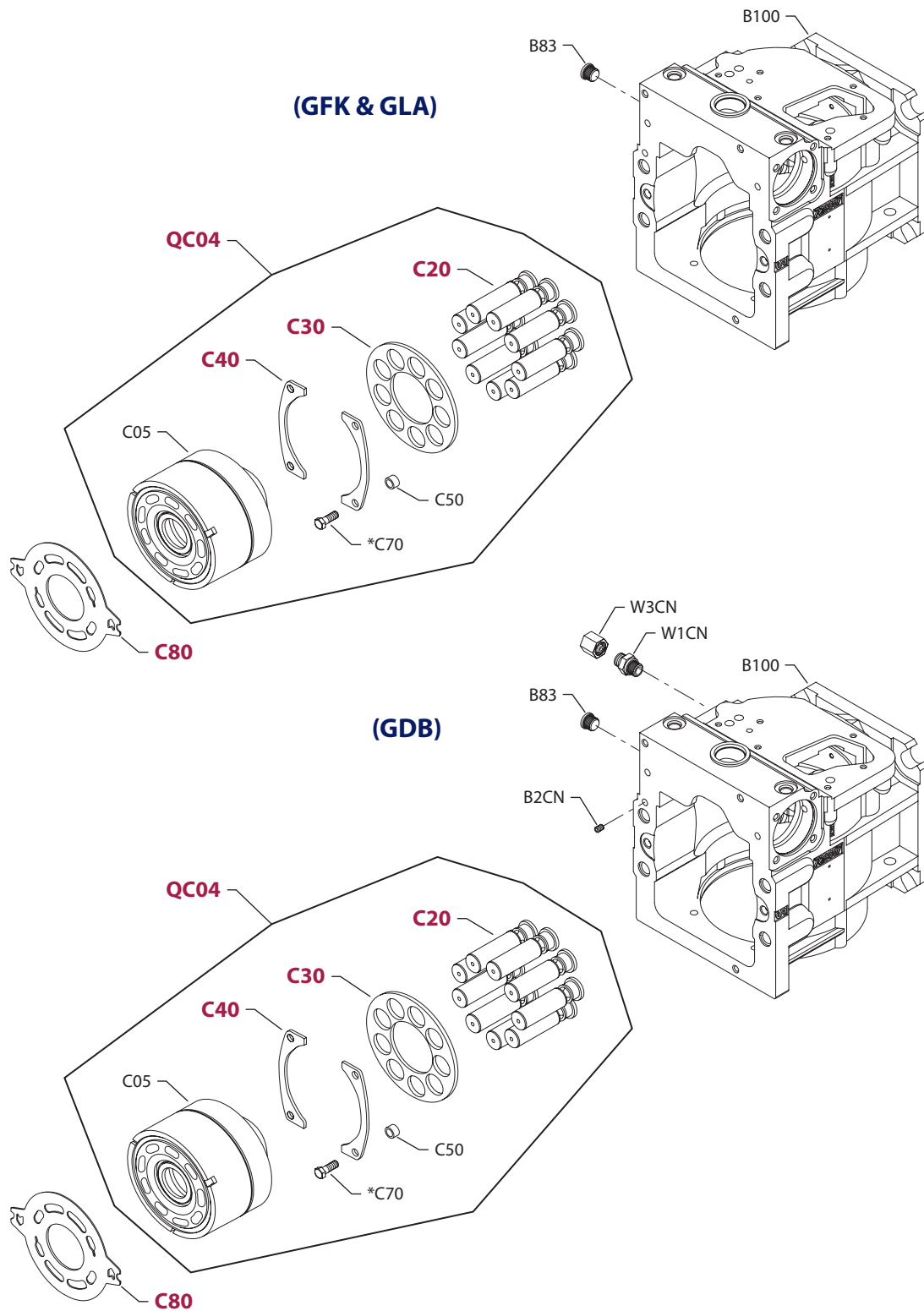


E100 887E

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

SPECIAL HARDWARE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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	98-06		519258	Cylinder block assembly	1
	C20	98-06		727750	Piston assembly, welded	9
	C30	98-06		735506	Slipper guide	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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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



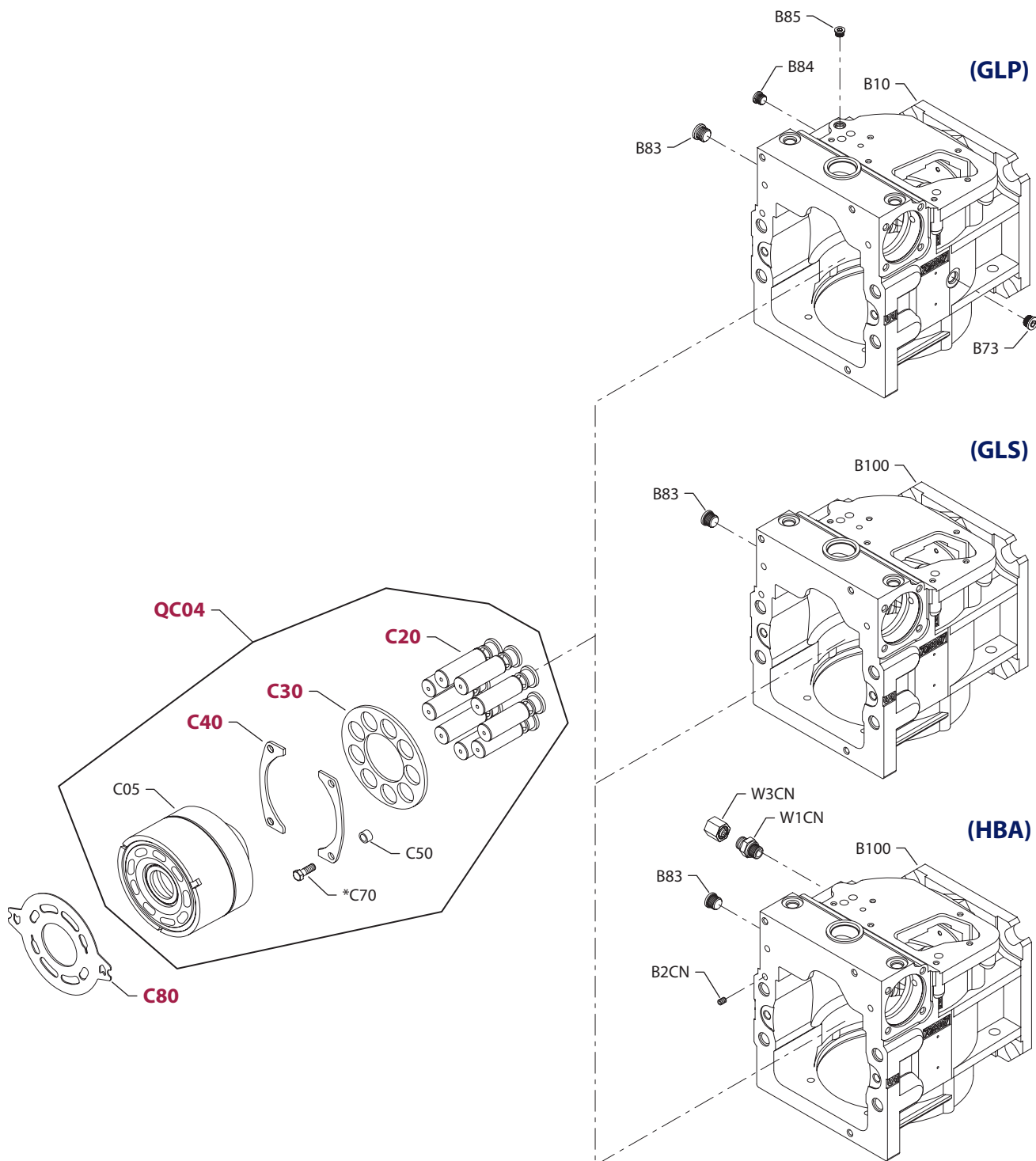
* = part included in overhaul seal kit

E100 886E

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

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	519258	Cylinder block assembly	1
	C20	92-19	08-03	727750	Piston assembly, welded	9
	C30	92-19	08-03	735506	Slipper guide	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
GFK	B83	08-51		140644	Plug assembly	1
	B100	08-51		11026913	Housing assembly	1
	C05	08-51		519258	Cylinder block assembly	1
	C20	08-51		727750	Piston assembly, welded	9
	C30	08-51		735506	Slipper guide	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
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		519258	Cylinder block assembly	1
	C20	00-13		727750	Piston assembly, welded	9
	C30	00-13		735506	Slipper guide	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

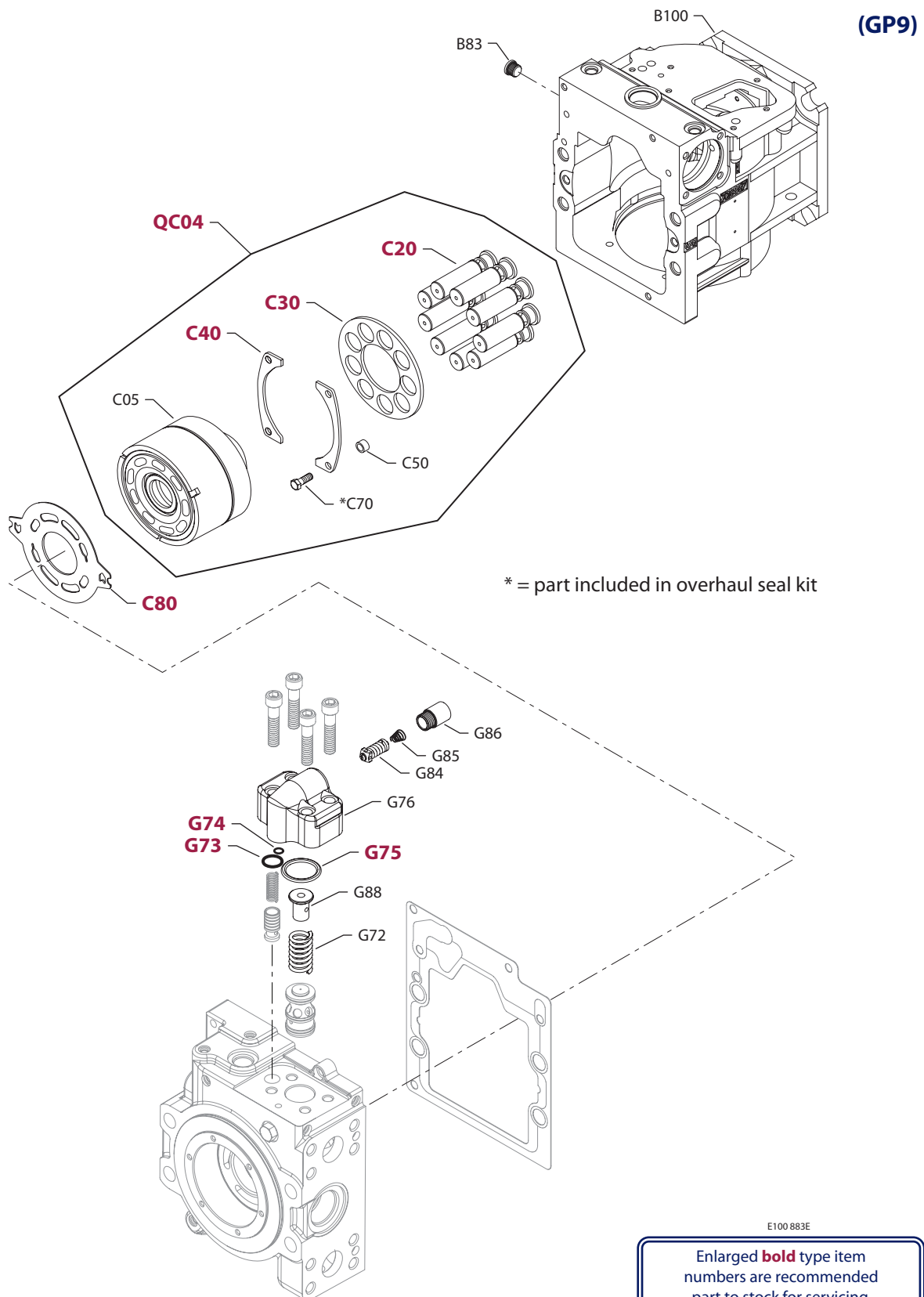


* = part included in overhaul seal kit

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

SPECIAL HARDWARE

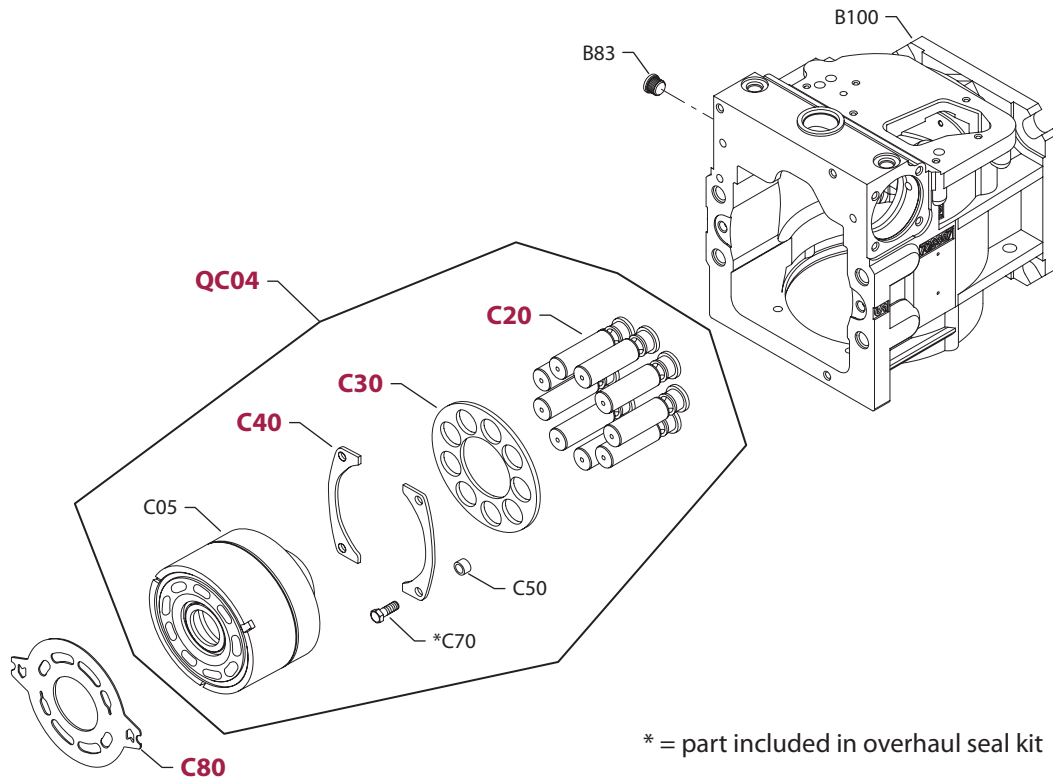
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
GLP	B73	98-02		140644	Plug assembly	1
	B83	98-02		140644	Plug assembly	1
	B84	98-02		509603	Plug assembly, M10 x 1	1
	B85	98-02		509603	Plug assembly, M10 x 1	1
	B100	07-10		11006984	Housing (SB-2007-008A)	1
	B100	98-02	07-09	515350	Housing (SB-1992-003)	1
	C05	98-02		519258	Cylinder block assembly	1
	C20	98-02		727750	Piston assembly, welded	9
	C30	98-02		735506	Slipper guide	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	1
	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		519258	Cylinder block assembly	1
	C20	98-18		727750	Piston assembly, welded	9
	C30	98-18		735506	Slipper guide	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
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		519258	Cylinder block assembly	1
	C20	94-14		727750	Piston assembly, welded	9
	C30	94-14		735506	Slipper guide	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



SPECIAL HARDWARE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
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 (SB-1992-003)	1
	C05	02-30		11033869	Cylinder block assembly	1
	C20	02-30		727750	Piston assembly, welded	9
	C30	02-30		735506	Slipper guide	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		3104295	Plug assembly	1
	G88	02-30		517829	Spring guide	1
	G89	02-30		517831	Spring	1
	QC04	02-30		11086179	Cylinder block kit	1

(HCA, HDA, JAA & JCA)



E100 887E

Enlarged **bold** type item
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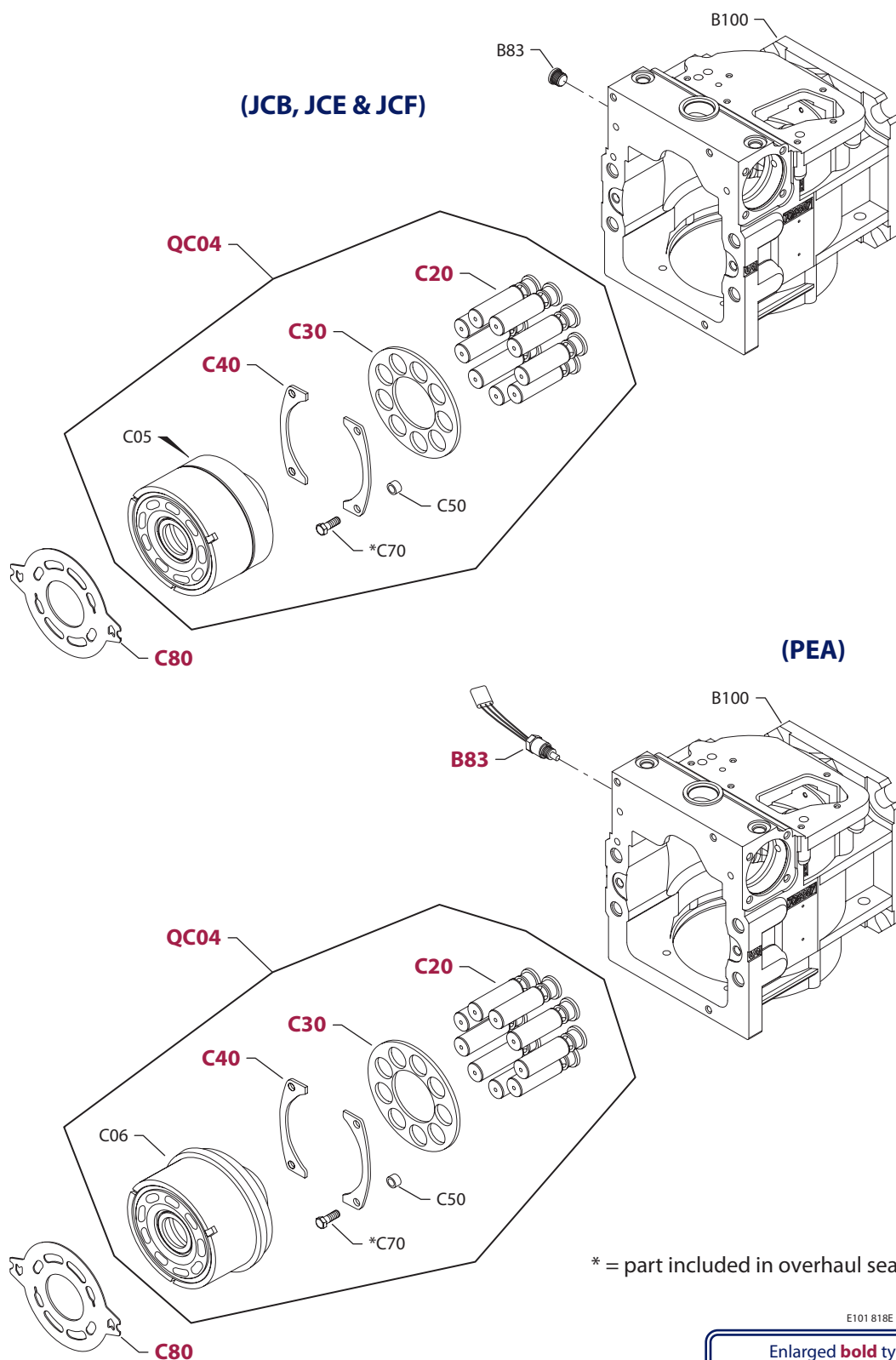
SPECIAL HARDWARE

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		519258	Cylinder block assembly	1
	C20	92-19		727750	Piston assembly, welded	9
	C30	92-19		735506	Slipper guide	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

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		519258	Cylinder block assembly	1
	C20	00-22		727750	Piston assembly, welded	9
	C30	00-22		735506	Slipper guide	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		519258	Cylinder block assembly	1
	C20	94-50		727750	Piston assembly, welded	9
	C30	94-50		735506	Slipper guide	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

JCA	B83	08-12		140644	Plug assembly	1
	B100	08-12		11026913	Housing assembly	1
	C05	08-12		519258	Cylinder block assembly	1
	C20	08-12		727750	Piston assembly, welded	9
	C30	08-12		735506	Slipper guide	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

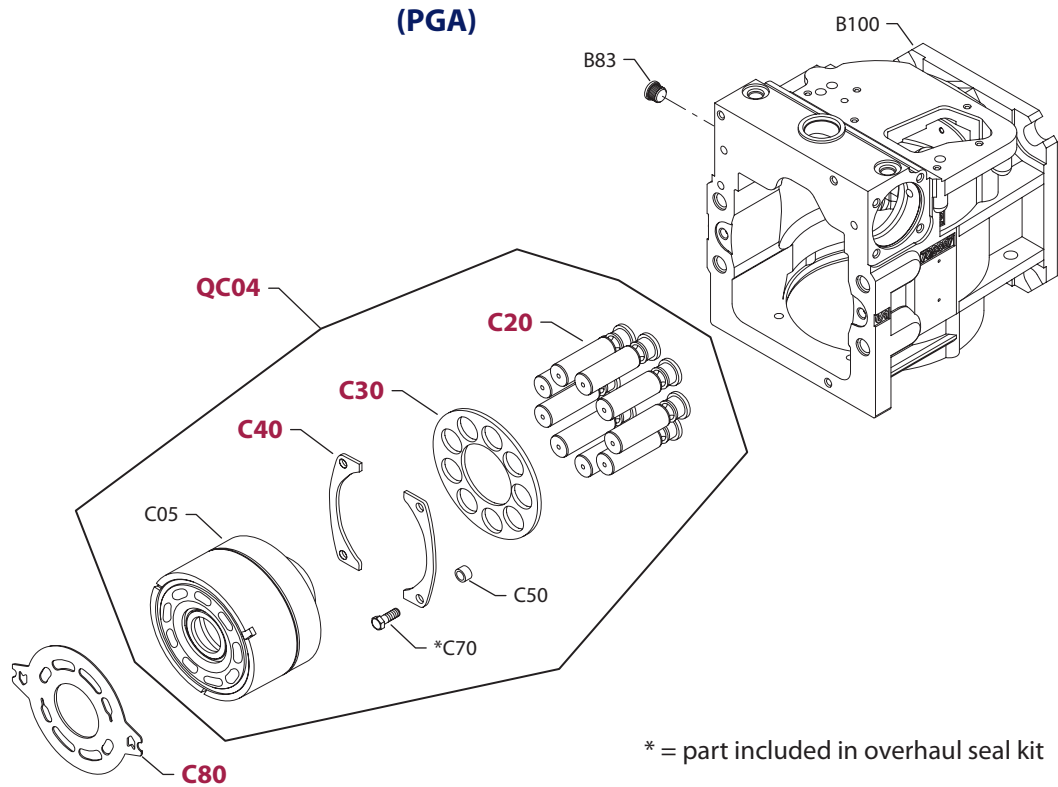


E101 818E

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

SPECIAL HARDWARE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
JCB	B83	09-14		140644	Plug assembly	1
	B100	09-14		11026913	Housing assembly	1
	C05	09-14		519258	Cylinder block assembly	1
	C20	09-14		727750	Piston assembly, welded	9
	C30	09-14		735506	Slipper guide	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		519258	Cylinder block assembly	1
	C20	09-39		727750	Piston assembly, welded	9
	C30	09-39		735506	Slipper guide	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		519258	Cylinder block assembly	1
	C20	10-15		727750	Piston assembly, welded	9
	C30	10-15		735506	Slipper guide	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
PEA	B83	07-32		KPPG156	Plug 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		735506	Slipper guide	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

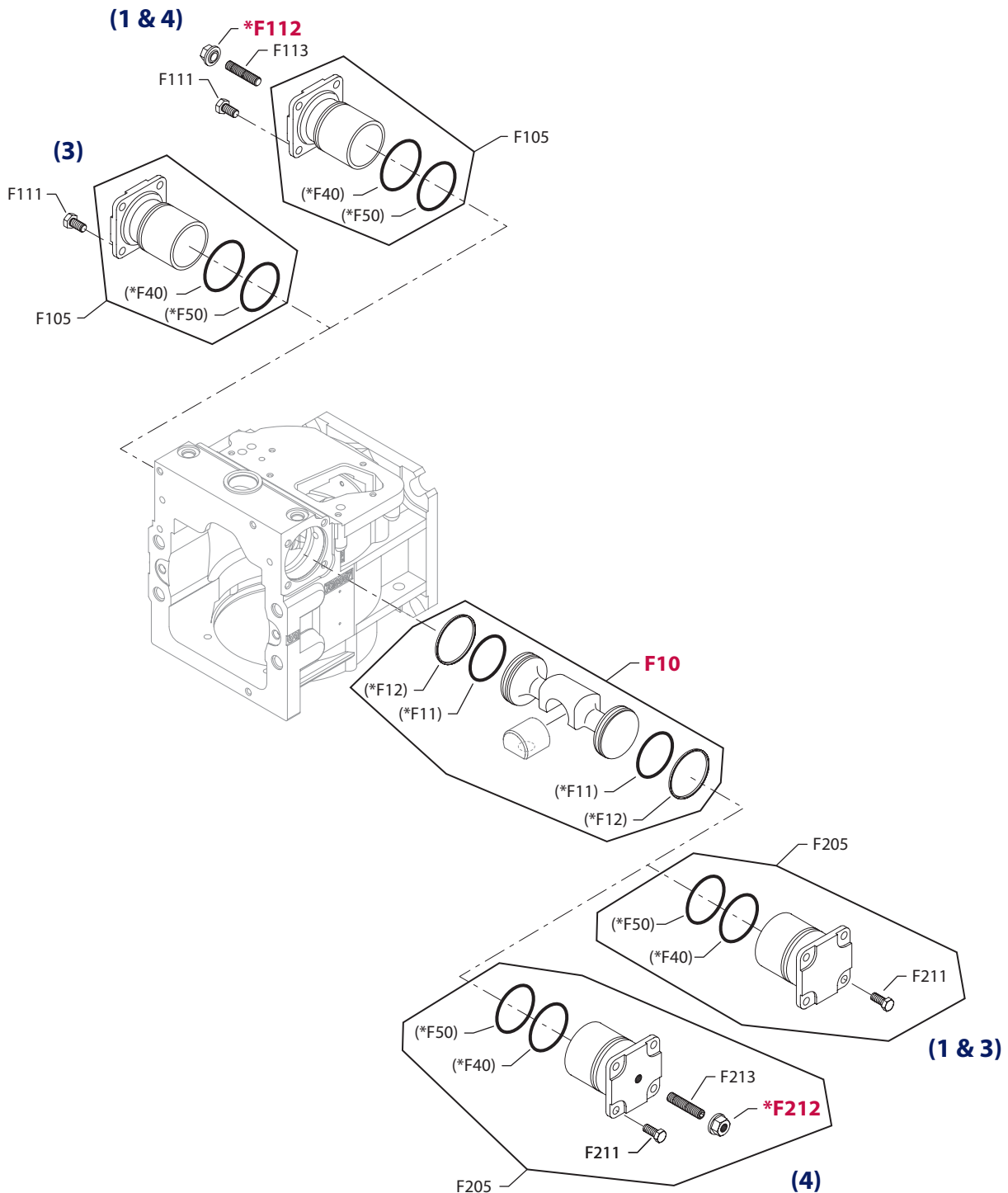


E100 887E

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

SPECIAL HARDWARE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
PGA	B83	07-13		140644	Plug assembly	1
	B100	07-13		11026913	Housing assembly	1
	C05	07-13		519258	Cylinder block assembly	1
	C20	07-13		727750	Piston assembly, welded	9
	C30	07-13		735506	Slipper guide	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



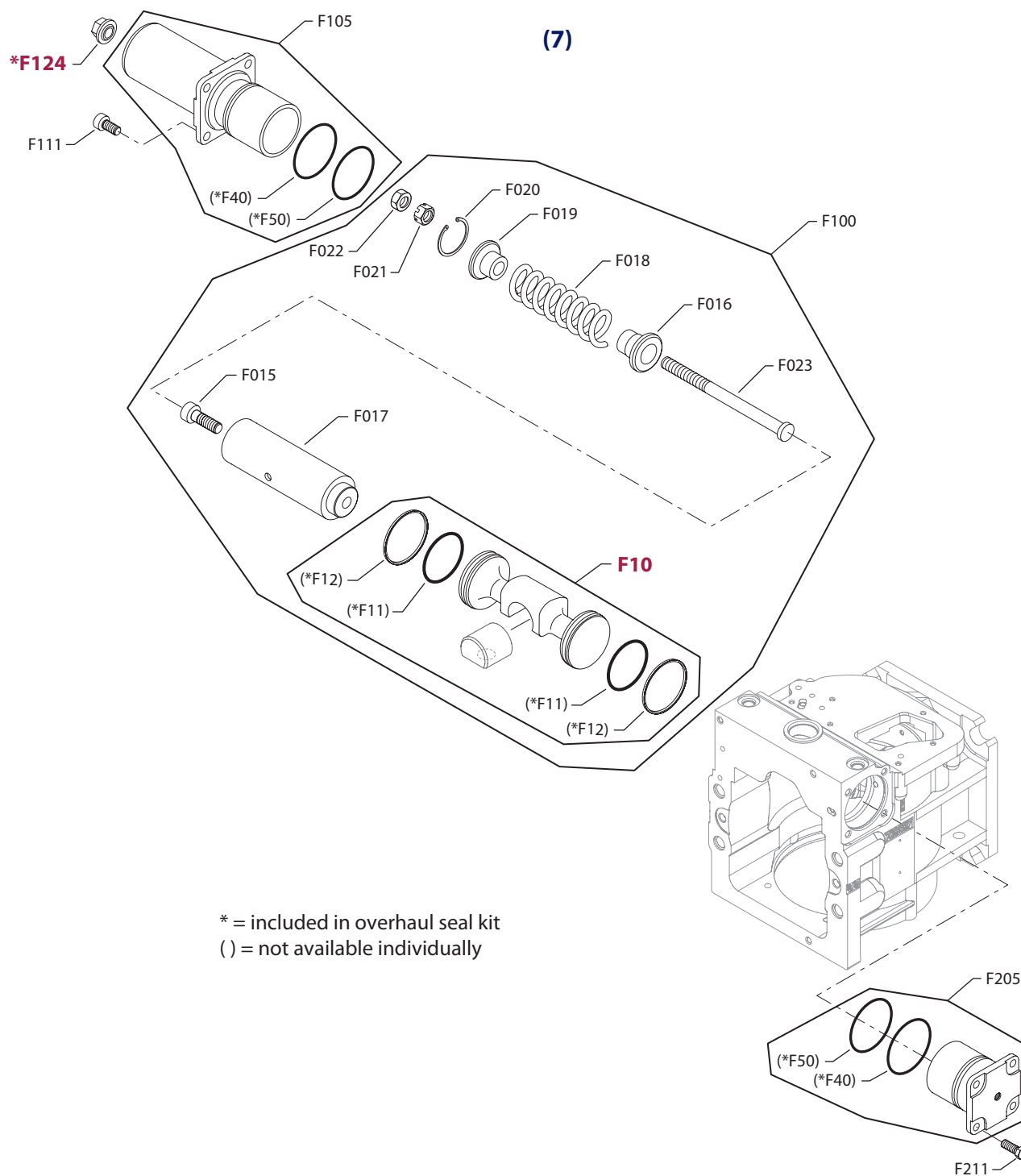
* = included in overhaul seal kit
() = not available individually

E100 892E

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

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	1
	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	1
	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

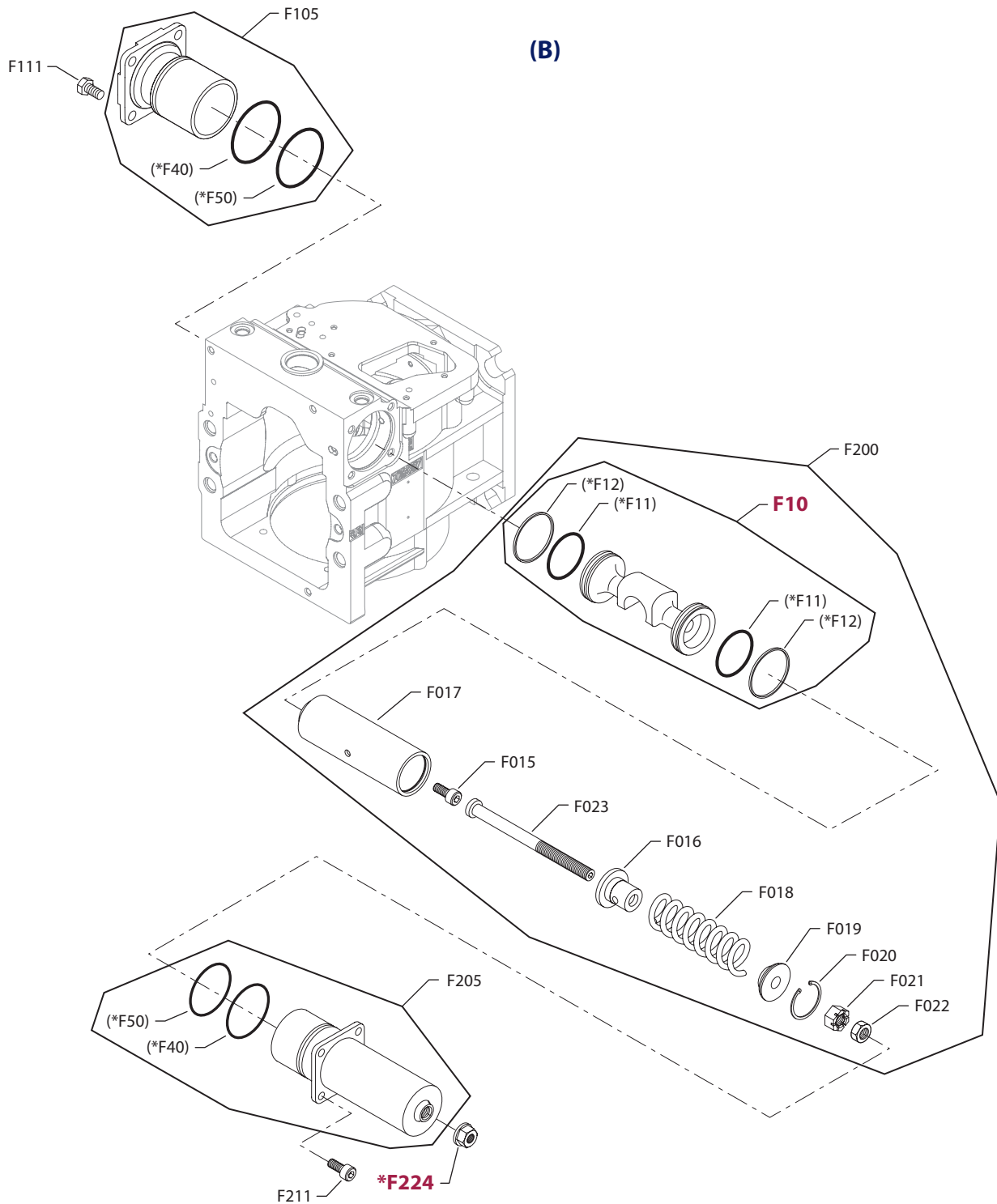


E100 893E

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

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
	F011	98-14		746651	Screw	4
	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		346023	Adjust screw	1
	F100	98-14		515836	Servo assembly	1
	F105	98-14		11060161	Servo cylinder assembly, NFPE	1
	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



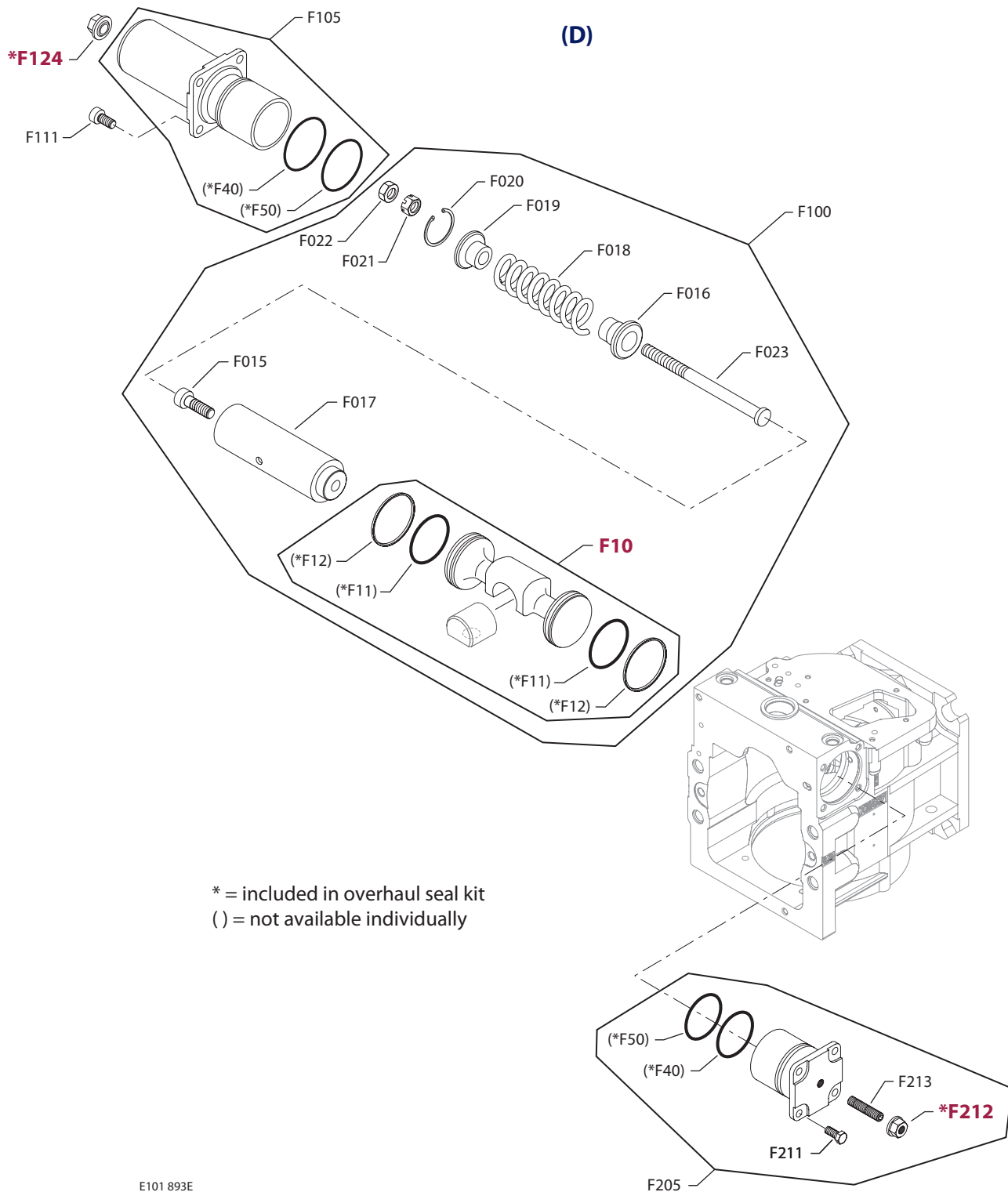
* = included in overhaul seal kit
() = not available individually

E100 894E

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

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		346023	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

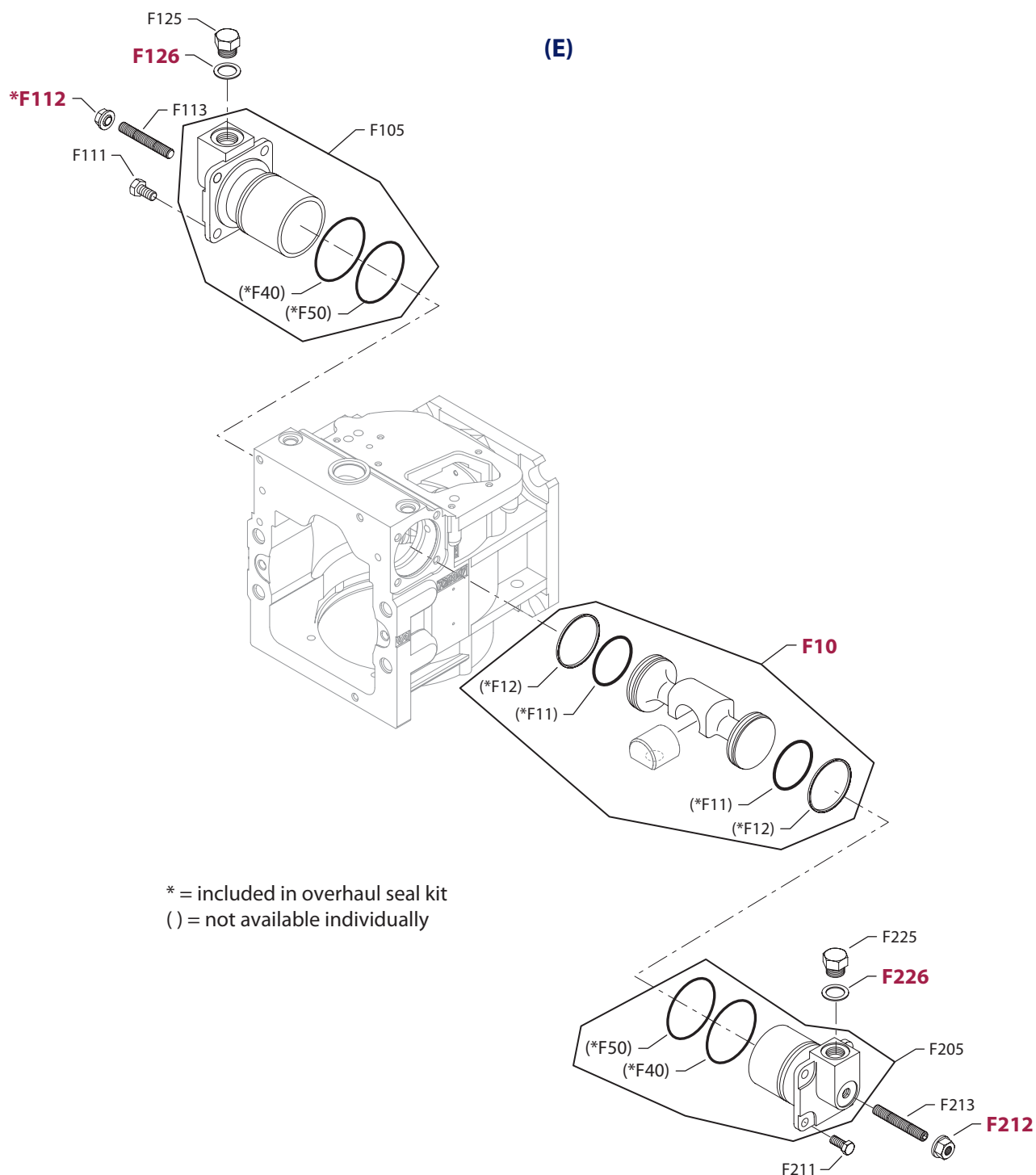


E101 893E

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

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		346023	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

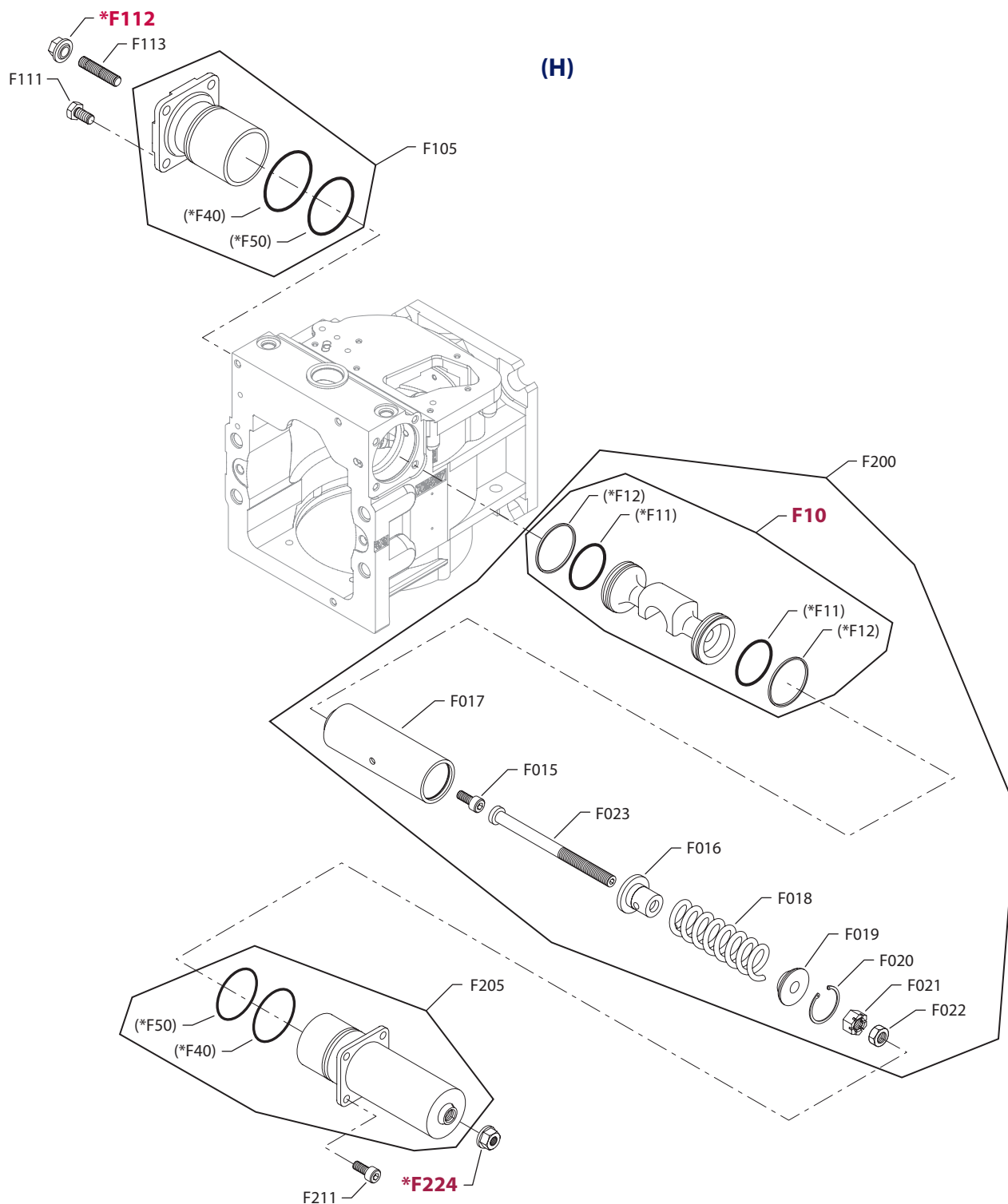


E100 895E

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

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		394312	Plug	1
	F126	91-30		084640	Sealing ring	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		394312	Plug assembly	1
	F226	91-30		084640	Sealing ring	1



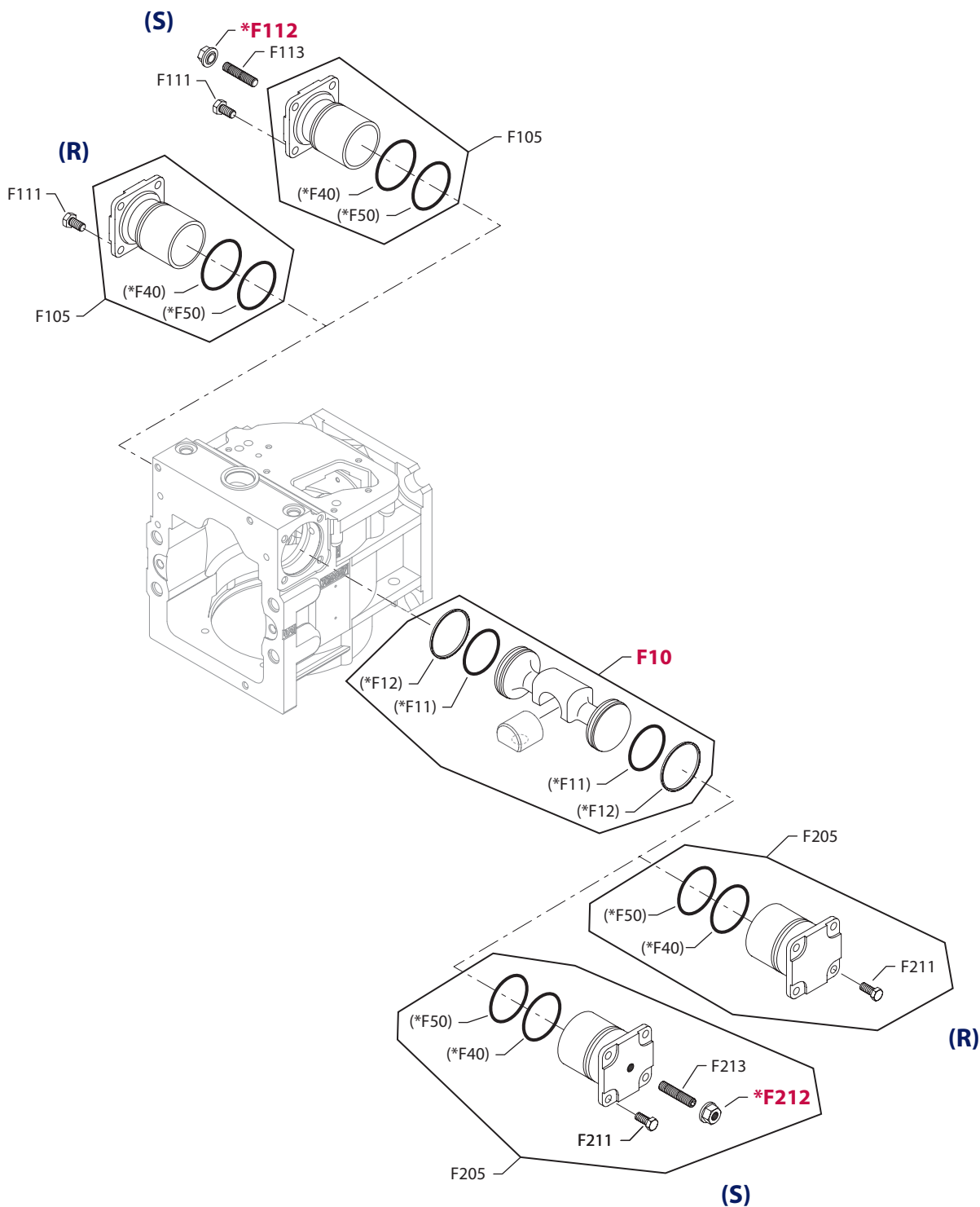
* = included in overhaul seal kit
() = not available individually

E101 820E

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

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
	F013	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		346023	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
	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



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

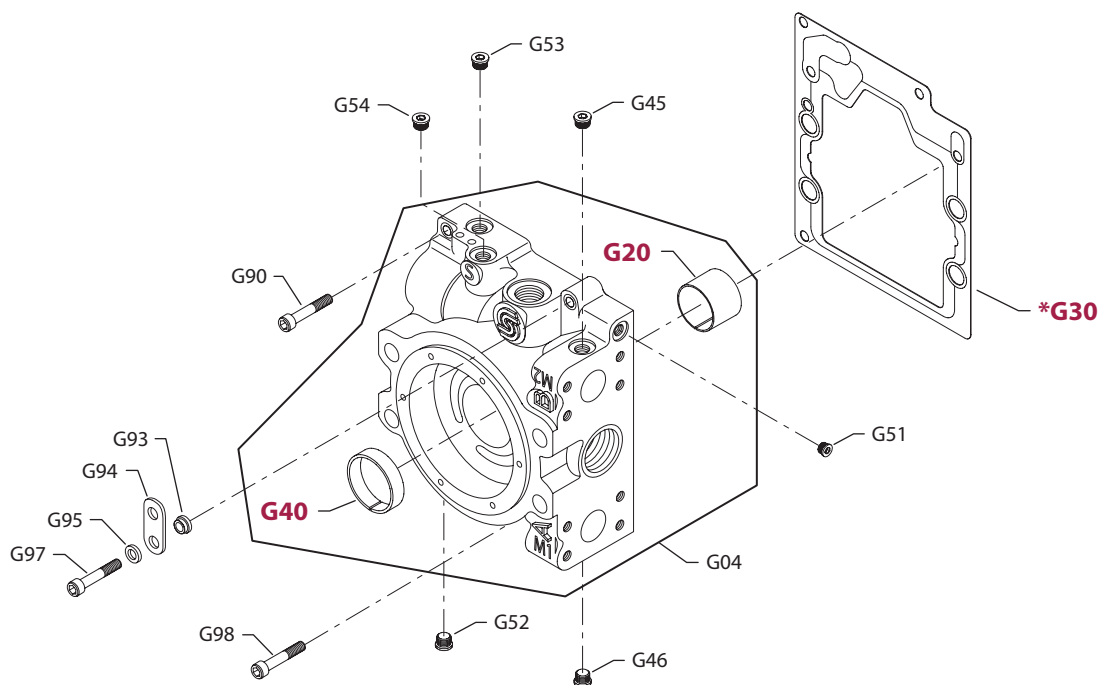
E100 892E

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

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

(80 & 82)



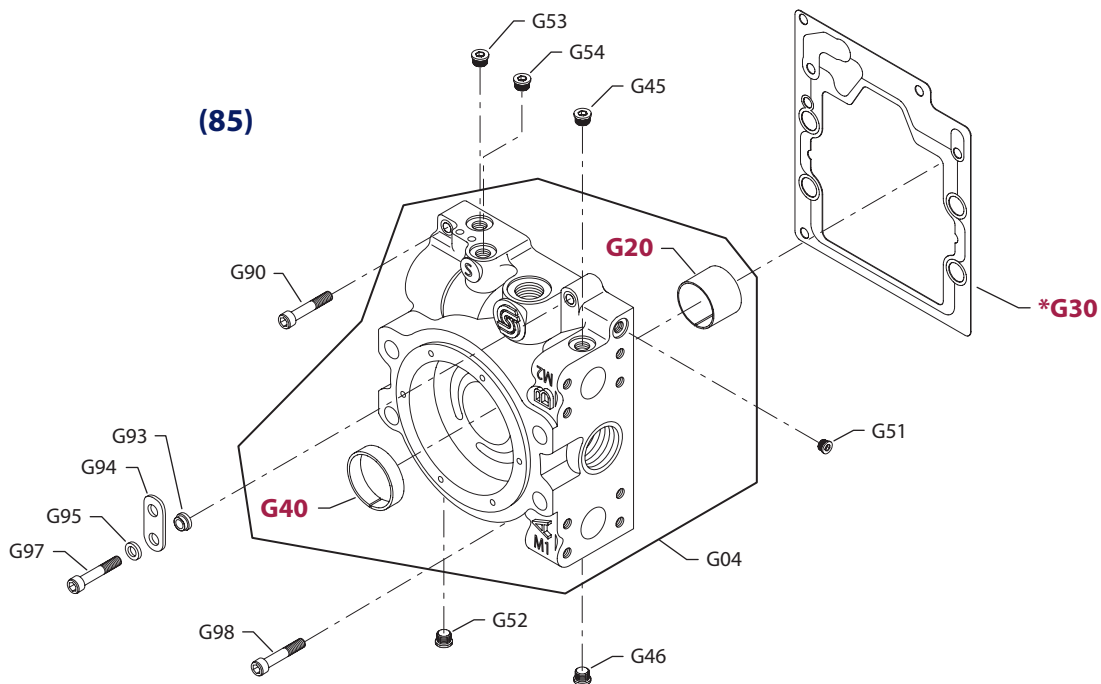
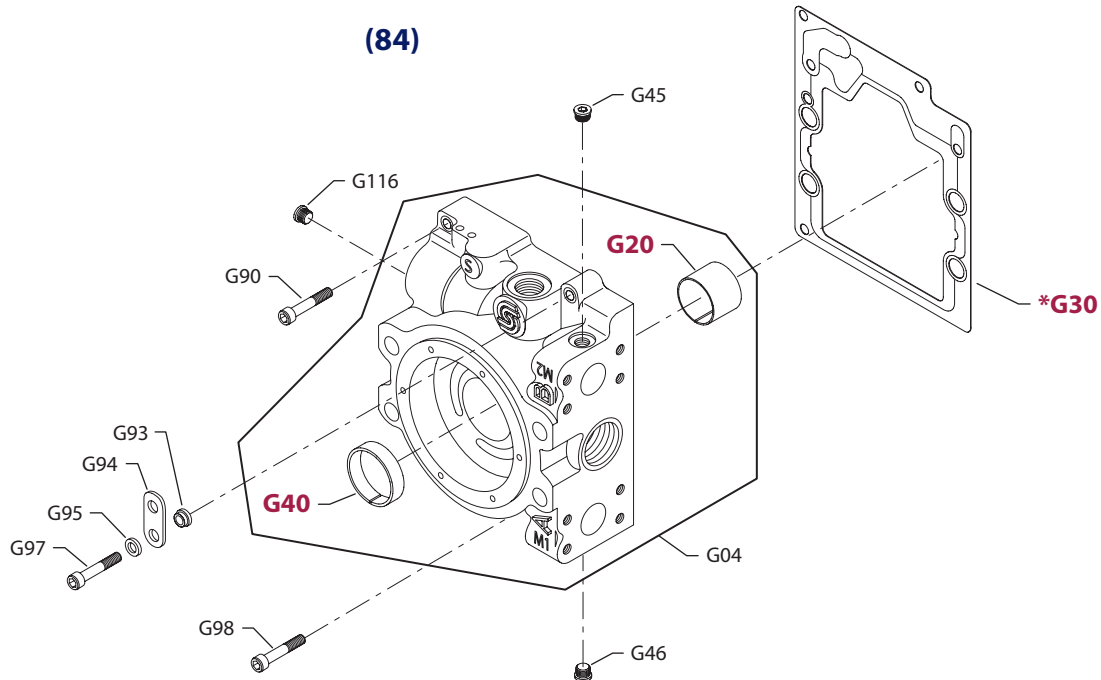
* = included in overhaul seal kit

E100 897 E

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

END CAP

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
80	G04	01-48	11-34	516600	End cap assembly, twin ports	1
	G20	89-41	11-34	303693	Journal bearing	1
	G30	89-41	11-34	730895	End cap gasket (SB-1992-003)	1
	G40	89-41	11-34	303651	Bushing	1
	G45	89-41	11-34	140644	Plug assembly	1
	G46	89-41	11-34	140644	Plug assembly	1
	G51	89-41	11-34	327007 (9005110-4400)	Plug assembly	1
	G52	89-41	11-34	140644	Plug assembly	1
	G53	89-41	11-34	140644	Plug assembly	1
	G54	89-41	11-34	140644	Plug assembly	1
	G90	01-48	11-34	713768 (9007314-0812)	Screw, M8 x 55	1
	G90	89-41	01-47	746644 (9007314-0810)	Screw, M8 x 45	1
	G93	89-41	11-34	713800 (8800564)	Spacer	1
	G94	89-41	11-34	8800565	Lifting bracket	1
	G95	89-41	11-34	502195	Washer	1
	G97	01-48	11-34	713768 (9007314-0812)	Screw, M8 x 55	1
	G97	89-41	01-47	748954 (9007314-0811)	Screw, M8 x 50	1
	G98	01-48	11-34	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	1
	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



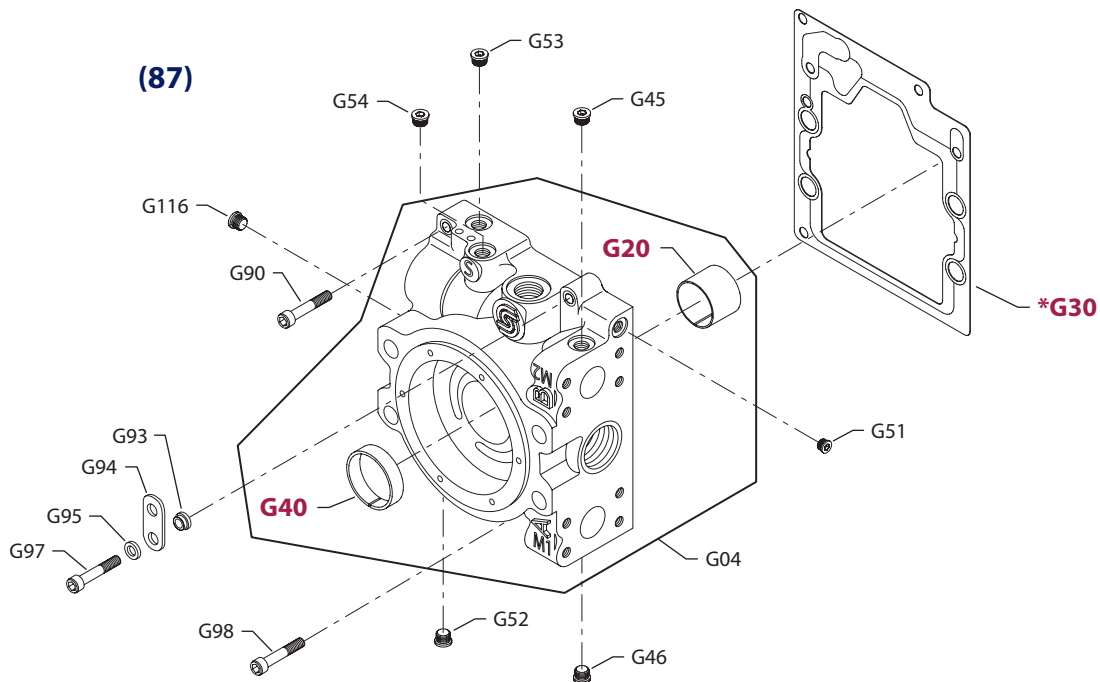
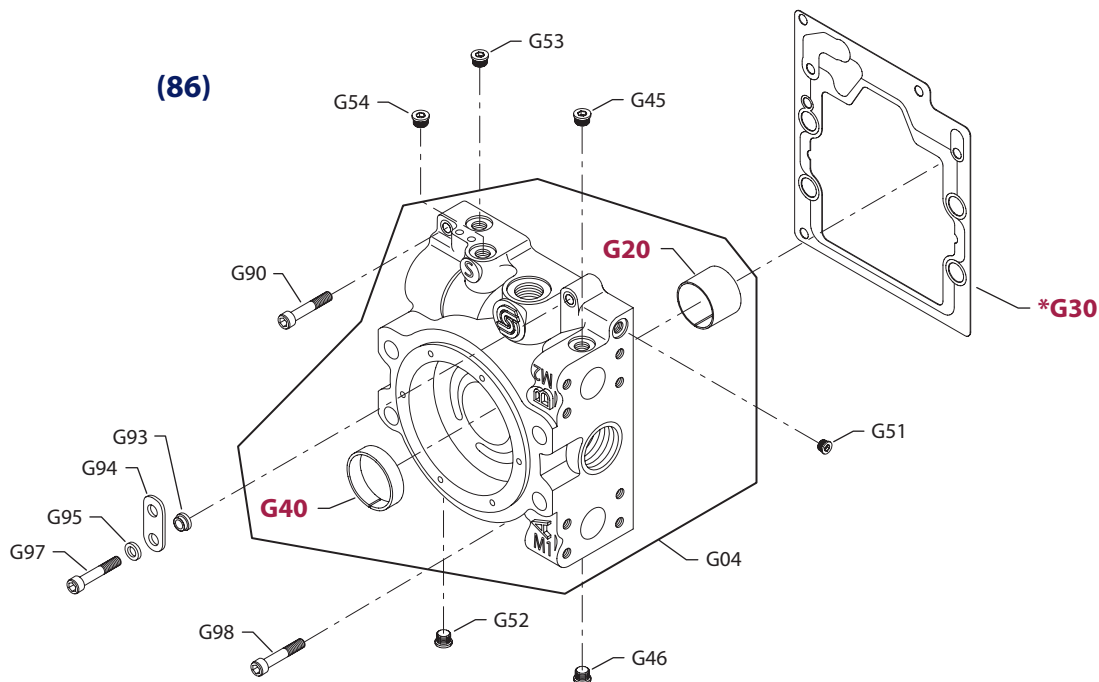
* = part included in overhaul seal kit

E100 896 E

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

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	1
	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



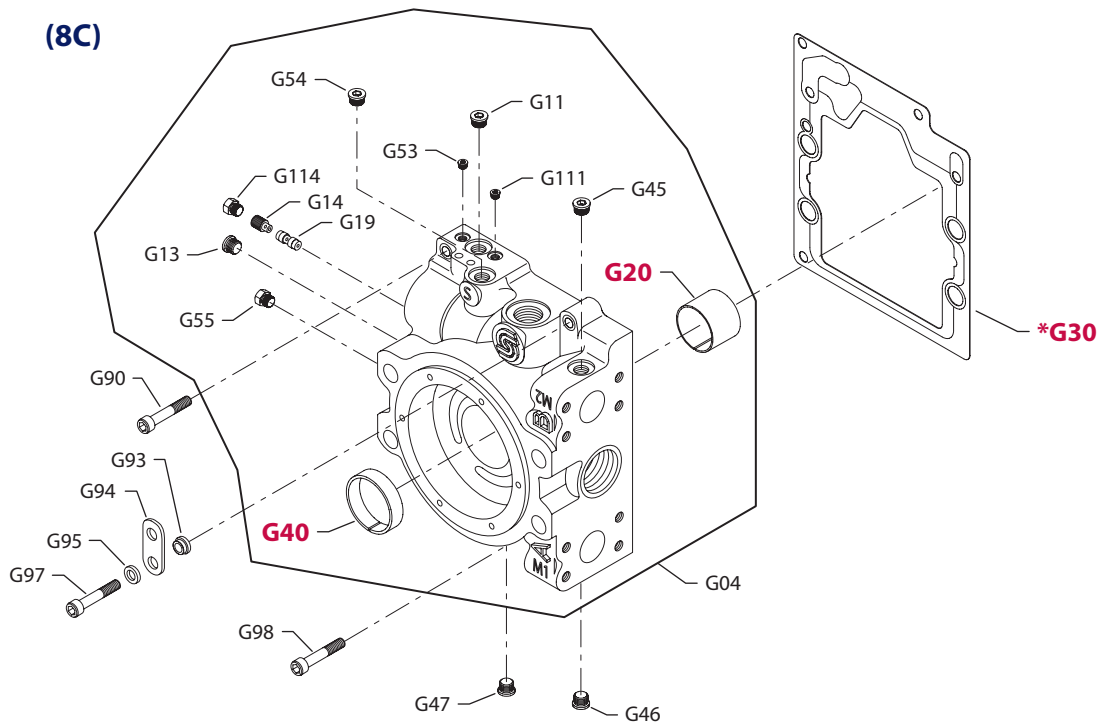
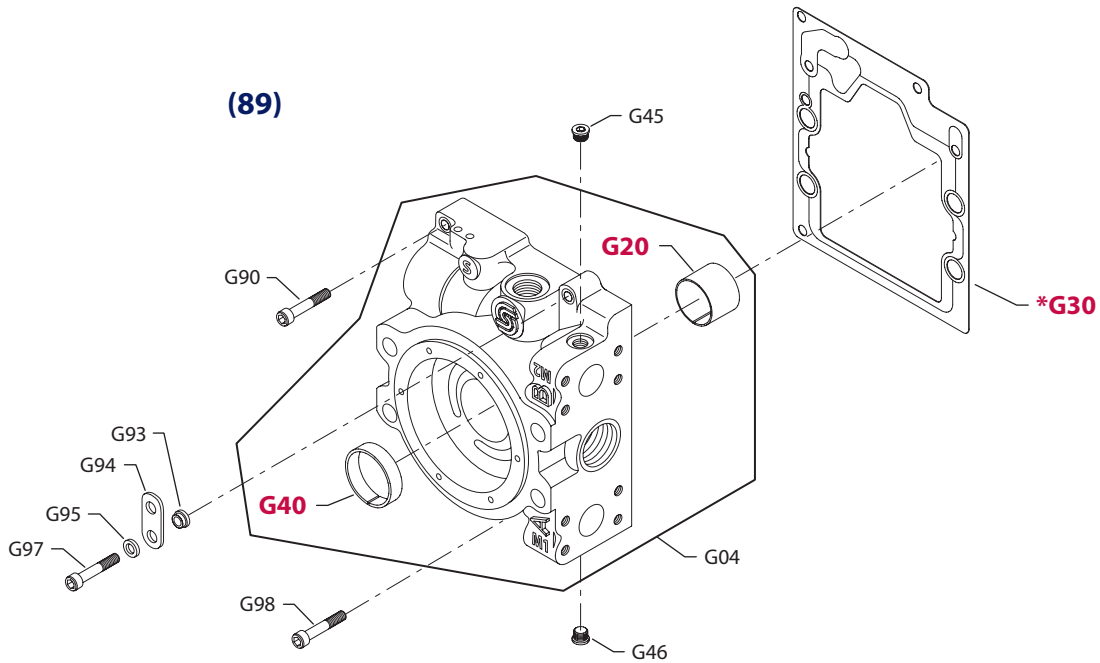
* = included in overhaul seal kit

E101 826E

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

END CAP

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



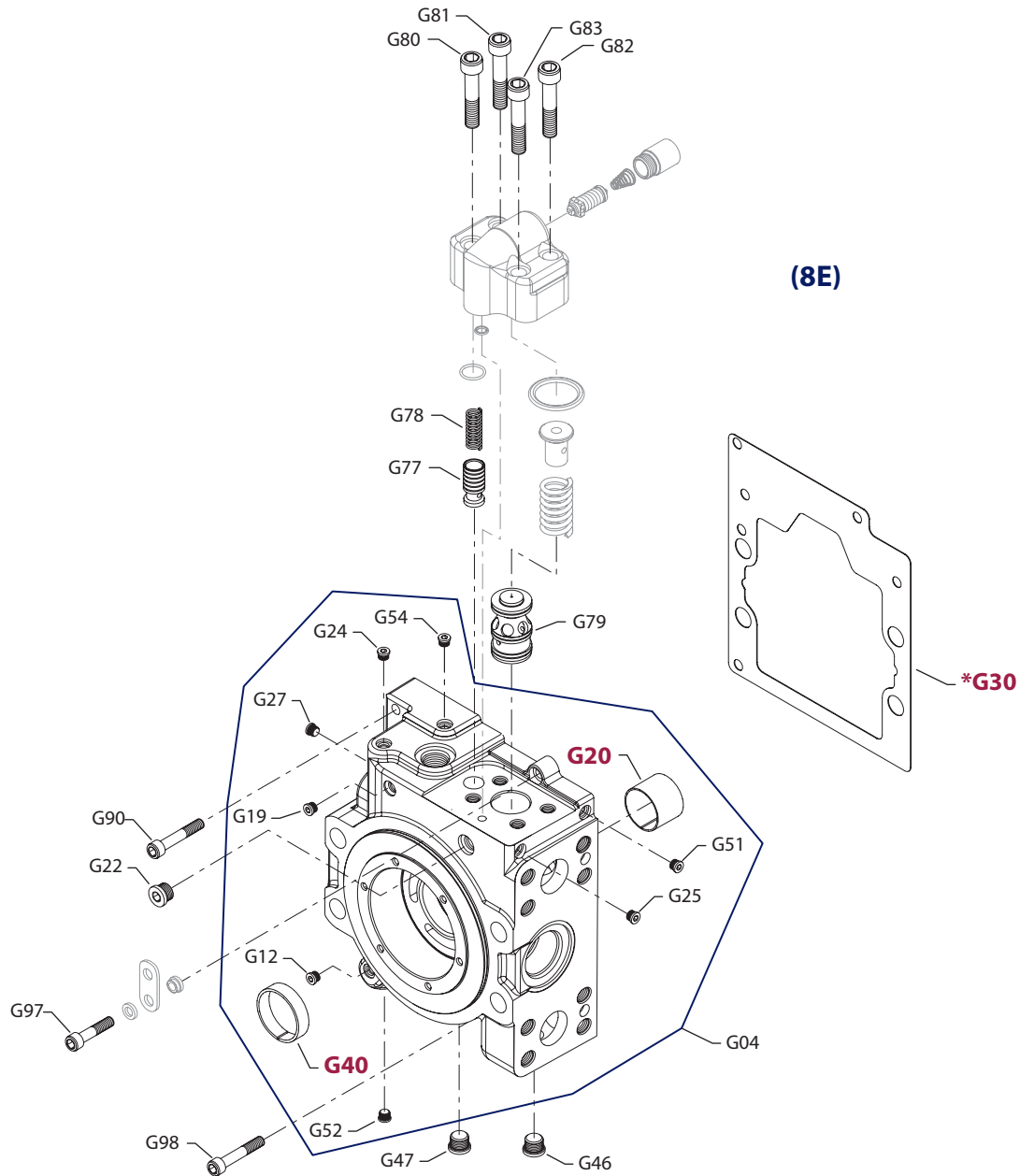
* = included in overhaul seal kit

E100 899 E

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

END CAP

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
89	G04	02-07		516605	End cap assembly, twin ports	1
	G20	91-06		303693	Journal bearing	1
	G30	91-06		730895	End cap gasket	1
	G40	91-06		303651	Bushing	1
	G45	91-06		140644	Plug assembly	1
	G46	91-06		140644	Plug assembly	1
	G90	02-07		713768 (9007314-0812)	Screw, M8 x 55	1
	G90	91-06	02-06	746644 (9007314-0810)	Screw, M8 x 45	1
	G93	91-06		713800 (8800564)	Spacer	1
	G94	91-06		8800565	Lifting bracket	1
	G95	91-06		502195	Washer	1
	G97	02-07		713768 (9007314-0812)	Screw, M8 x 55	1
	G97	91-06	02-06	748954 (9007314-0811)	Screw, M8 x 50	1
	G98	02-07		713768 (9007314-0812)	Screw, M8 x 55	1
	G98	91-06	02-06	746644 (9007314-0810)	Screw, M8 x 45	1
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



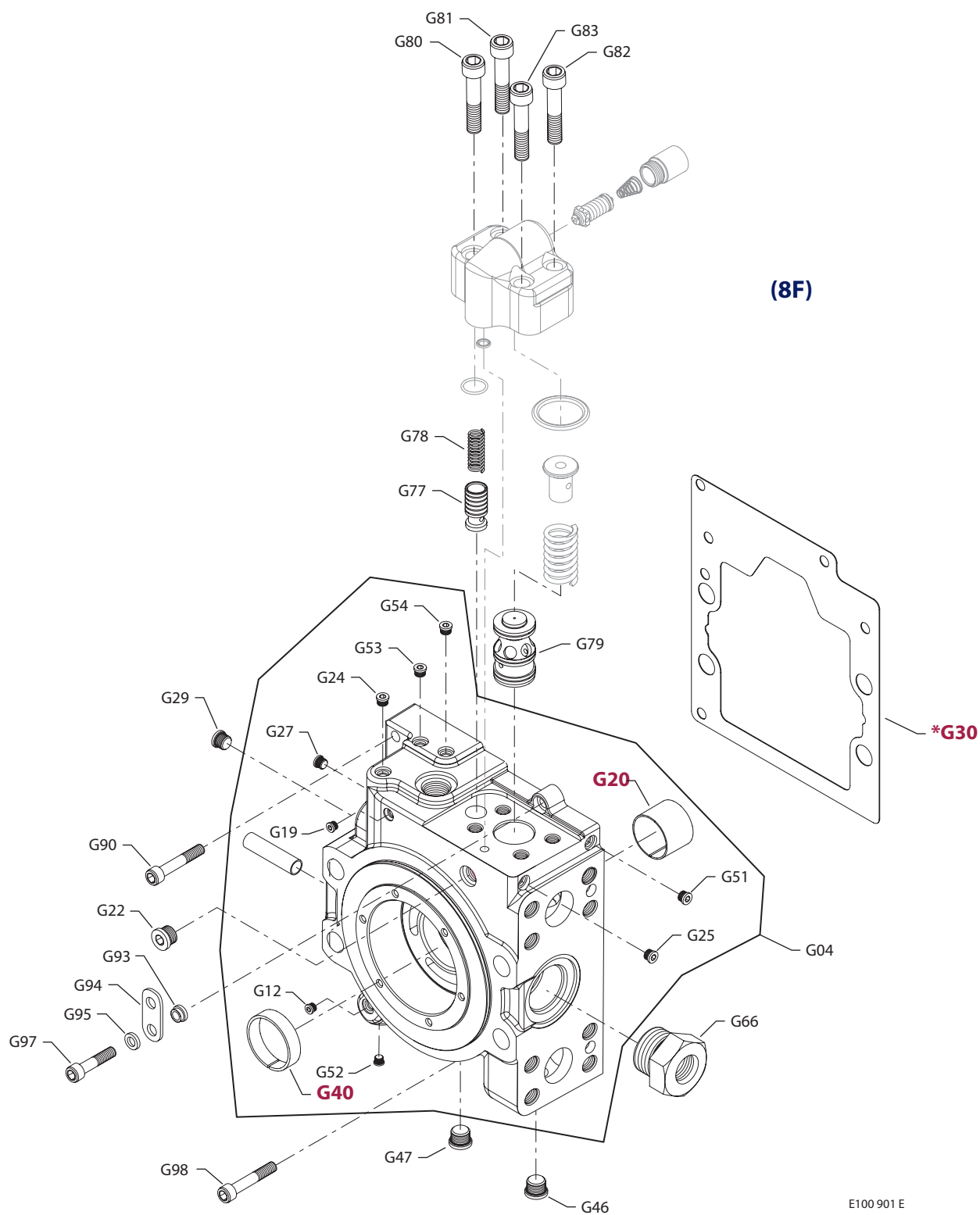
* = included in overhaul seal kit Q210

E100 900 E

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

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



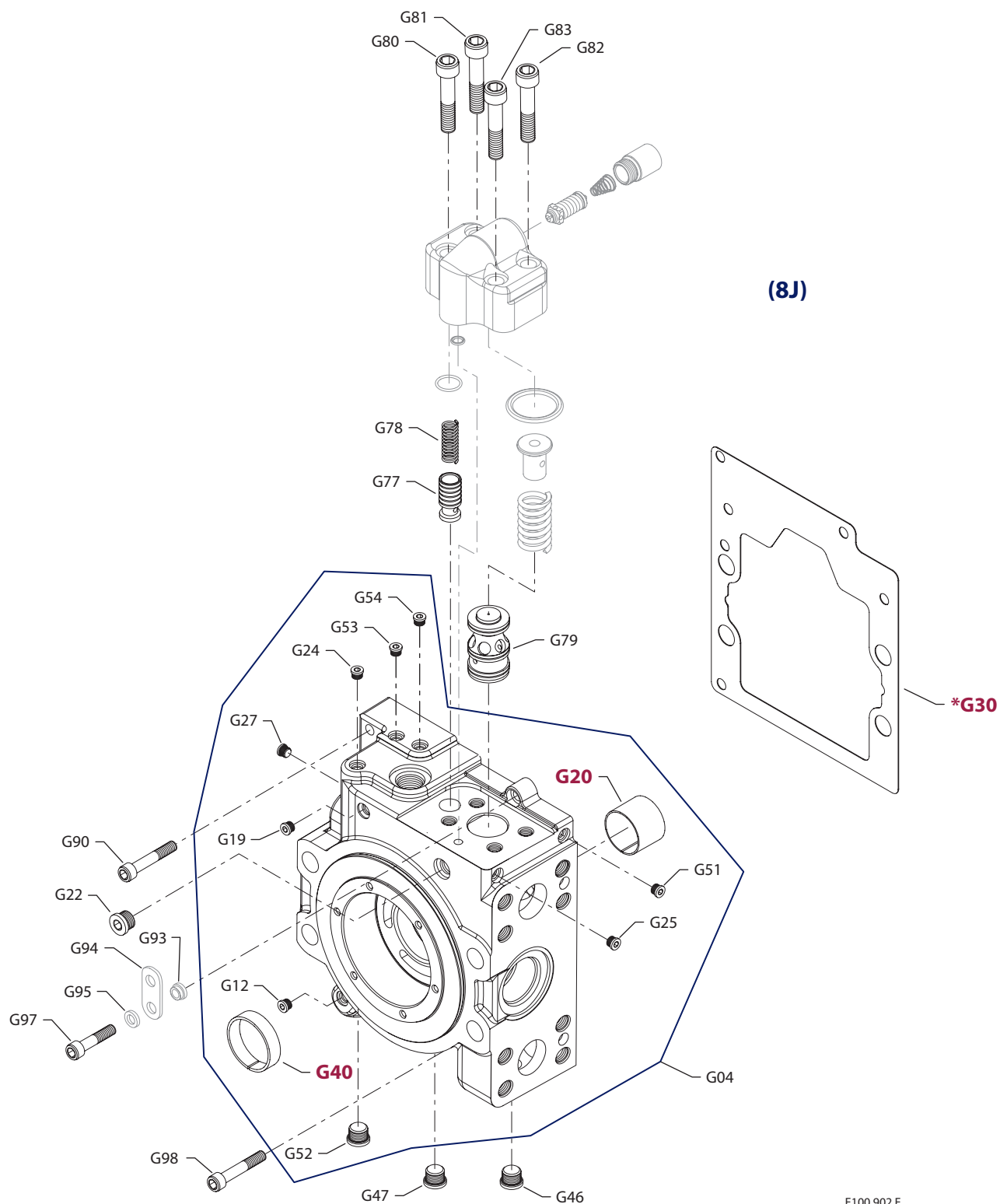
* = included in overhaul seal kit

E100 901 E

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

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



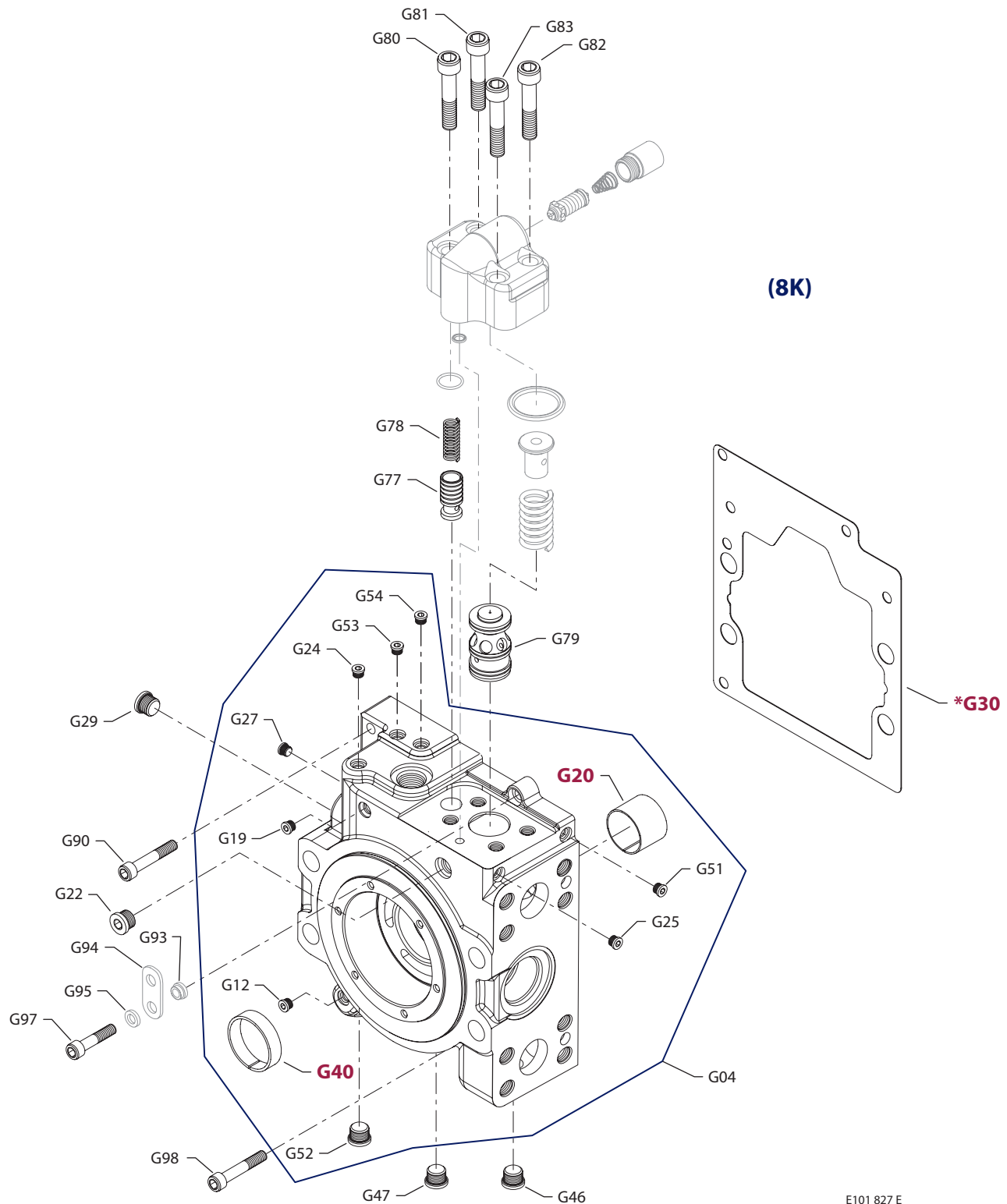
* = included in overhaul seal kit

E100 902 E

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

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



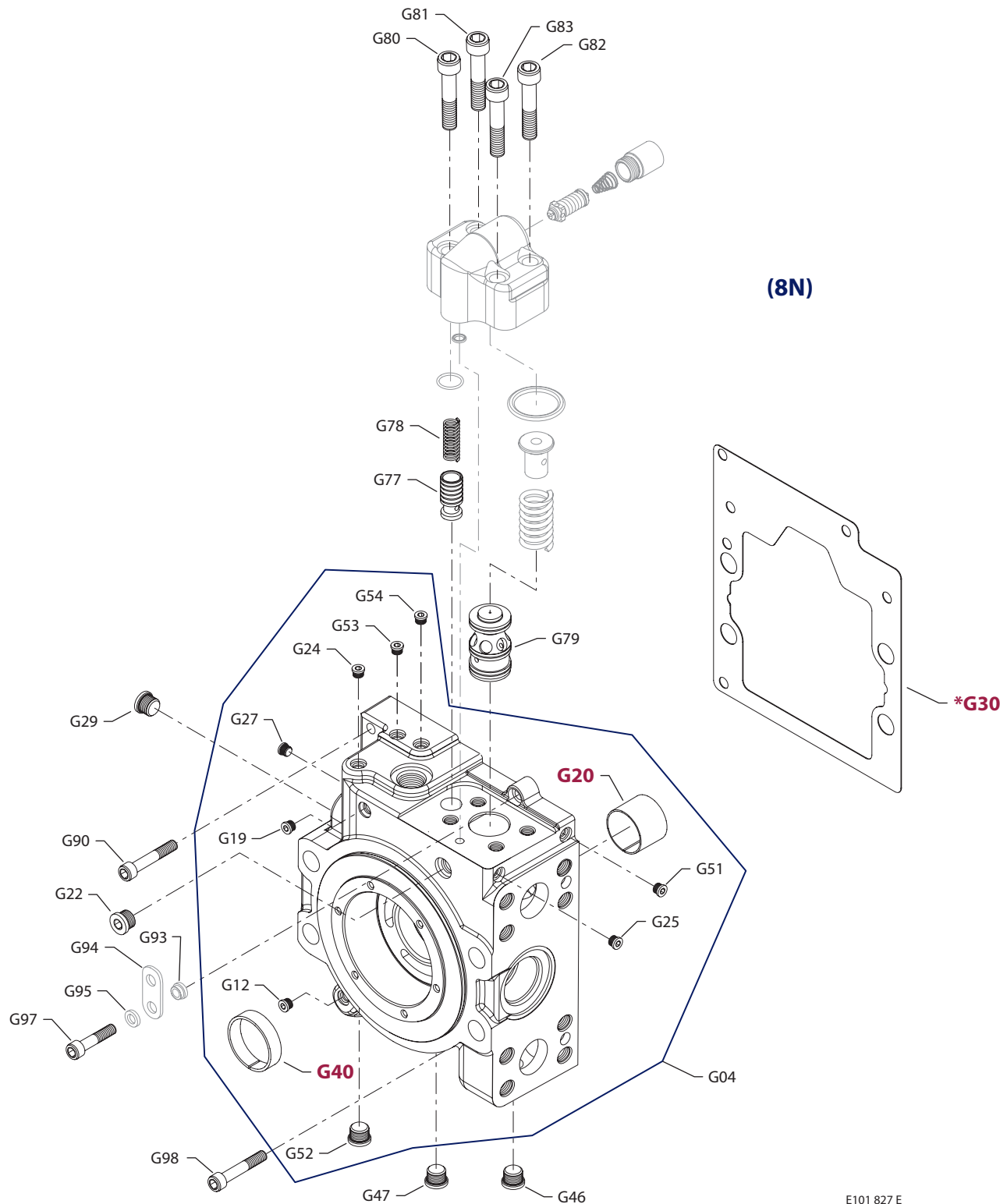
* = included in overhaul seal kit

E101 827 E

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

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



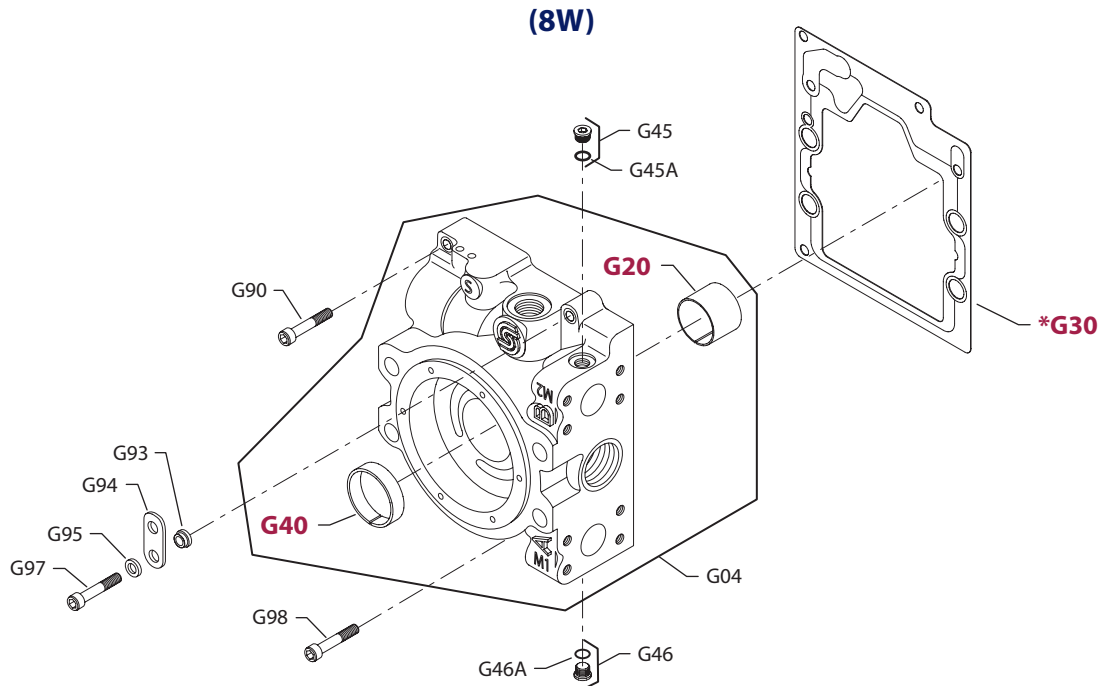
* = included in overhaul seal kit

E101 827 E

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

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



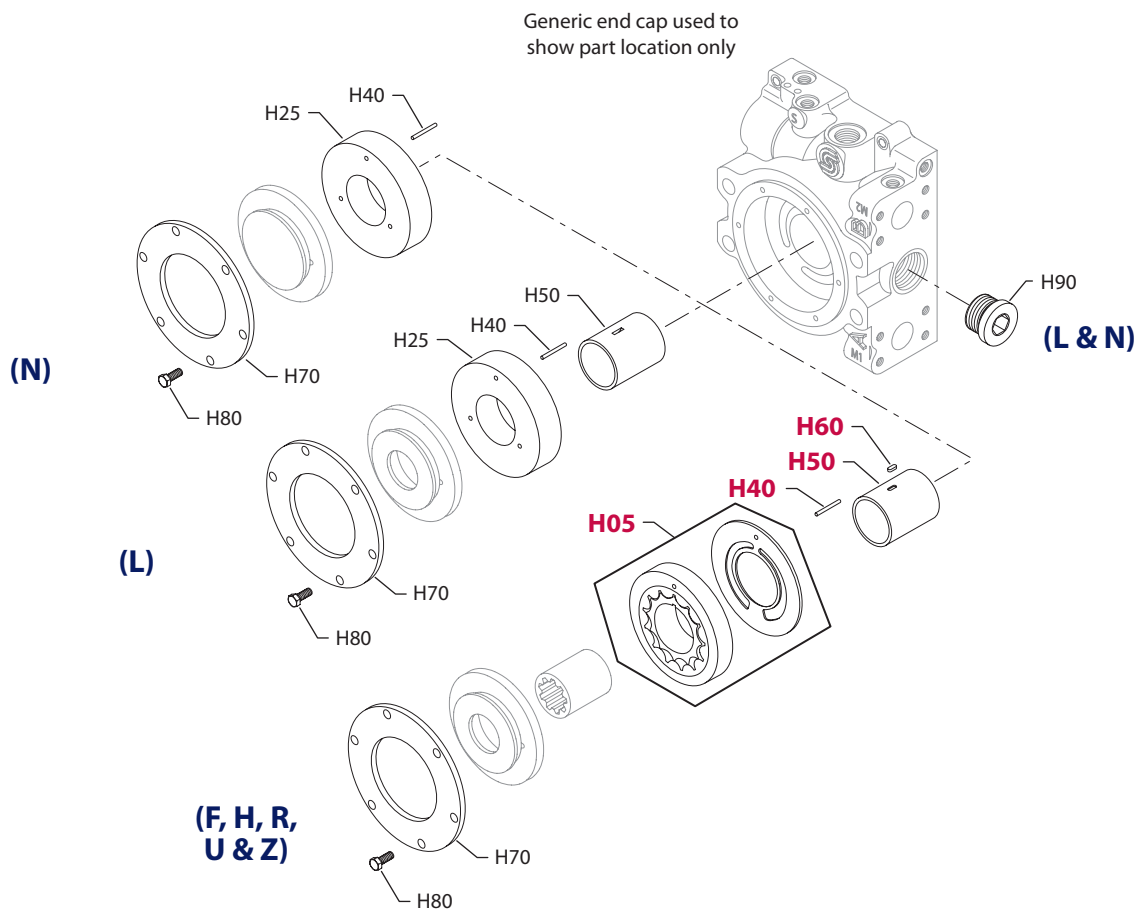
* = included in overhaul seal kit

E100 903 E

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

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



E100 904E

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

CHARGING SYSTEM

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
F & Z (special*)	H05	04-49		8200240	Charge pump set, 26 cc	1
	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		308718	Pin	1
	H50	93-34		513436	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

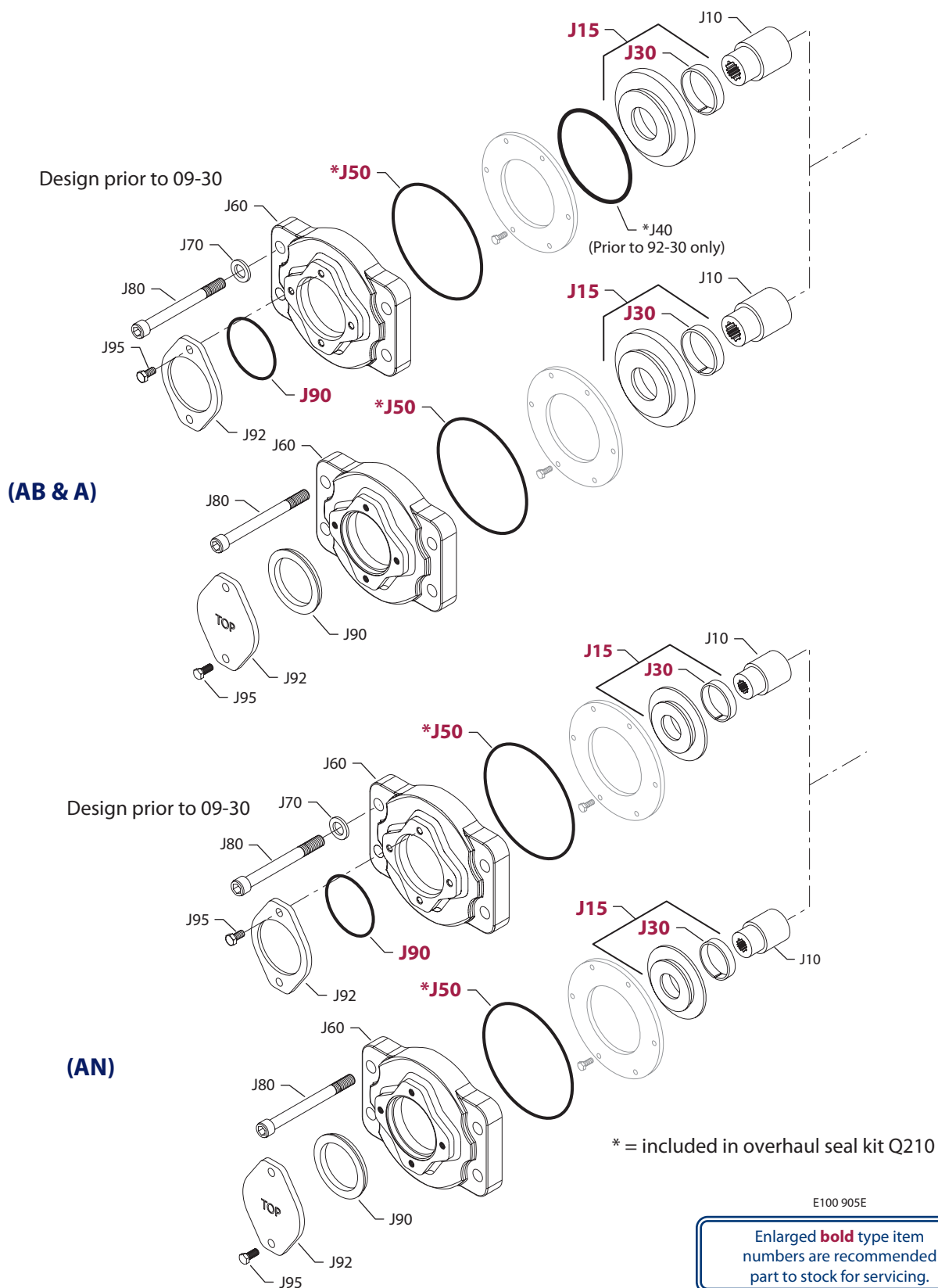
H	H05	93-34		501406	Charge pump, set 34 cc	1
	H40	89-41		308718	Pin	1
	H50	93-34		513436	Charge pump shaft (SB-1994-025)	1
	H60	89-41		734608	Key	1
	H70	89-41		509361	Retaining plate	1
	H80	89-41		378083 (9007210-0804)	Screw	6

L	H25	89-41		11077719	Charge pump spacer	1
	H40	89-41		308718	Pin	1
	H50	93-34		513436	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	93-29		308718	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		513435	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

U	H05	96-02		509579	Charge pump, set 30 cc	1
	H40	96-02		308718	Pin	1
	H50	96-02		513436	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



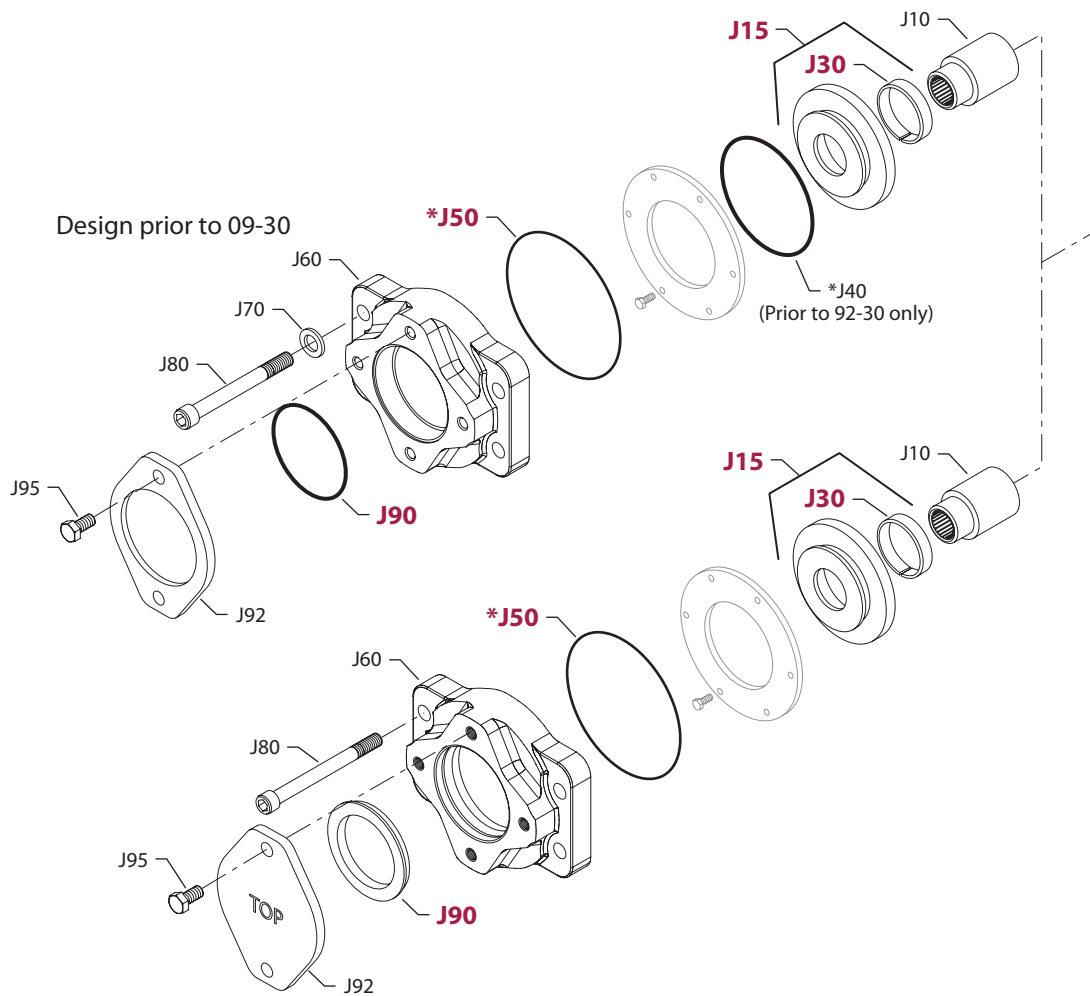
AUXILIARY MOUNTING

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

(B, V, BB, BC & BJ)



* = included in overhaul seal kit Q210

E100 906E

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

AUXILIARY MOUNTING

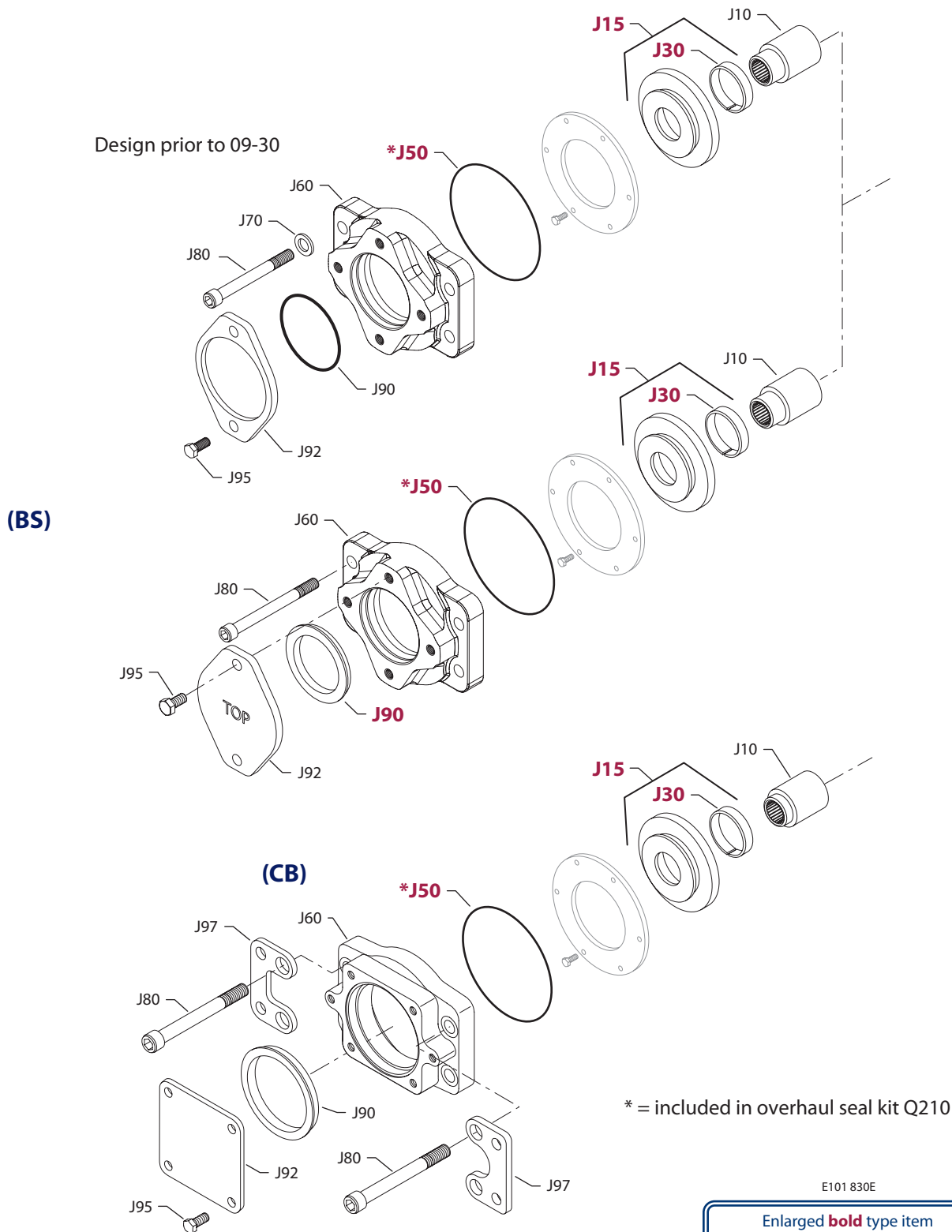
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
BB & V	J10	89-41		11053285	Coupling, 15 tooth	1
	J15	89-41		501402	Cover assembly, CW (SB-1994-025*)	1
	J15	89-41		501401	Cover assembly, CCW (SB-1994-025*)	1
	J30	89-41		303651	Bushing	1
	J40	89-41	92-29	354324	O-ring	1
	J50	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

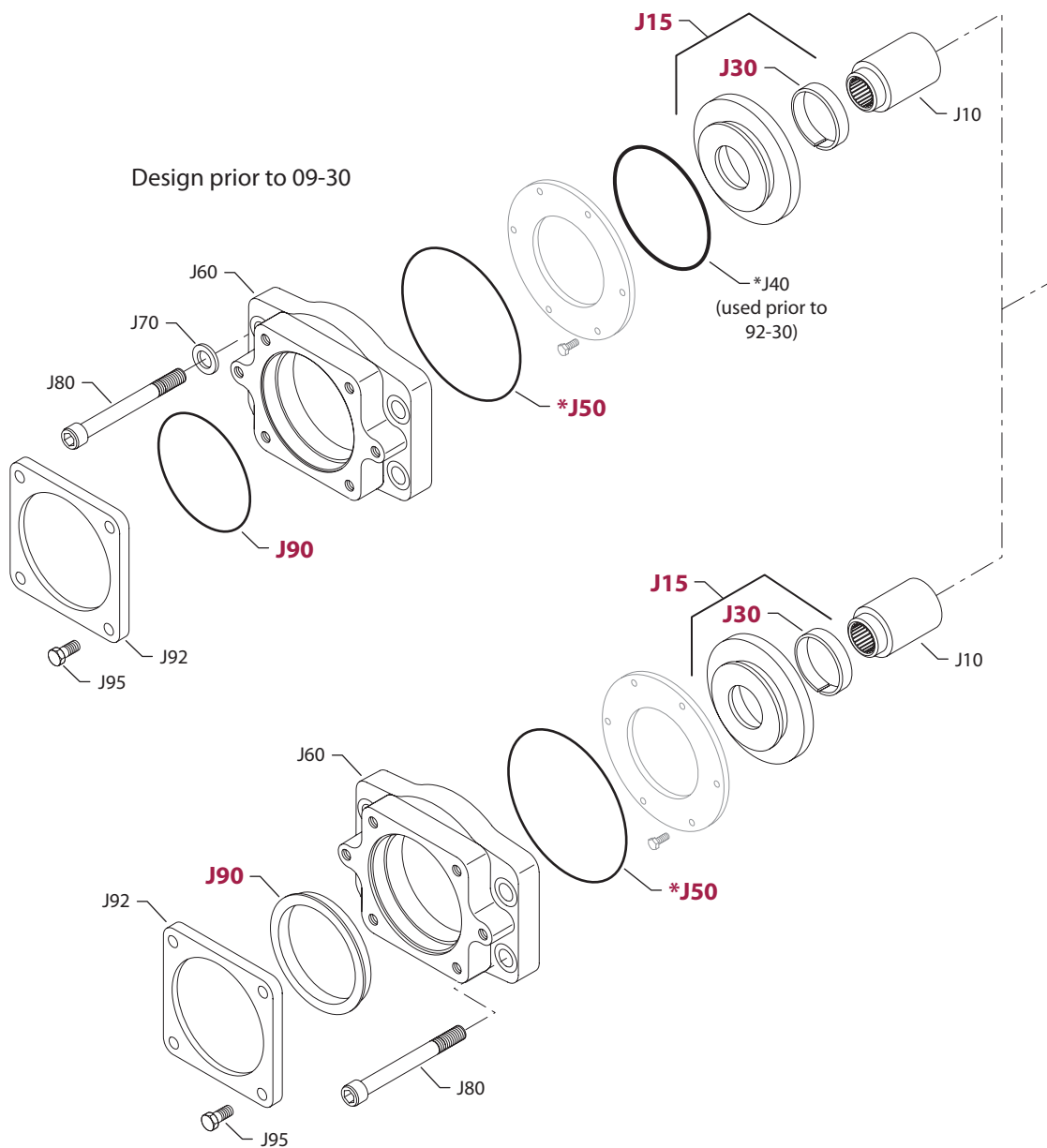
BJ	J10	05-01		8100148	Coupling, 13 tooth	1
	J15	05-01		8800832	Cover assembly, CW	1
	J15	05-01		8800833	Cover assembly, CCW	1
	J30	05-01		664771	Bushing	1
	J50	05-01		505068	O-ring	1
	J60	09-29		11039180	Flange adaptor, SAE B	1
	J60	05-01	09-29	503230	Flange adaptor, SAE B (SB-2009-075)	1
	J70	05-01	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



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

(C, CD, CF & CK)



* = included in overhaul seal kit Q210

E100 907E

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

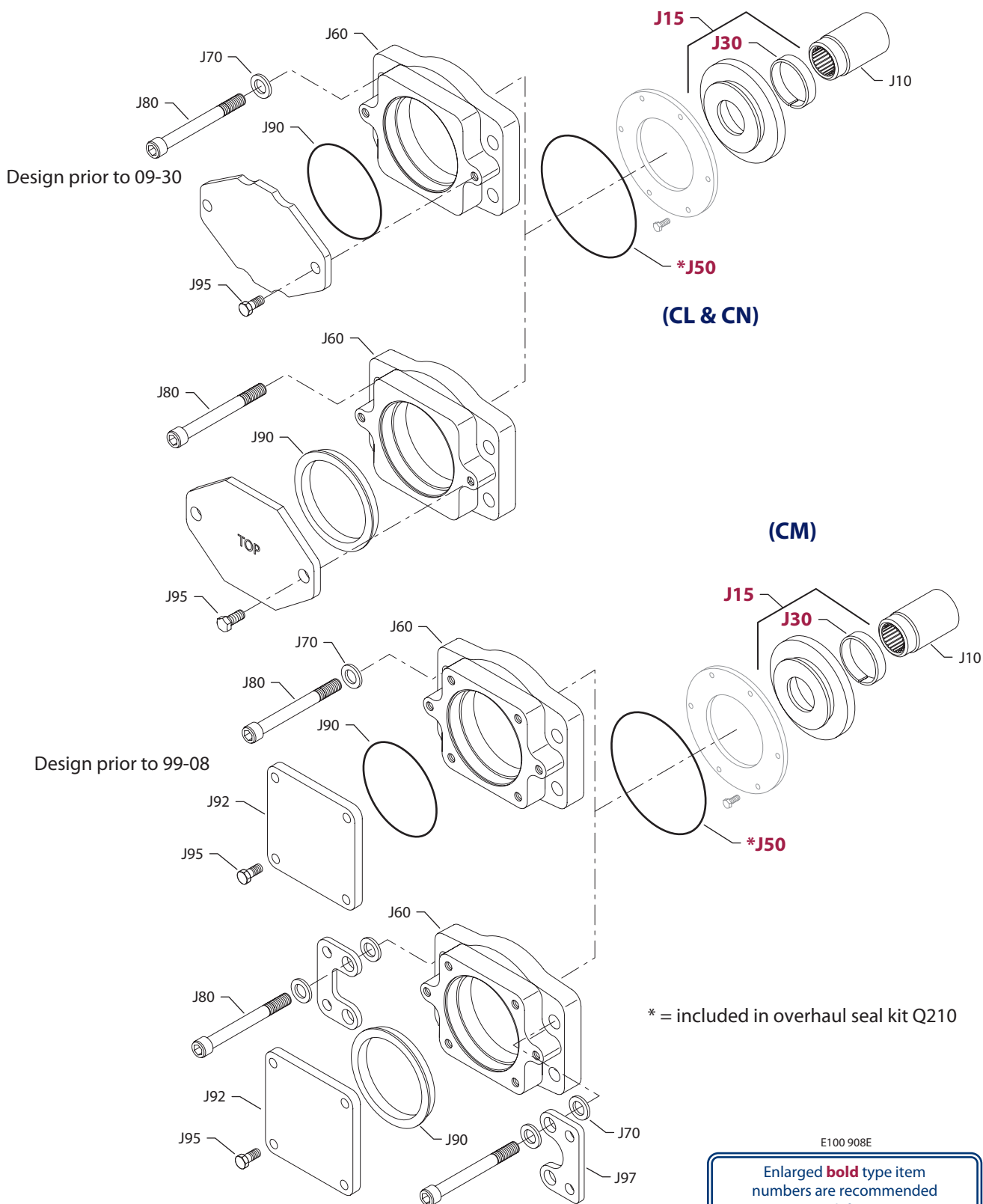
AUXILIARY MOUNTING

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 B (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		11053287	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 B (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

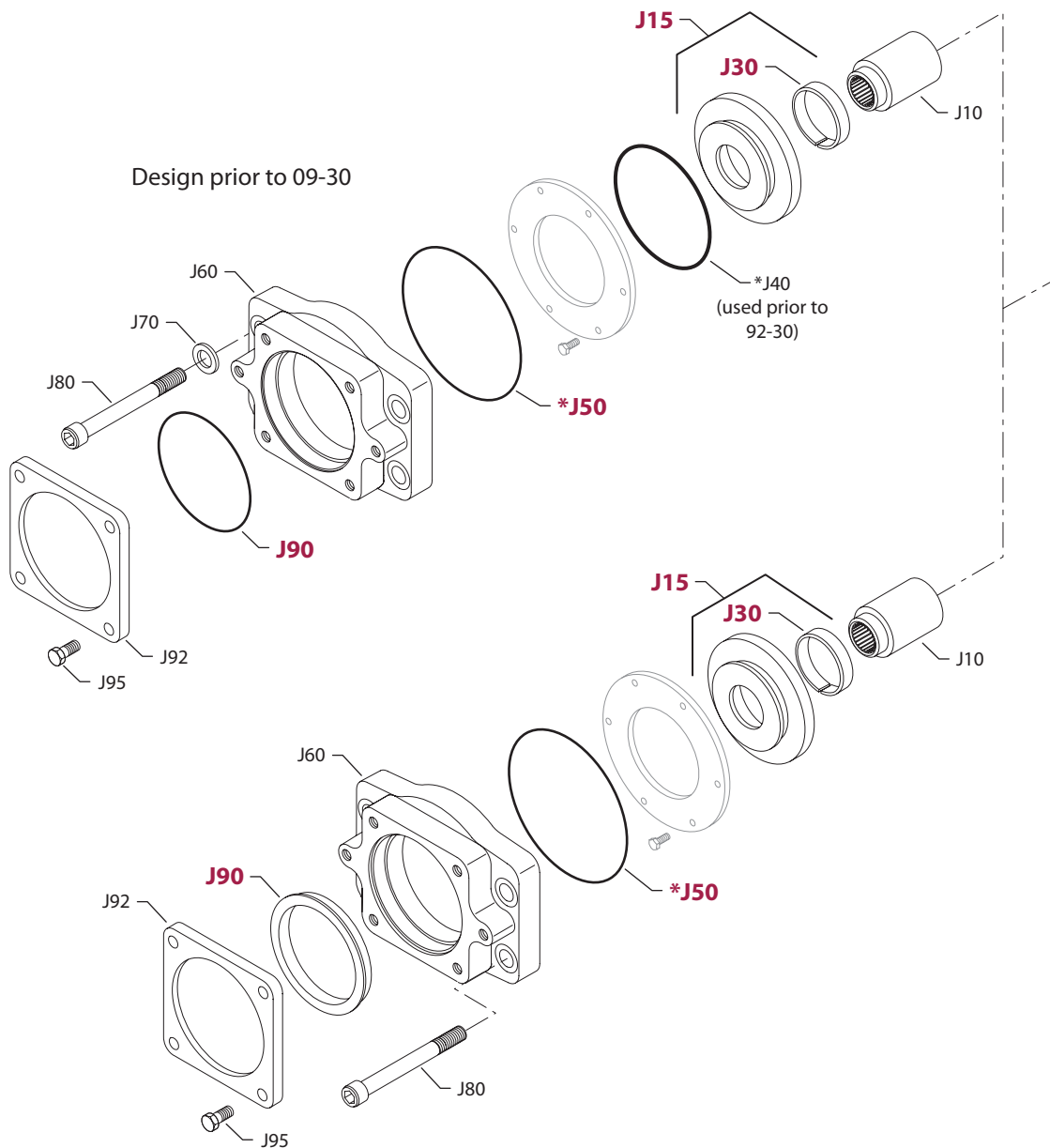
CK	J10	96-18		11053338	Coupling, 25 tooth	1
	J15	96-18		501402	Cover assembly, CW	1
	J15	96-18		501401	Cover assembly, CCW	1
	J30	96-18		303651	Bushing	1
	J50	96-18		505068	O-ring	1
	J60	09-30		513617	Flange adaptor, SAE C	1
	J60	96-18	09-29	505116	Flange adaptor, SAE B (SB-2009-076)	1
	J70	96-18	09-29	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



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		11053287	Coupling, 21 tooth	1
	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	94-49		664920	Washer	8
	J70	89-41	94-48	664920 (9009625-0132)	Washer	4
	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		506297	Auxiliary mounting bracket	1
CN	J10	96-18		11053284	Coupling, 14 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		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	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 (SB-2009-076)	1
	J95	96-18		9007200-6222	Screw	2

(CS & CY)



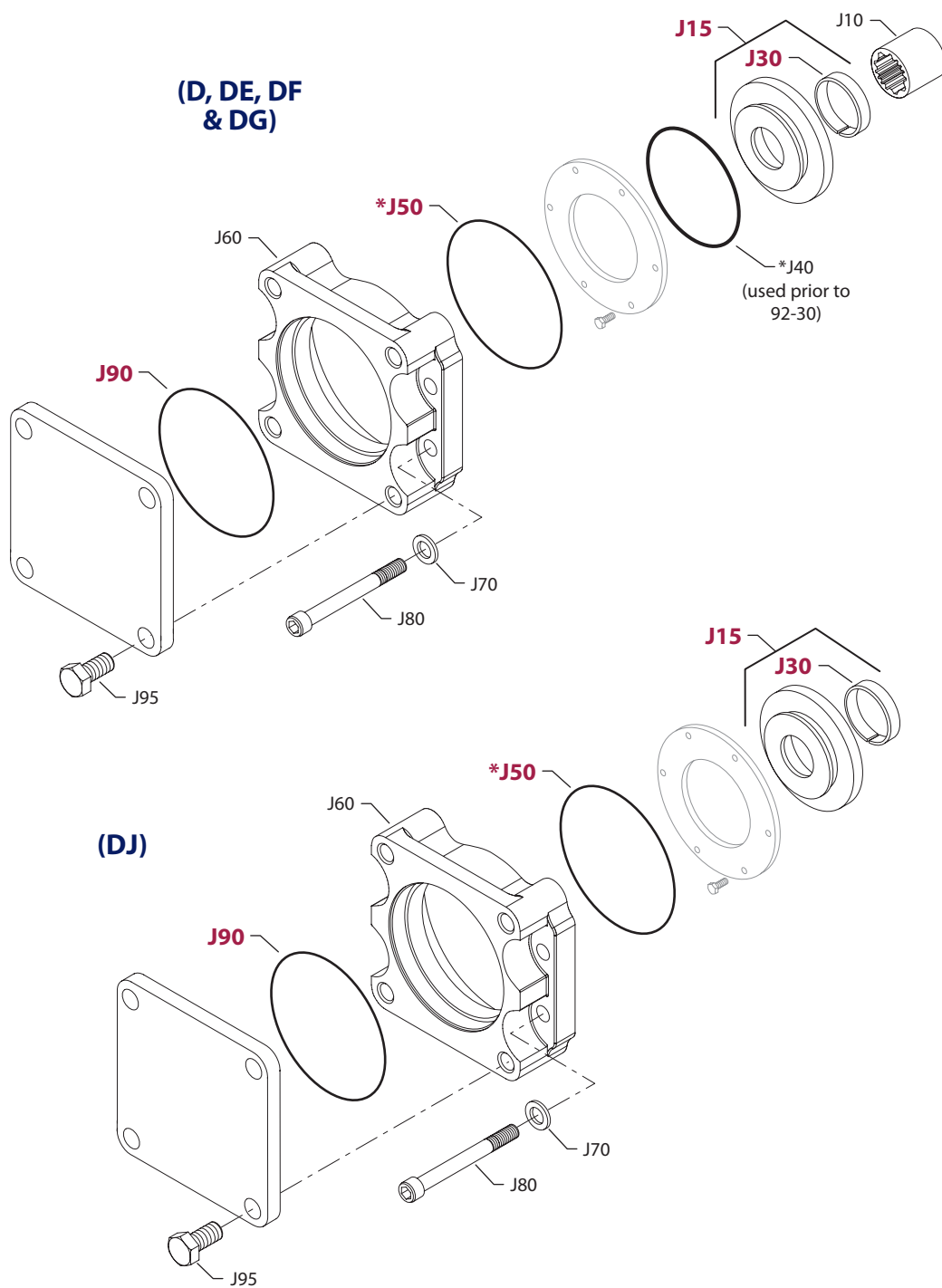
* = included in overhaul seal kit Q210

E100 907E

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

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	1
	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



* = included in overhaul seal kit Q210

E100 909E

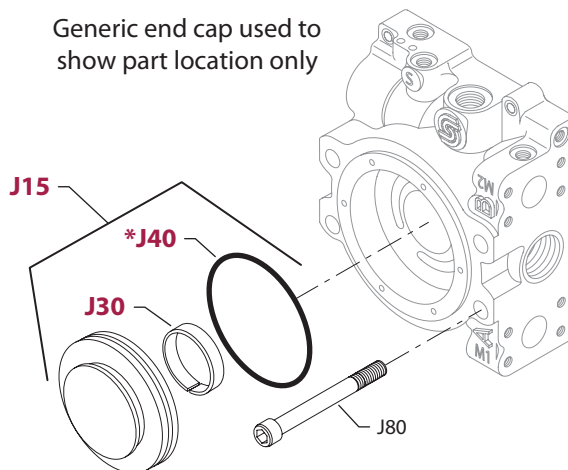
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		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		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		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		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

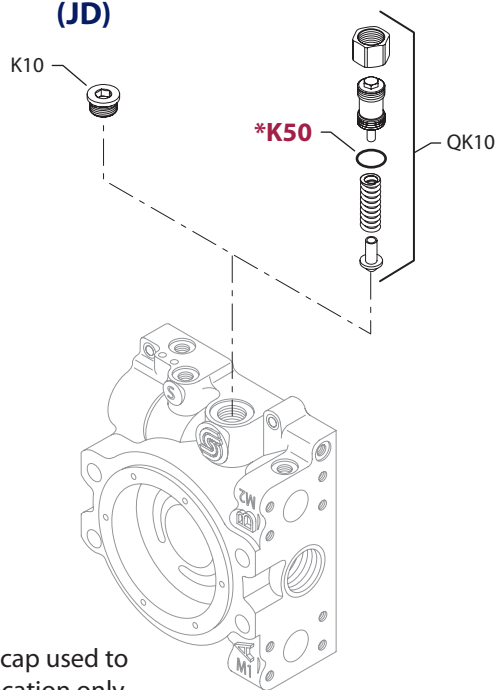
(NN, NT & NV)

Generic end cap used to
show part location only



(14-42 & XX)

(JD)



Generic end cap used to
show part location only

E100 910E

* = included in overhaul seal kit Q210

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

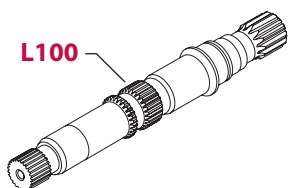
AUXILIARY MOUNTING

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		916940	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		916940	O-ring	1
	J80	96-18		518721	Screw	4
NV	J15	03-08		8800834	Cover assembly	1
	J30	03-08		664771	Bushing	1
	J40	03-08		680892 (9004104-0440)	O-ring	1
	J80	03-08		518721	Screw	4

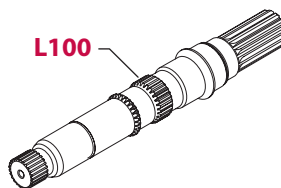
CHARGE PRESSURE RELIEF

14-32	QK10	89-41		8510272	Charge relief valve kit, 18-30 bar	1
	K50	89-41		001156 (9004201-7500)	O-ring	1
34-42	QK10	96-13		8510390	Charge relief valve kit, 30-42 bar	1
	K50	96-13		001156 (9004201-7500)	O-ring	1
JD	K10	96-13		664524 (9005110-9000)	Plug assembly	1
XX	QK10	89-41		8510272	Charge relief valve kit, 18-30 bar	1
	K50	89-41		001156 (9004201-7500)	O-ring	1

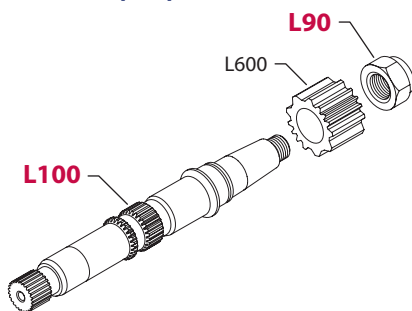
(C4, C8, D8, F1, F4,
F5, F6 & F8)



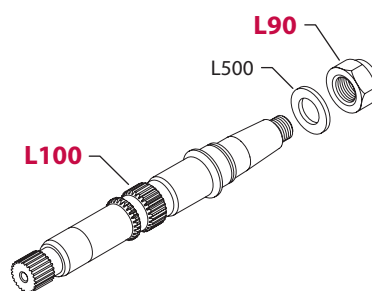
(J5)



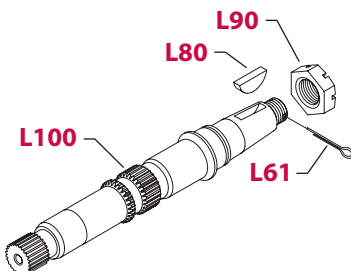
(TH)



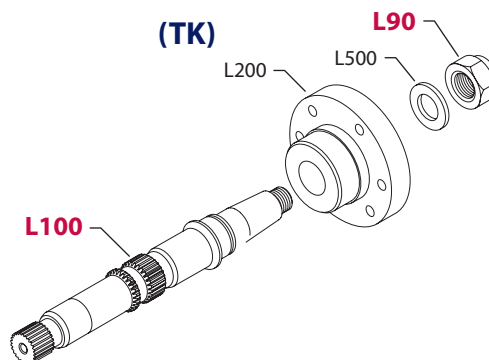
(T7 & TN)



(T4)



(TK)



E100 924E

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

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
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D8	L100	89-46		503443	Shaft, 27 tooth spline, 16/32, M10 tapped thread	1
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F1	L100	89-46		335695	Shaft, 13 tooth spline, 8/16	1
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F4	L100	96-45		518465	Shaft, 13 tooth spline, 8/16, special*	1
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* 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
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F6	L100	89-46		11002449	Shaft, 13 tooth spline, 8/16, special length	1
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F8	L100	89-46		11031204	Shaft, 27 tooth spline, 16/32	1
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J5	L100	92-16		506911	Shaft, 13 tooth spline, 8/16, no relief	1
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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

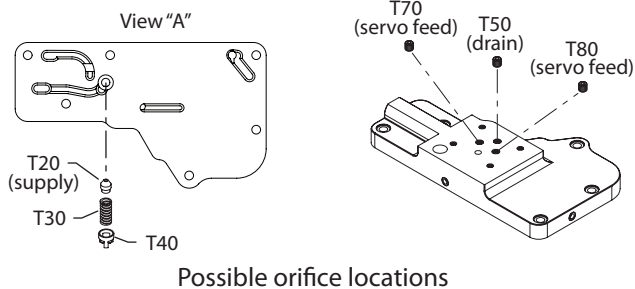
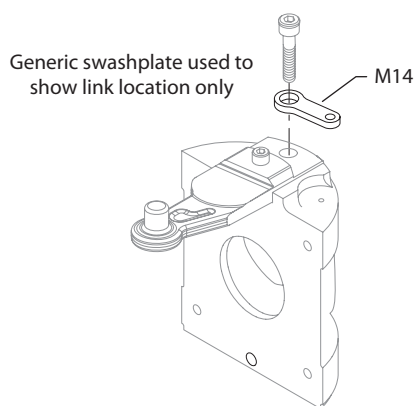
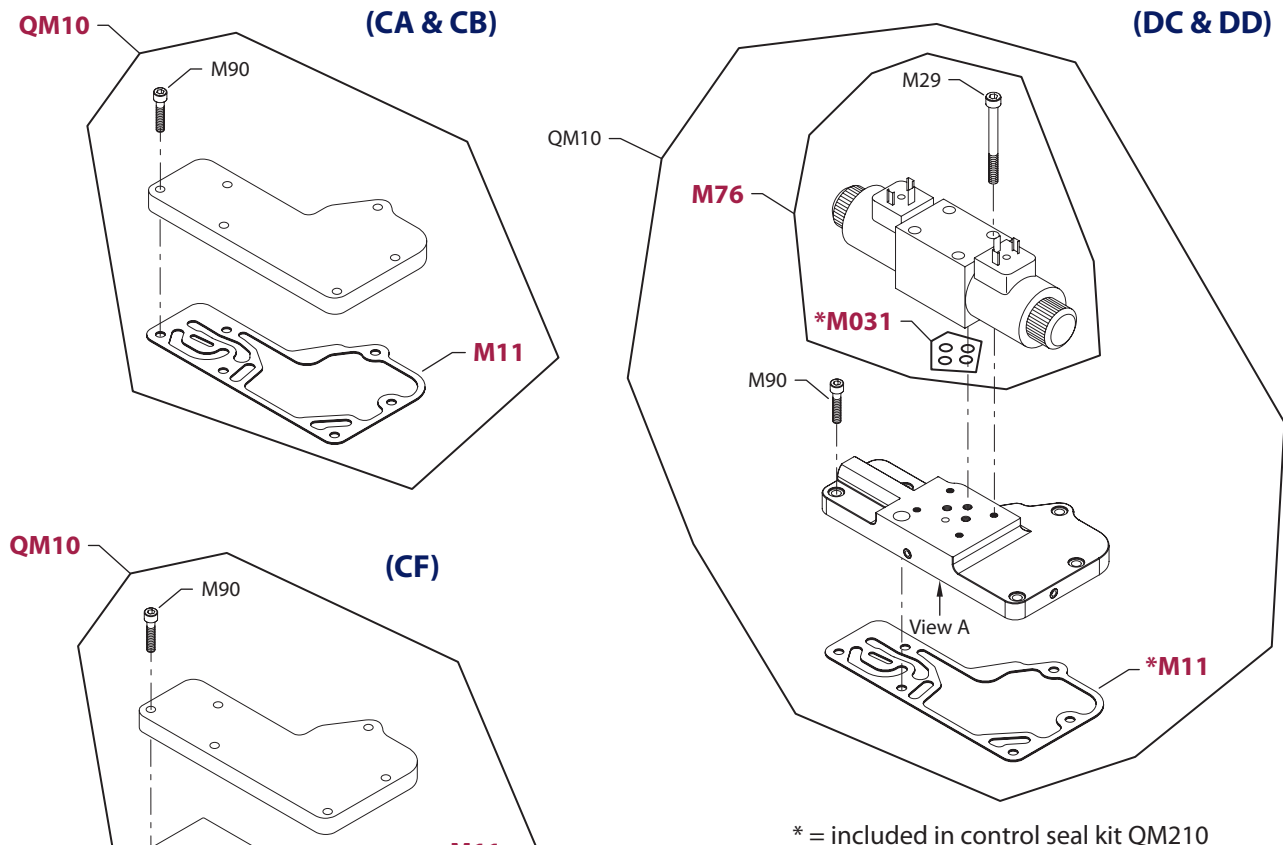
T7	L90	98-19		508784	Self locking nut, M30	1
	L100	98-19		511619	Shaft, 1.75" tapered, no keyway	1
	L500	98-19		511628	Washer	1

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.



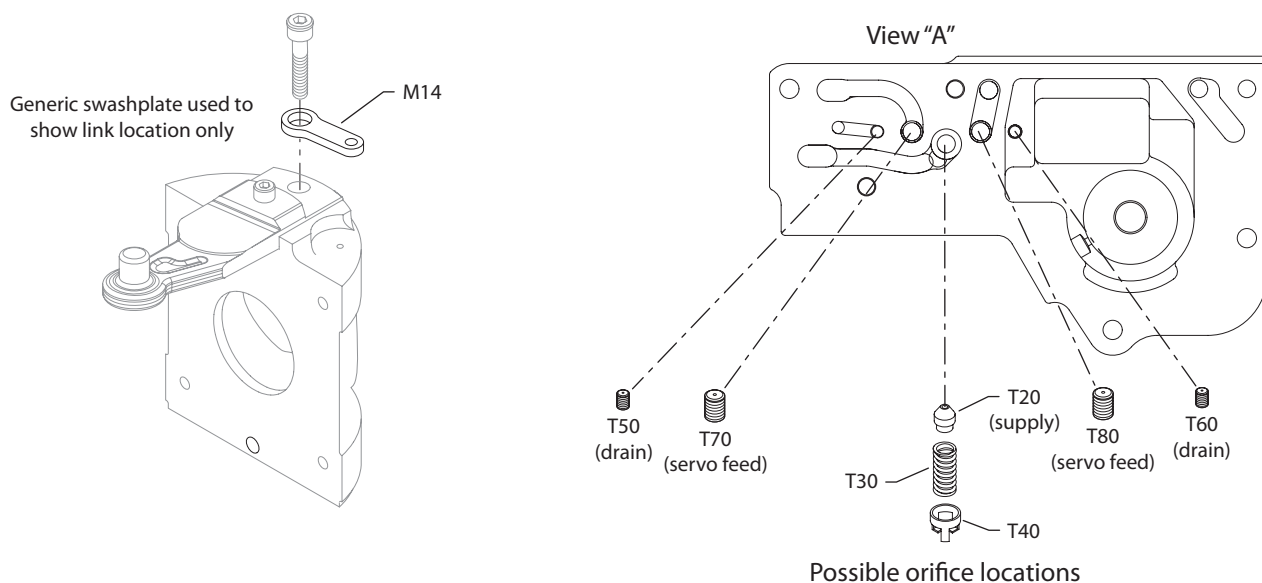
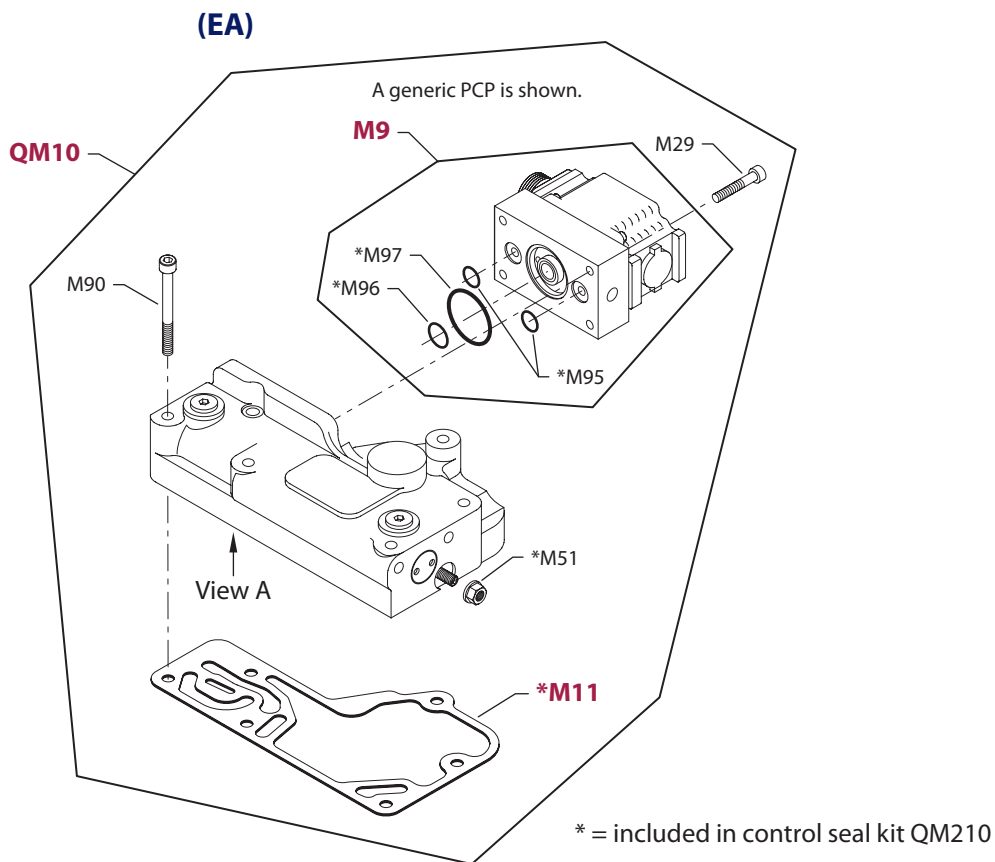
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E100 716E

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

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		340091	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		340091	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



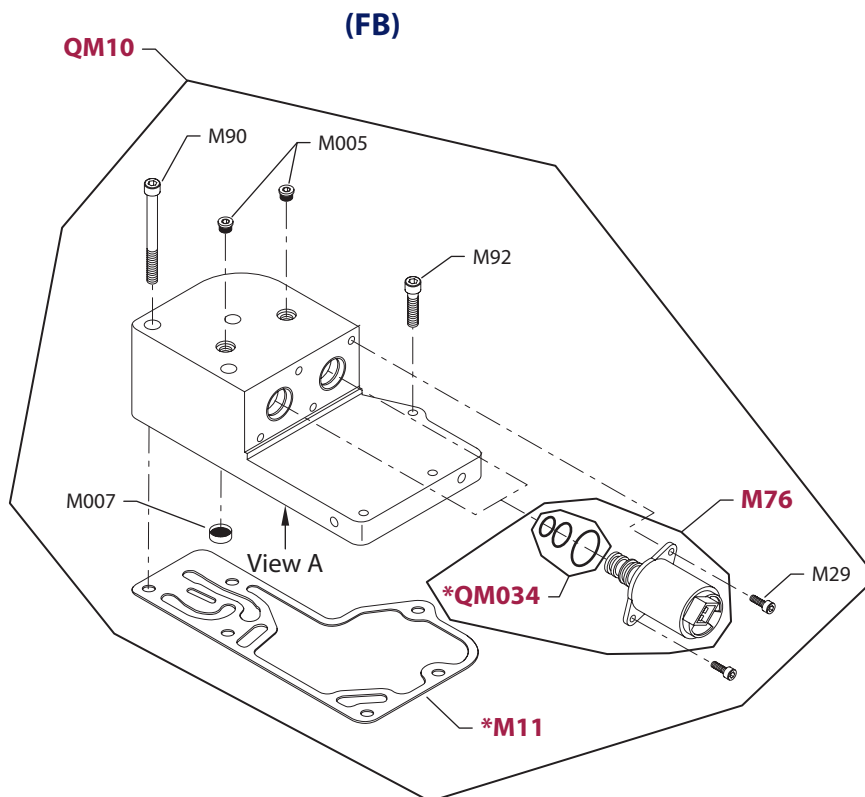
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to

E101 835E

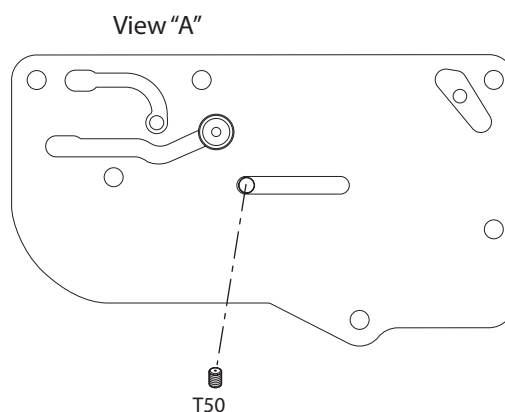
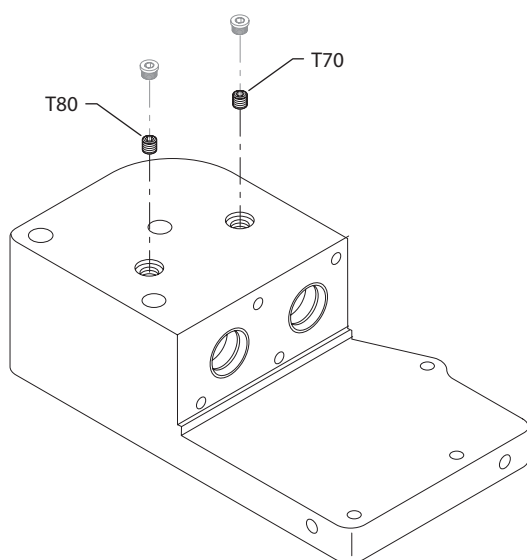
Enlarged **bold** type item numbers are recommended part to stock for servicing.

CONTROL

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
EA	M9	92-19		MCV110A1017	PCP, MS connector	1
	M11	92-19		8800923	Control gasket	1
	M14	92-19		340091	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 commector	1
	QM210	92-19		11096174	EDC1 seal kit	1



* = included in control seal kit QM210



Possible orifice locations

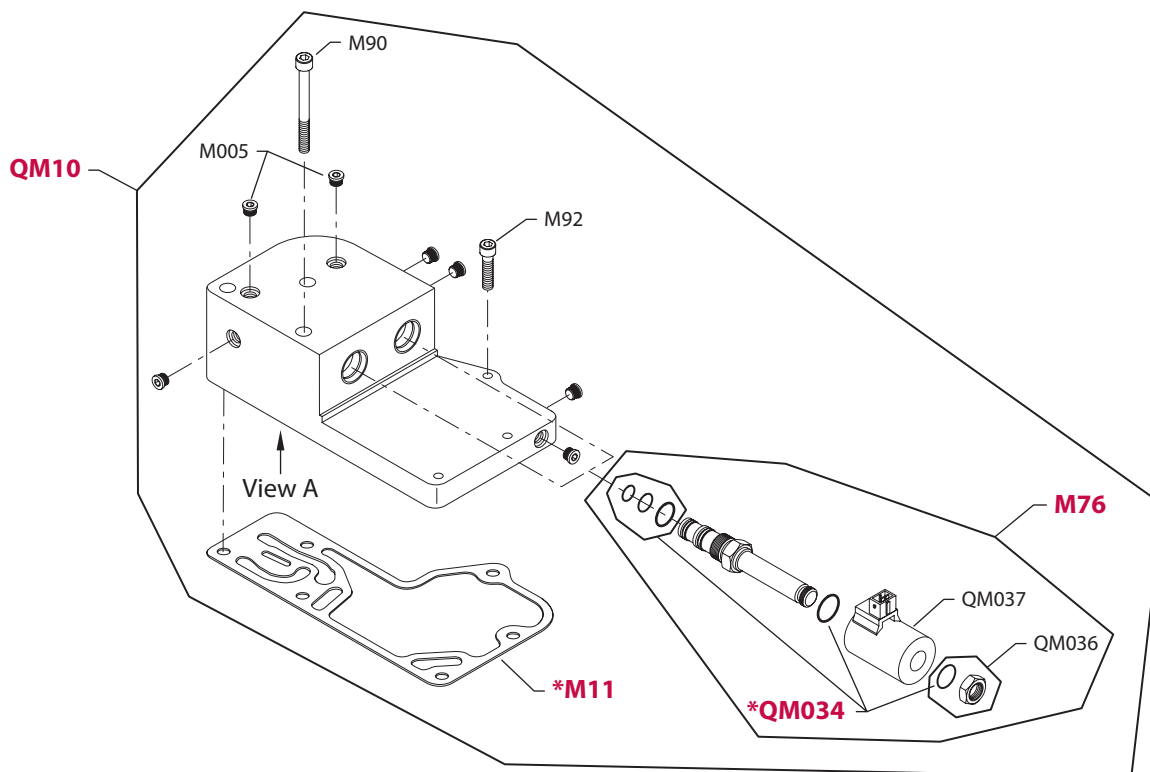
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E101 836E

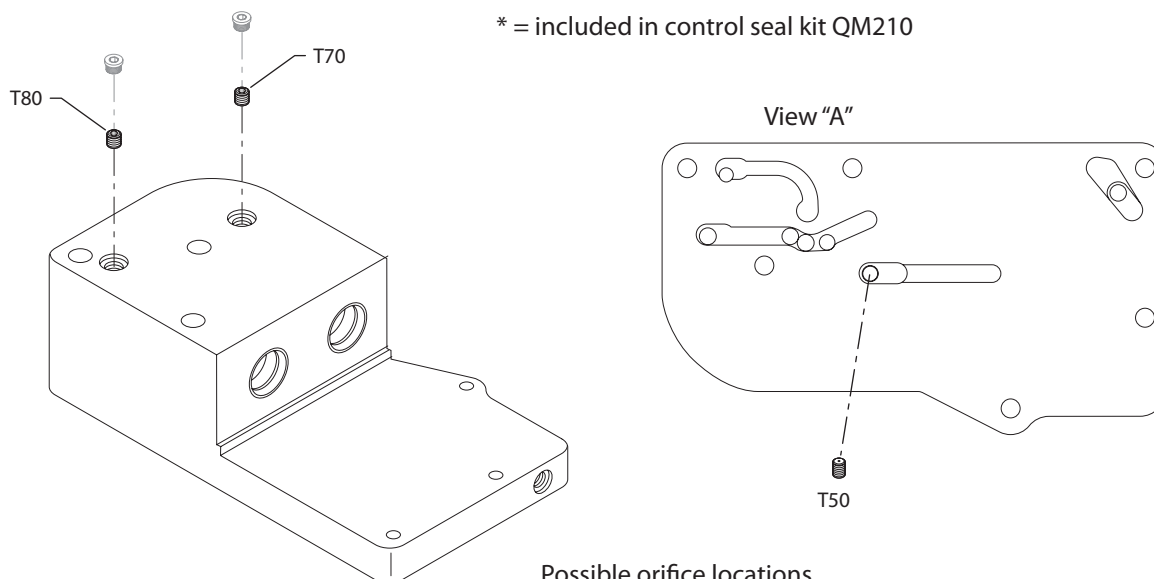
Enlarged **bold** type item numbers are recommended part to stock for servicing.

CONTROL

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
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



* = included in control seal kit QM210



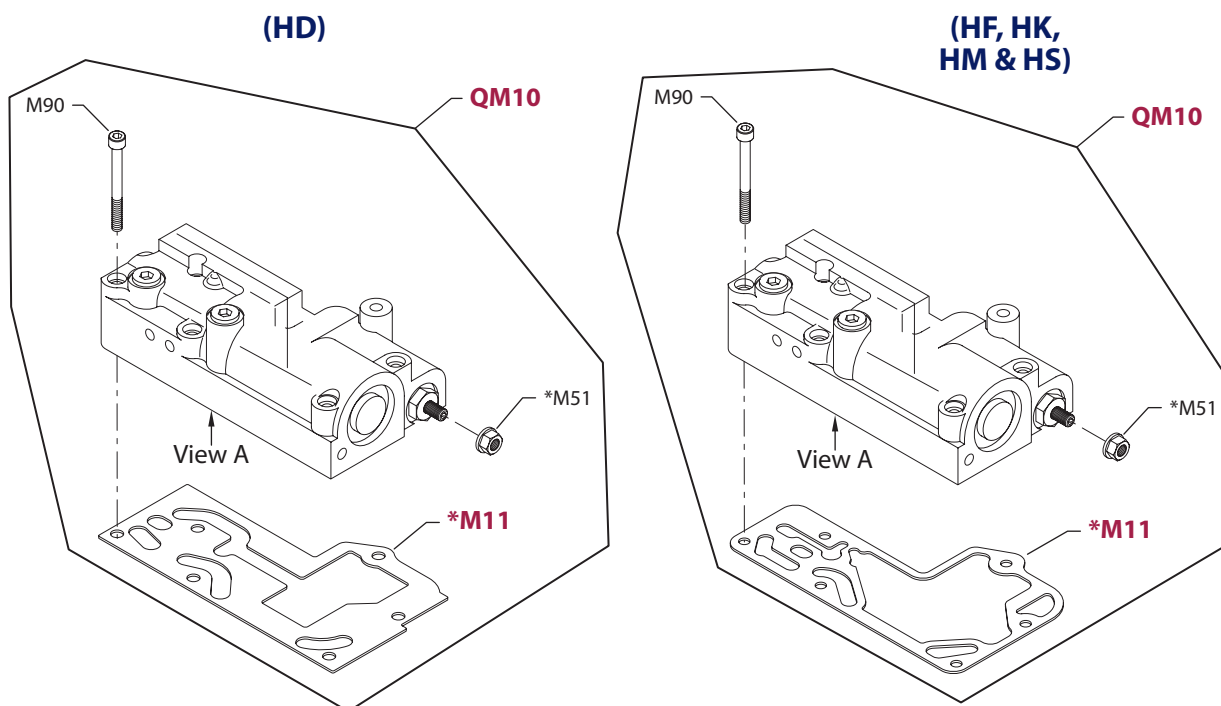
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E100 925E

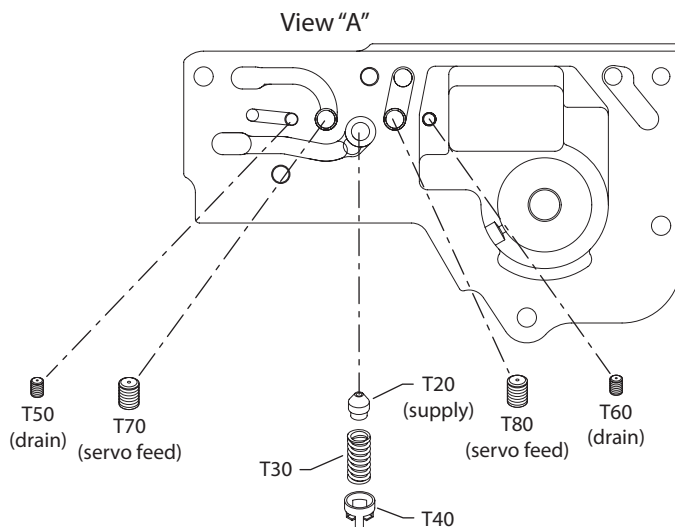
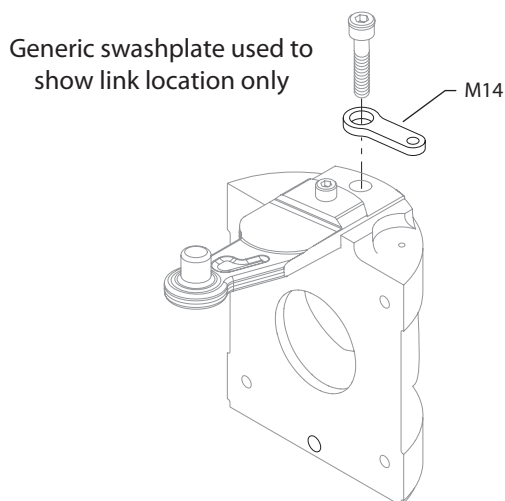
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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	1
	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



* = included in control seal kit QM210



Possible orifice locations

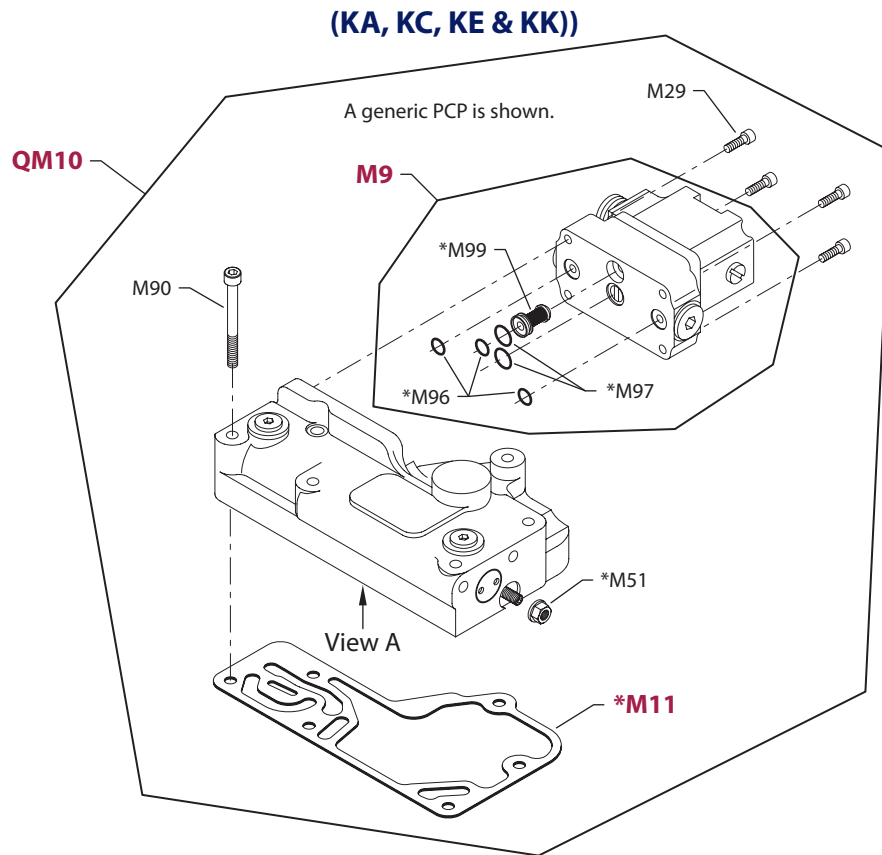
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E101 837E

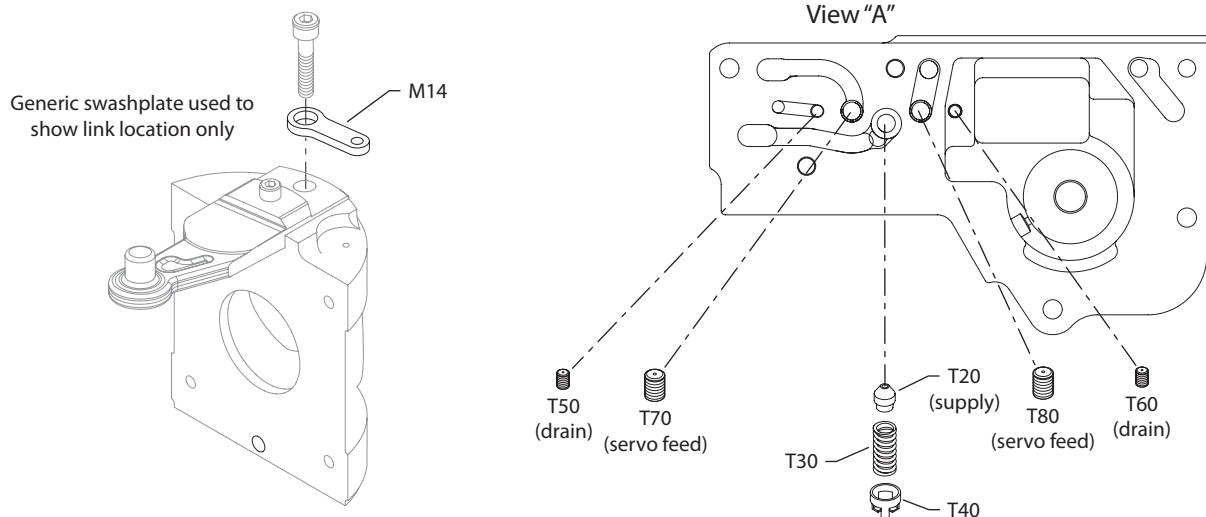
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		340091	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)	1
	M14	96-17		340091	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)	1
	M14	04-49		340091	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)	1
	M14	98-27		340091	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)	1
	M14	98-27		340091	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



* = 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.

Possible orifice locations

E100 926E

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

CONTROL

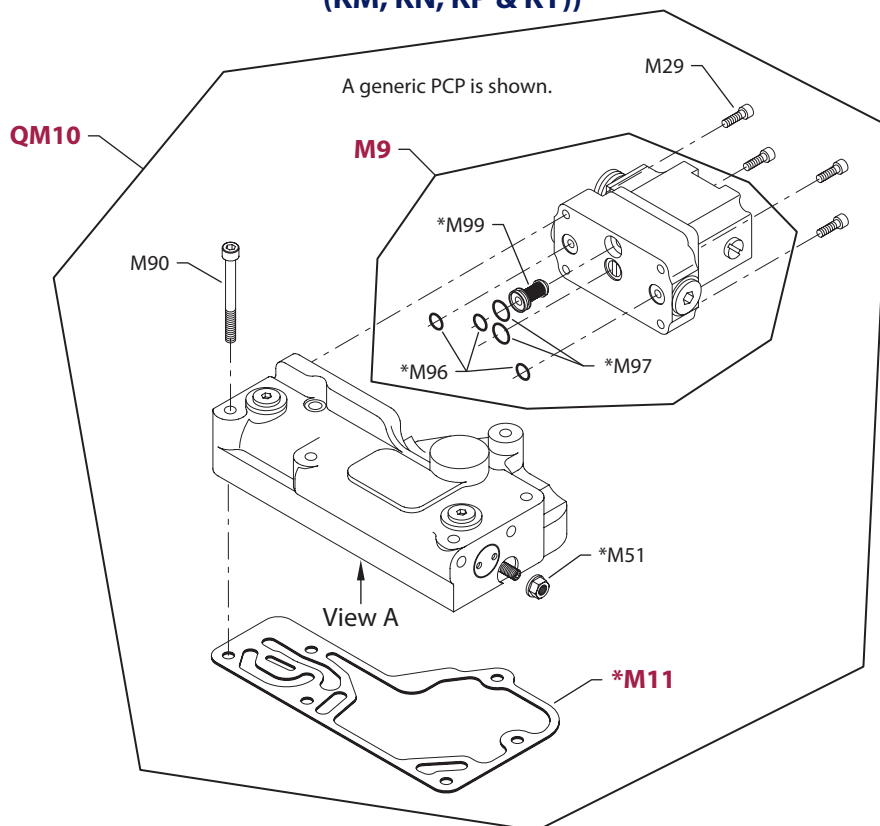
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
KA	M9	98-42		MCV116G4201	PCP, MS connector, dual coil	1
	M11	98-42		8800923	Control gasket	1
	M14	98-42		340091	Feedback link	1
	M29	98-42		K07067	Screw	4
	M51	98-42		9003509-0008	Seal nut	1
	M90	98-42		692889 (9007314-0611)	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

KC	M9	00-44		MCV116C1401	PCP, MS connector, dual coil	1
	M11	00-44		8800923	Control gasket	1
	M14	00-44		340091	Feedback link	1
	M29	00-44		K07067	Screw	4
	M51	00-44		9003509-0008	Seal nut	1
	M90	00-44		692889 (9007314-0611)	Screw	6
	M96	00-44		011296 (9004105-0120)	O-ring	3
	M97	00-44		784686 (9004105-0130)	O-ring	1
	M99	00-44		K08572	Filter assembly	1
	QM10	00-44		11018293	EDC kit, MS connector	1
	QM210	00-44		11095724	EDCS seal kit	1

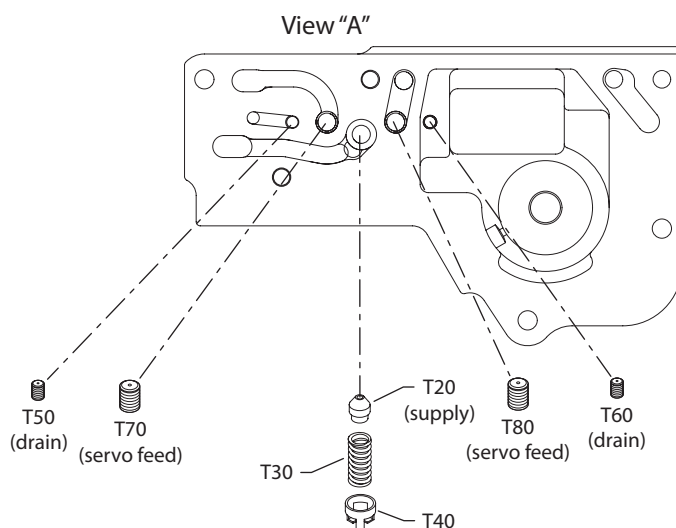
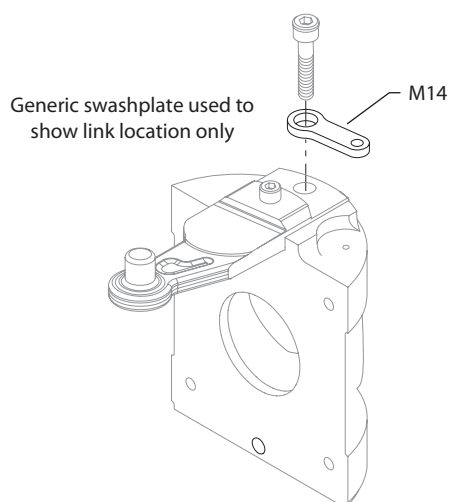
KE	M9	03-27		MCV116F3118	PCP, Deutsch connector	1
	M11	03-27		8800923	Control gasket	1
	M14	03-27		340091	Feedback link	1
	M29	03-27		K07067	Screw	4
	M51	03-27		9003509-0008	Seal nut	1
	M90	03-27		692889 (9007314-0611)	Screw	6
	M96	03-27		011296 (9004105-0120)	O-ring	3
	M97	03-27		784686 (9004105-0130)	O-ring	1
	M99	00-44		K08572	Filter assembly	1
	QM10	03-27		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		340091	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, KN, KP & KT))



* = included in control seal kit QM210



Possible orifice locations

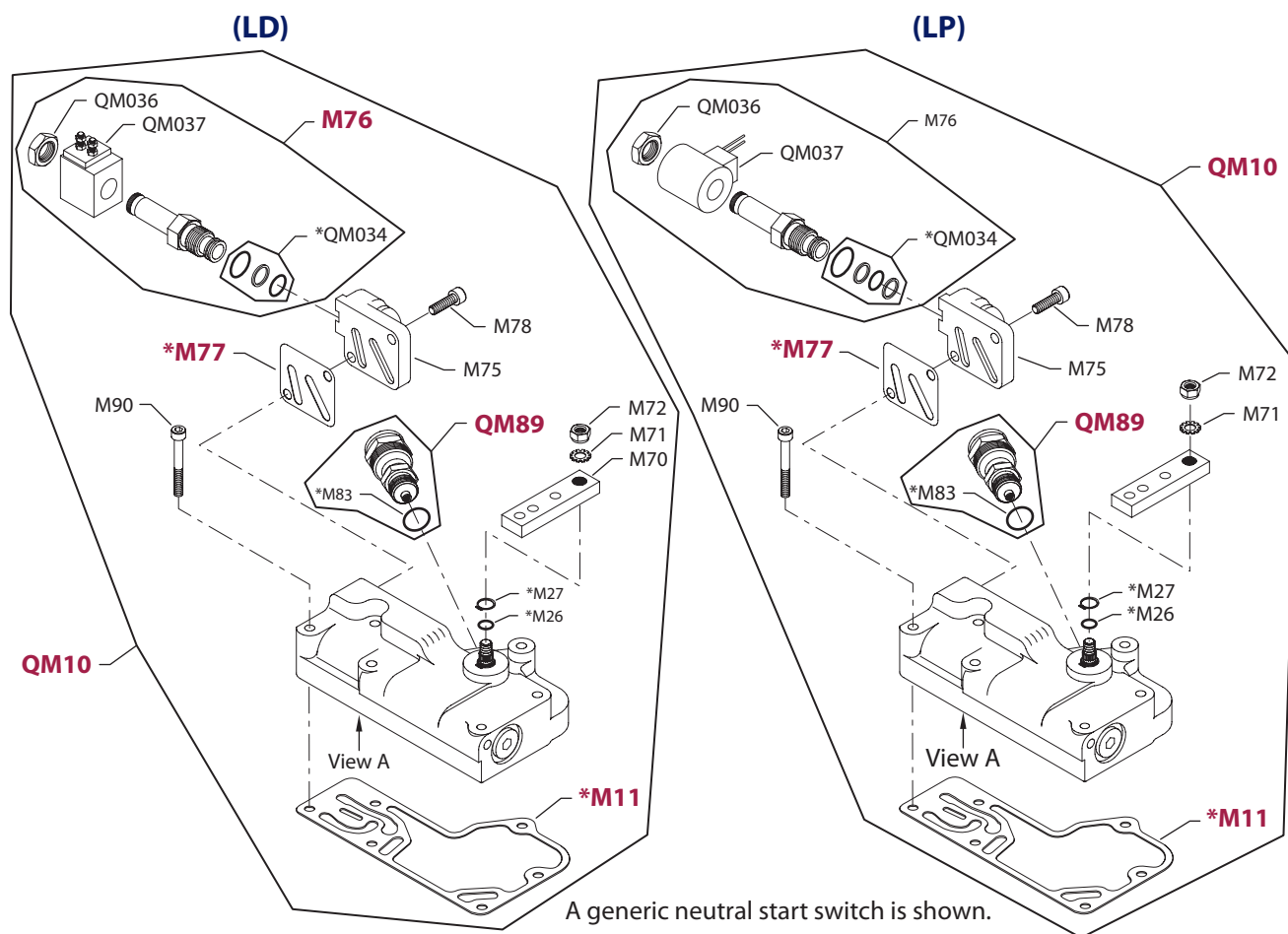
E100 926E

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.

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

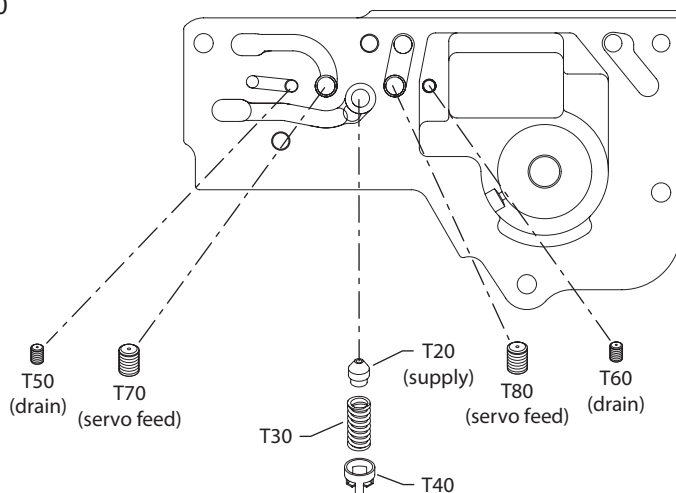
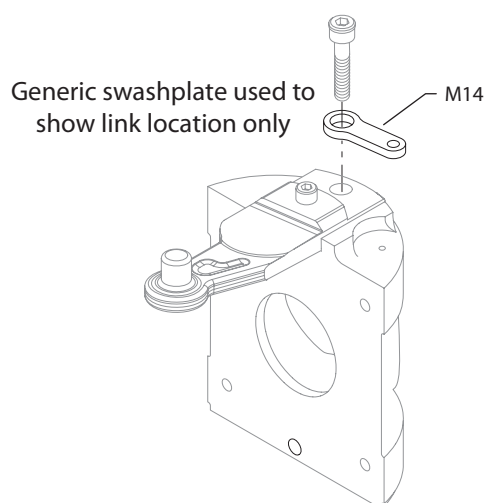
CONTROL

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
KM	M9	98-42		MCV116G4213	PCP, 4-wire Metripak connector	1
	M11	98-42		8800923	Control gasket	1
	M14	98-42		340091	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
KN	M9	06-13		MCV116A3501	PCP, MS connector	1
	M11	06-13		8800923	Control gasket	1
	M14	06-13		340091	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	1
	M11	95-26		8800923	Control gasket	1
	M14	95-26		340091	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	1
	M11	06-19		8800923	Control gasket	1
	M14	06-19		340091	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



* = included in control seal kit QM210

View "A"



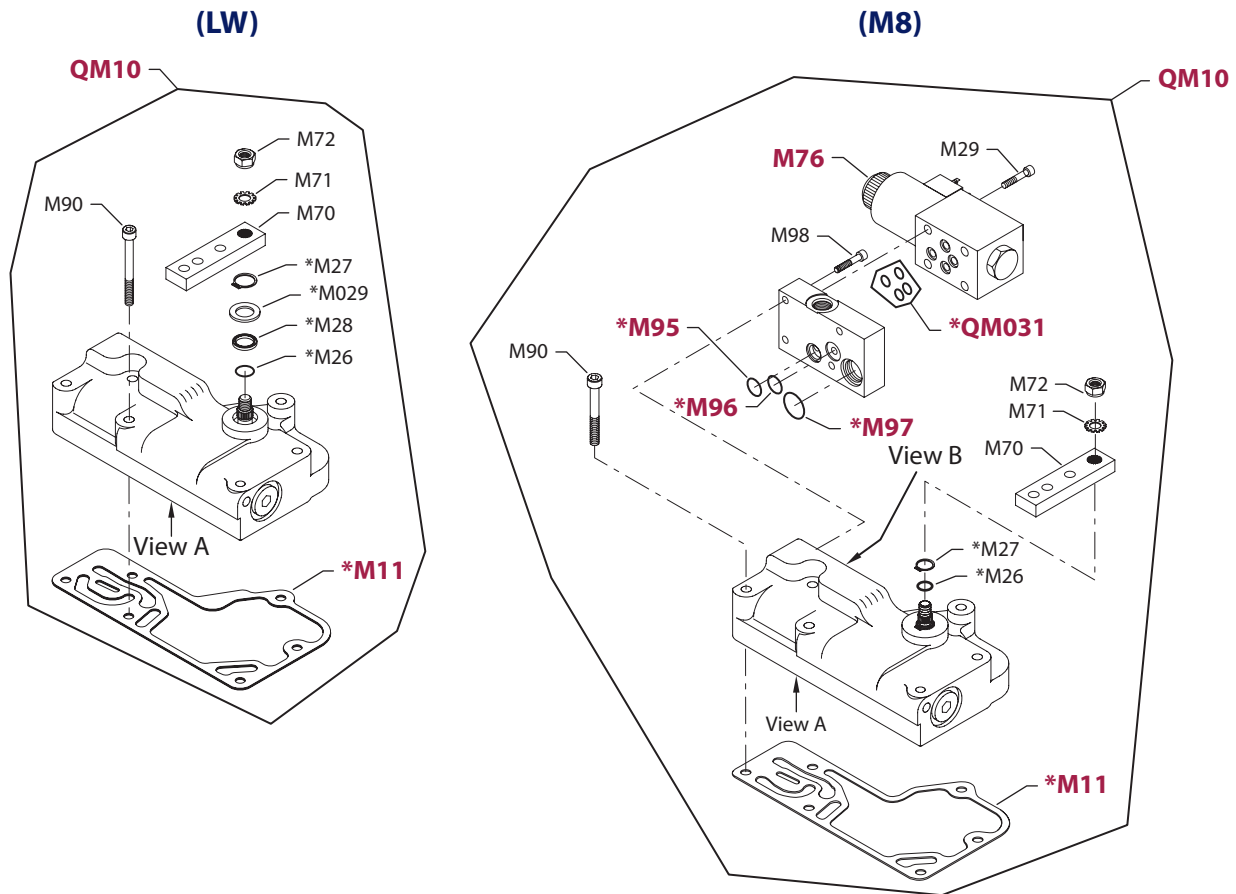
Possible orifice locations

E100 927E

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

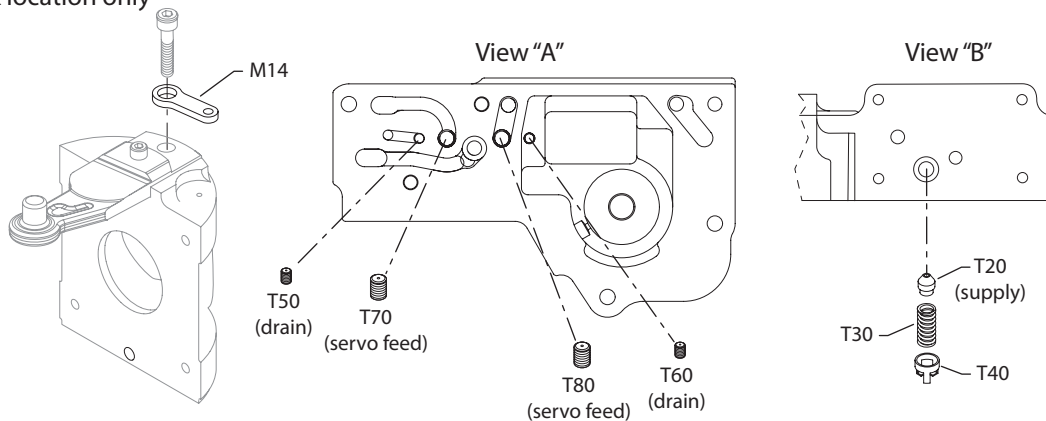
CONTROL

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
LD	M11	98-49		8800923	Control gasket	1
	M14	98-49		340091	Feedback link	1
	M26	98-49		144725 (9004105-0110)	O-ring	1
	M27	98-49		9006300-0044	Retaining ring	1
	M70	98-49		9800916	Control handle	1
	M71	98-49		9009660-3100	Toothlock washer	1
	M72	98-49		040642 (9003513-0800)	Nut	1
	M75	98-49		505022	Control manifold	1
	M76	98-49		326108 (9700886)	Solenoid valve, 12 volt, 2-pole	1
	M77	98-49		8800882	Manifold gasket	1
	M78	98-49		693341 (9007314-0606)	Screw	2
	M83	98-49		009670 (9004201-5000)	O-ring	1
	M90	98-49		692889 (9007314-0611)	Screw	6
	QM10	98-49		8510231	MDC kit, w/neutral start switch, 2-pole 12v solenoid	1
	QM89	98-49		8510027	Neutral start switch kit, high force	1
	QM034	98-49		11099649	Valve seal kit	1
	QM036	98-49		11100383	Nut	1
	QM037	98-49		11100385	Coil, 12 volt	1
	QM210	98-49		11100031	Control seal kit	1
LP	M11	04-50		8800923	Control gasket	1
	M14	04-50		340091	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
	M71	04-50		9009660-3100	Toothlock washer	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		009670 (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



* = included in control seal kit QM210

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

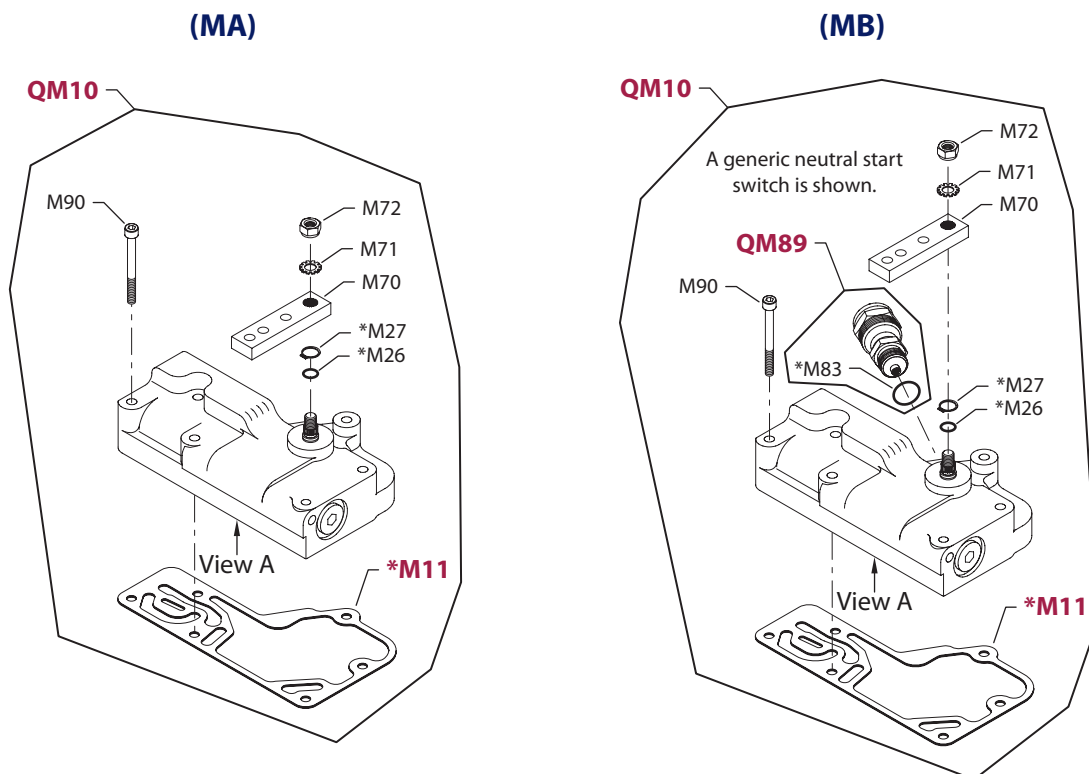
Enlarged **bold** type item
numbers are recommended
part to stock for servicing.

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		340091	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
	M71	12-07		9009660-3100	Toothlock washer	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

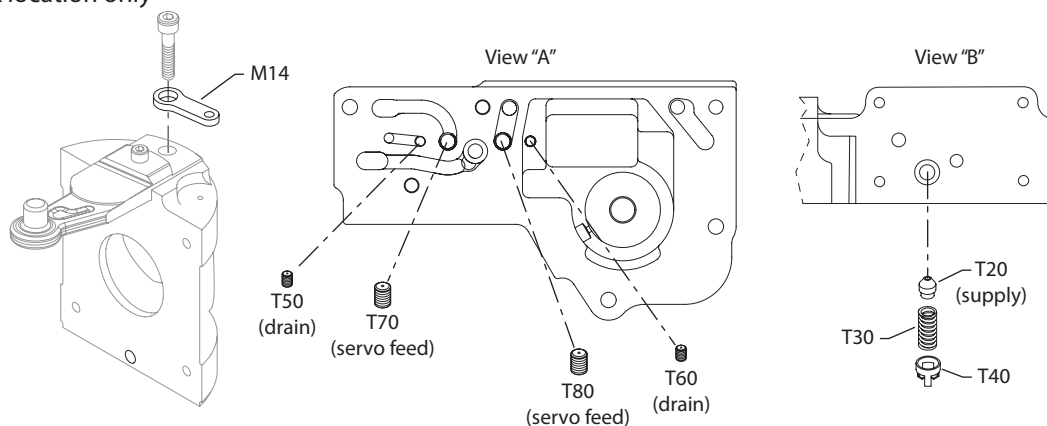
M8	M11	97-24		8800923	Control gasket	1
	M14	97-24		340091	Feedback link	1
	M26	97-24		144725 (9004105-0110)	O-ring	1
	M27	97-24		9006300-0044	Retaining ring	1
	M29	97-24		035592	Screw	4
	M70	97-24		9800916	Control handle	1
	M71	97-24		9009660-3100	Toothlock washer	1
	M72	97-24		040642 (9003513-0800)	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

A)



Generic swashplate used to show link location only

* = included in control seal kit QM210



Possible orifice locations

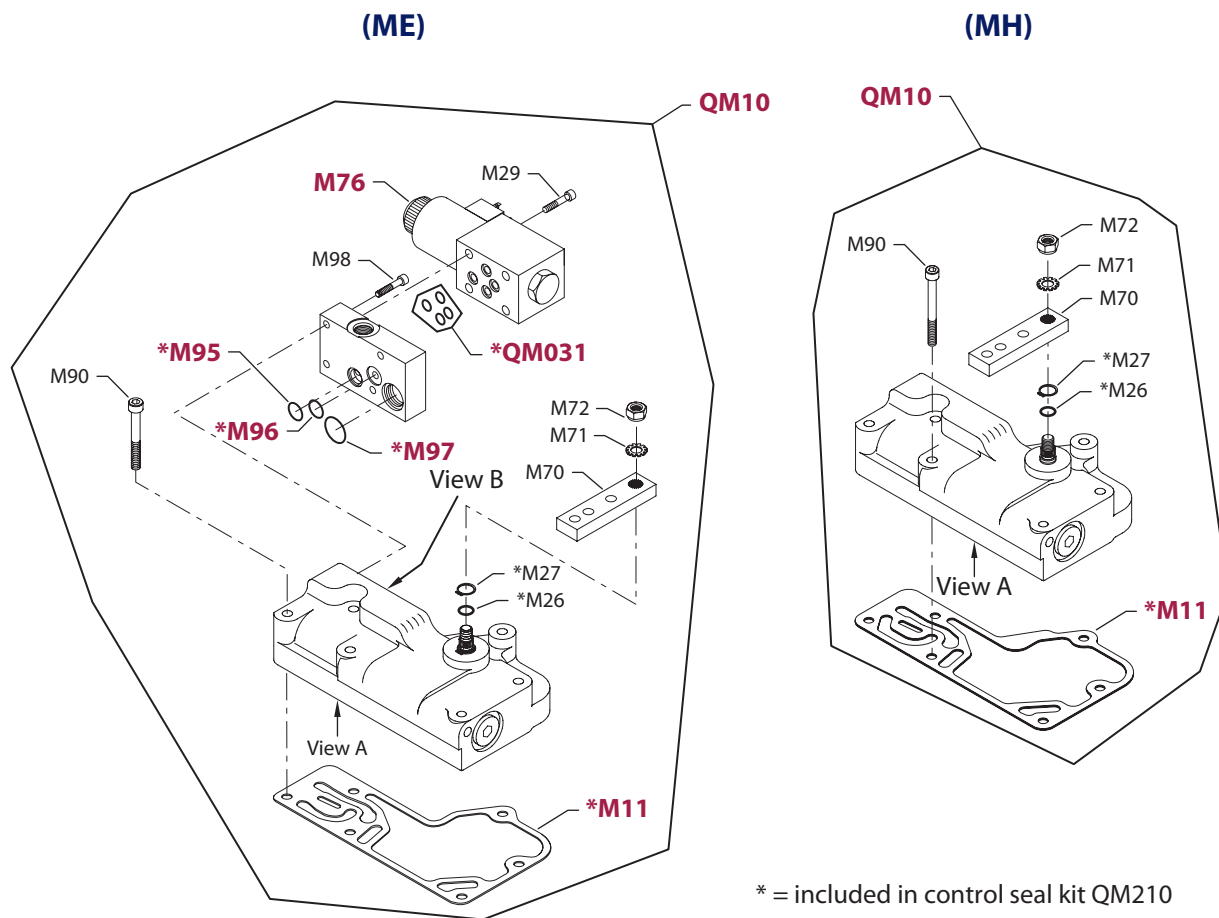
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E101 839E

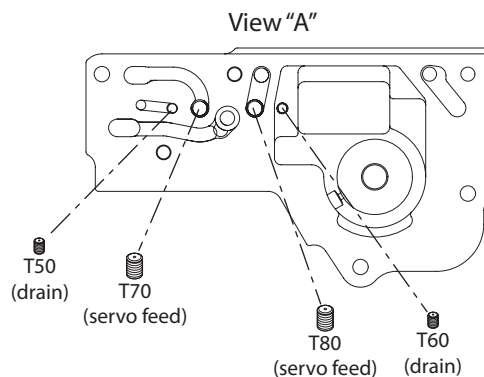
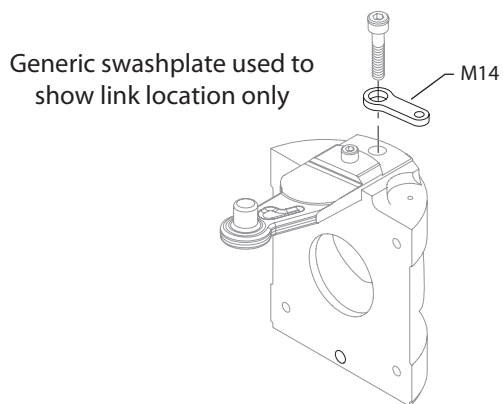
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		340091	Feedback link	1
	M26	97-24		144725 (9004105-0110)	O-ring	1
	M27	97-24		9006300-0044	Retaining ring	1
	M70	92-19		9800916	Control handle	1
	M71	92-19		9009660-3100	Toothlock washer	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		340091	Feedback link	1
	M26	92-19		144725 (9004105-0110)	O-ring	1
	M27	92-19		9006300-0044	Retaining ring	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		009670 (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



* = 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.

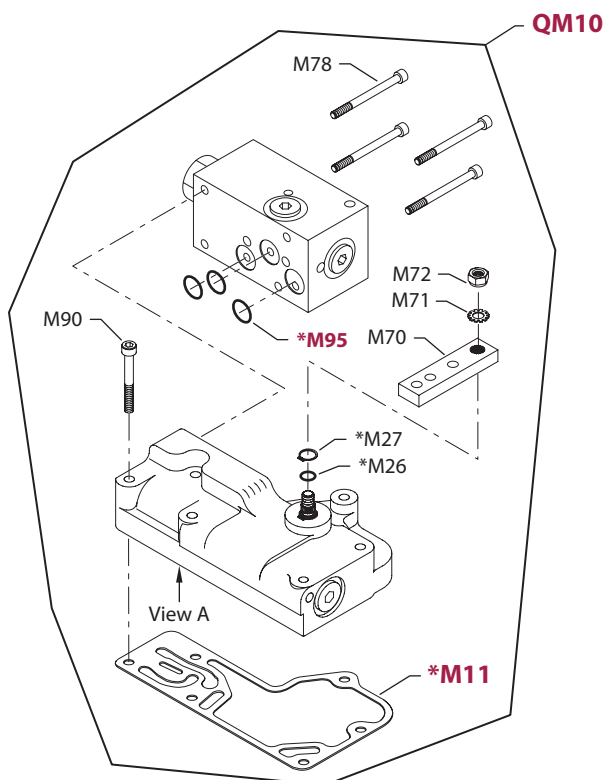
E101 840E

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

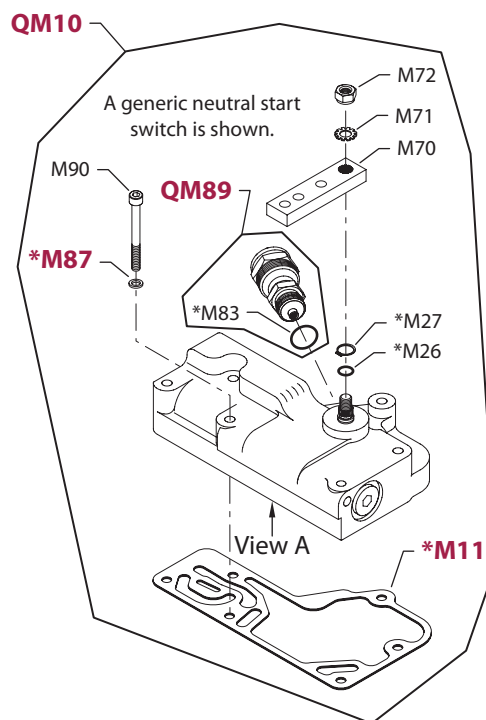
CONTROL

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		340091	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
	M71	96-39		9009660-3100	Toothlock washer	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		056713 (9004105-0140)	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	1
	M14	04-49		340091	Feedback link	1
	M26	04-49		144725 (9004105-0110)	O-ring	1
	M27	04-49		9006300-0044	Retaining ring	1
	M70	04-49		9800916	Control handle	1
	M71	04-49		9009660-3100	Toothlock washer	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

(M0)

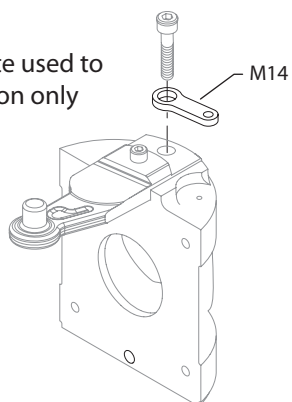


(MS & MV)

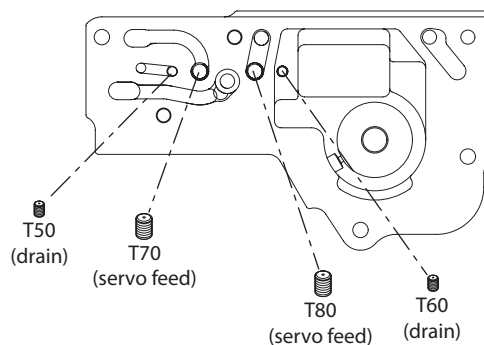


* = included in control seal kit QM210

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.

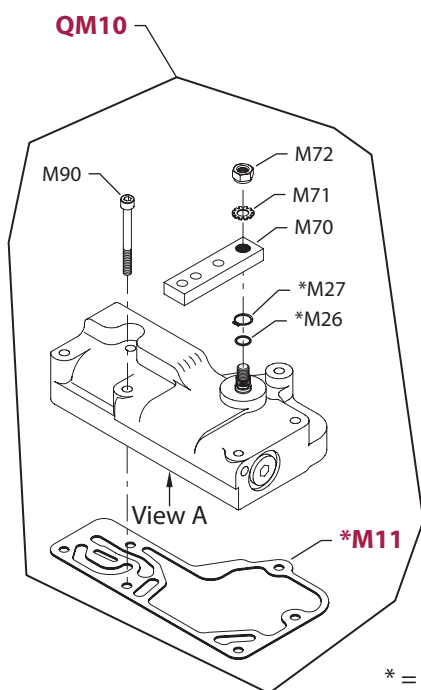
E101 816E

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

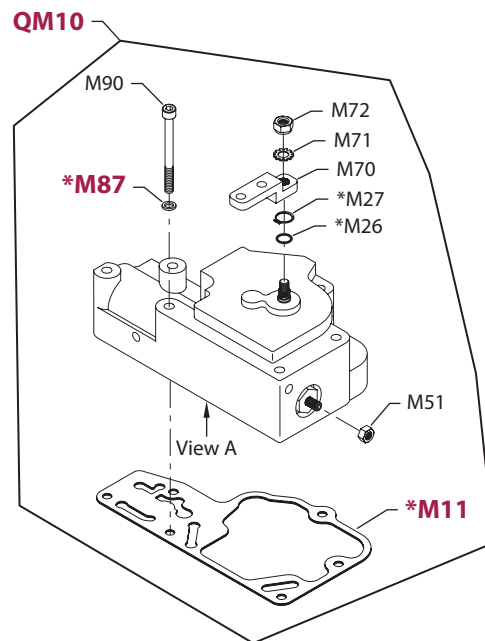
CONTROL

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		340091	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
	M71	96-24		9009660-3100	Toothlock washer	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		340091	Feedback link	1
	M26	00-01		144725 (9004105-0110)	O-ring	1
	M27	00-01		9006300-0044	Retaining ring	1
	M70	00-01		9800916	Control handle	1
	M71	00-01		9009660-3100	Toothlock washer	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		340091	Feedback link	1
	M26	94-24		144725 (9004105-0110)	O-ring	1
	M27	94-24		9006300-0044	Retaining ring	1
	M70	94-24		9800916	Control handle	1
	M71	94-24		9009660-3100	Toothlock washer	1
	M72	94-24		040642 (9003513-0800)	Nut	1
	M83	94-24		009670 (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

(MY)

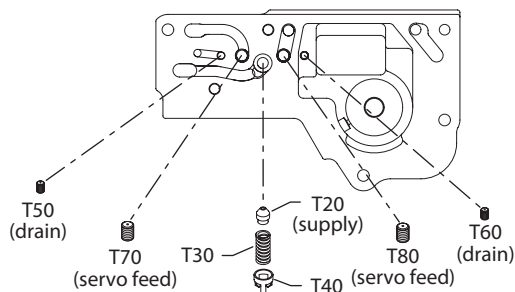


(NA)



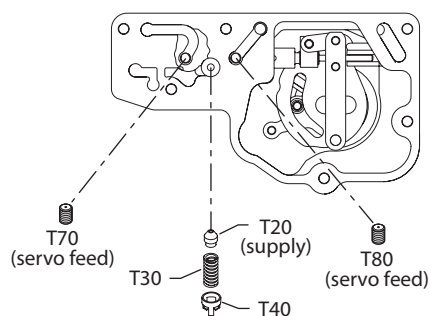
* = included in control seal kit QM210

View "A"

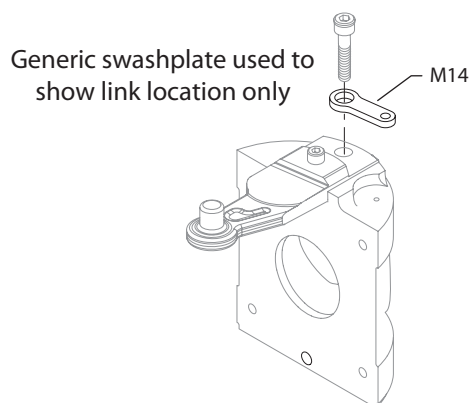


Possible orifice locations

View "A"



Possible orifice locations



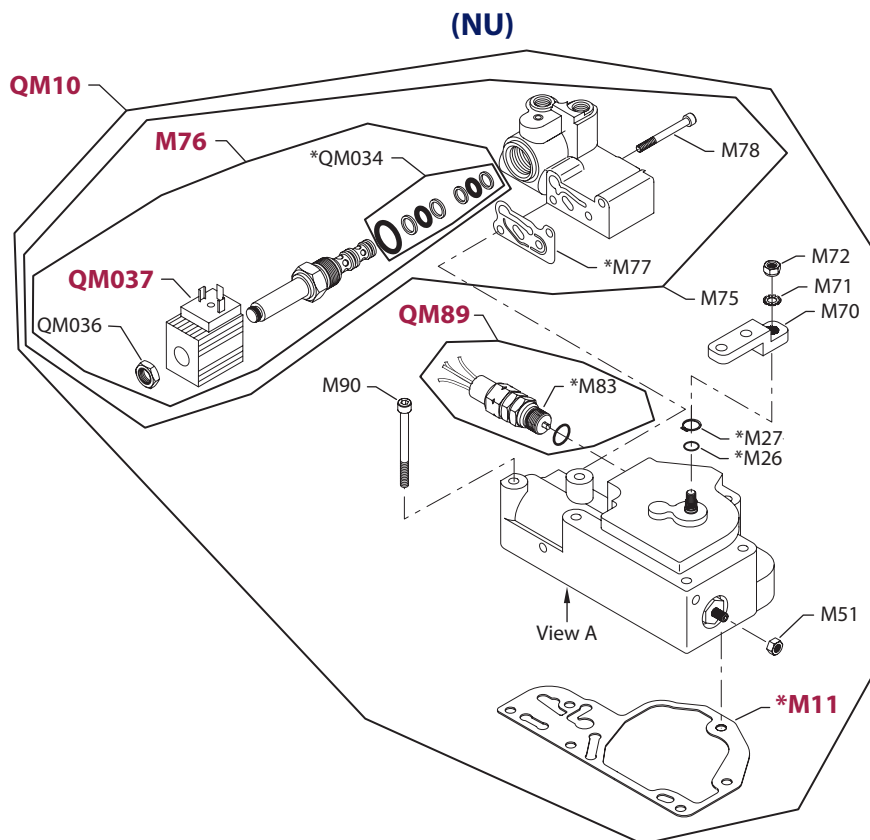
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E100 928E

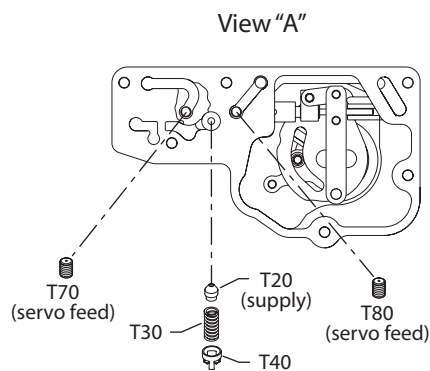
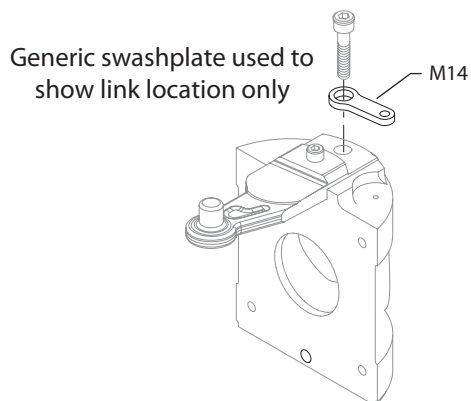
Enlarged **bold** type item numbers are recommended part to stock for servicing.

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		340091	Feedback link	1
	M26	94-24		144725 (9004105-0110)	O-ring	1
	M27	94-24		9006300-0044	Retaining ring	1
	M70	94-24		9800916	Control handle	1
	M71	94-24		9009660-3100	Toothlock washer	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		340091	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
	M71	91-37		9009660-3100	Toothlock washer	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



* = 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.

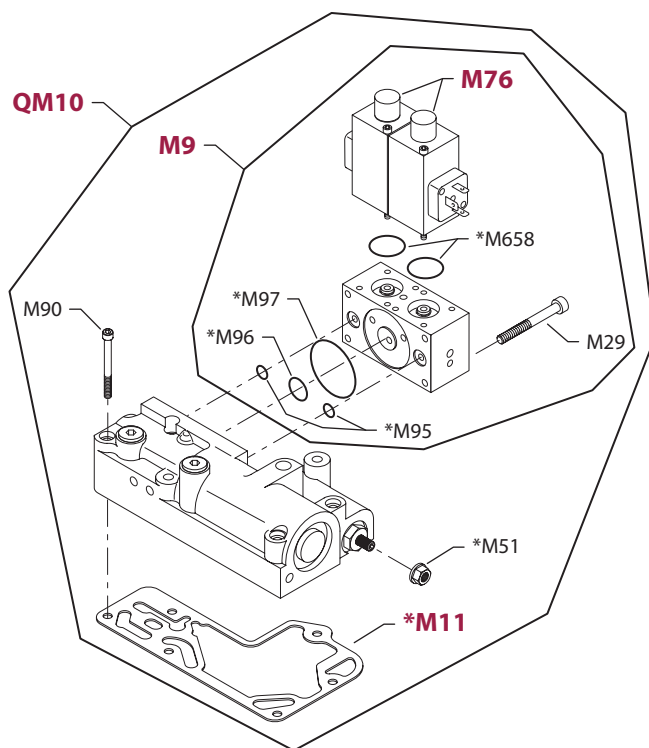
E101 849E

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

CONTROL

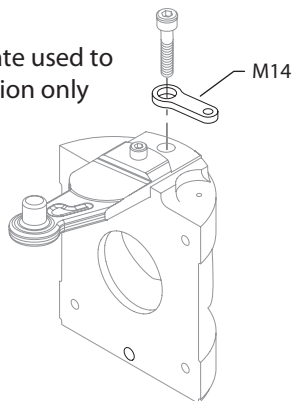
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
NU	M11	96-19		504733	Control gasket	1
	M14	96-19		340091	Feedback link	1
	M26	96-19		144725 (9004105-0110)	O-ring	1
	M27	96-19		9006300-0044	Retaining ring	1
	M51	96-19		345462	Nut	1
	M70	96-19		769075 (8800691)	Control handle	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

(PA & PB)

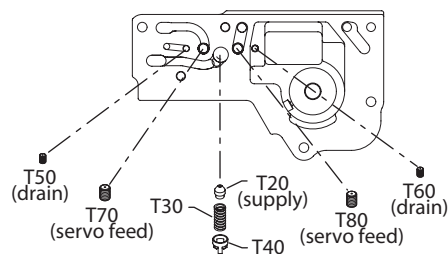


* = included in control seal kit QM210

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.

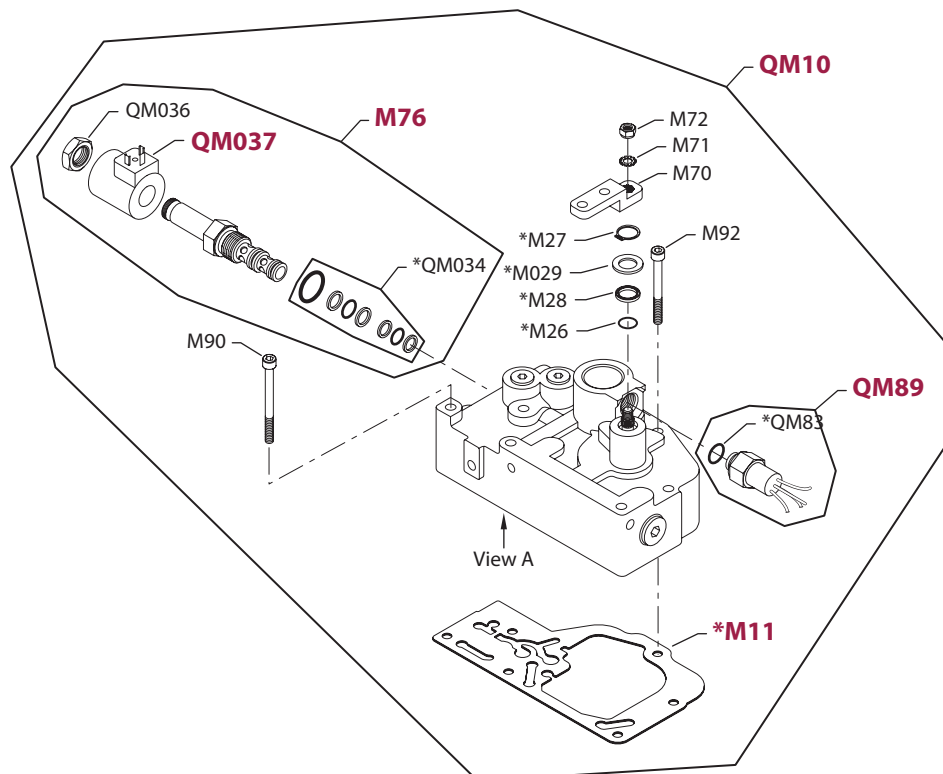
E101 842E

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

CONTROL

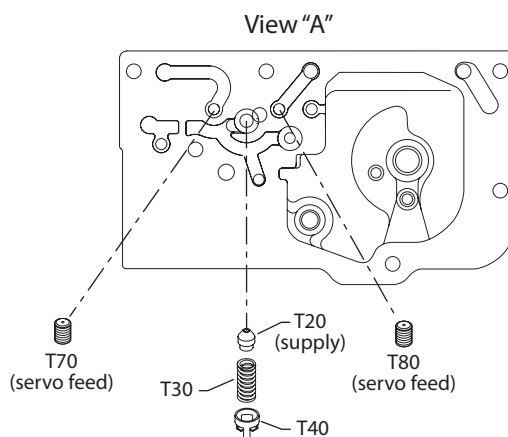
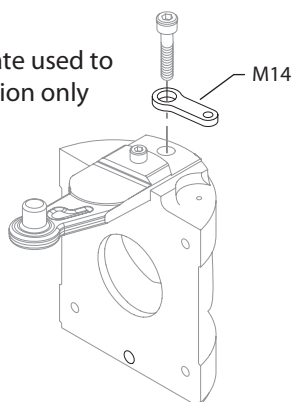
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
PA	M9	98-27		782037	PDC, 12 volt	1
	M11	08-44		8801241	Gasket	1
	M14	98-27		340091	Feedback link	1
	M29	98-27		035592	Screw	4
	M51	98-27		9003509-0008	Seal nut	1
	M76	98-27		11001795	Solenoid, 12 volt	2
	M90	98-27		692889 (9007314-0611)	Screw	6
	M95	98-27		011296 (9004105-0120)	O-ring	2
	M96	98-27		688721 (9004104-0170)	O-ring	1
	M97	98-27		314534 (9004104-0310)	O-ring	1
	M658	98-27		635938 (9004100-0210)	O-ring	2
	QM10	98-27		11086411	Control kit	1
	QM210	98-27		11096251	Control seal kit	1
PB	M9	94-20		782045	PDC, 24 volt	1
	M11	08-44		8801241	Gasket	1
	M14	98-27		340091	Feedback link	1
	M29	98-27		035592	Screw	4
	M51	98-27		9003509-0008	Seal nut	1
	M76	98-27		11001794	Solenoid, 24 volt	2
	M90	98-27		692889 (9007314-0611)	Screw	6
	M95	98-27		011296 (9004105-0120)	O-ring	2
	M96	98-27		688721 (9004104-0170)	O-ring	1
	M97	98-27		314534 (9004104-0310)	O-ring	1
	M658	98-27		635938 (9004100-0210)	O-ring	2
	QM10	98-27		11034094	Control kit	1
	QM210	98-27		11096251	Control seal kit	1

(RS & RU)



* = included in control seal kit QM210

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.

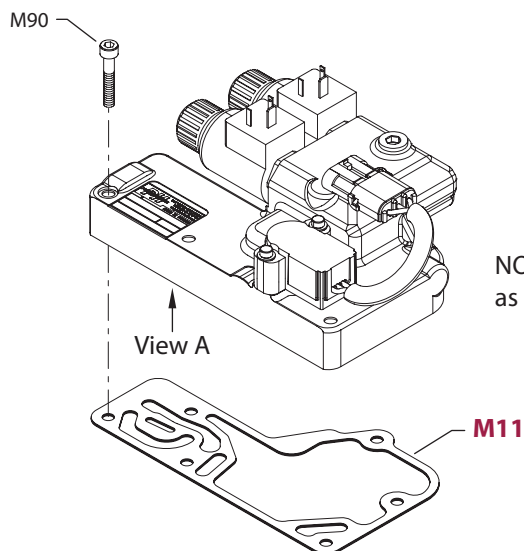
E101 843E

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

CONTROL

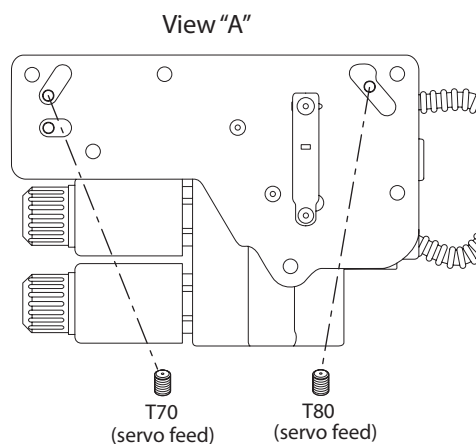
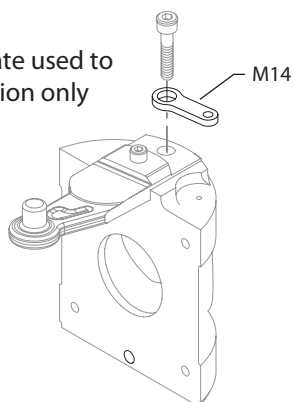
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
RS	M11	01-15		510378	Gasket	1
	M14	01-15		340091	Feedback link	1
	M26	01-15		144725 (9004105-0110)	O-ring	1
	M27	01-15		042507	Retaining ring	1
	M28	01-15		510690	Shaft seal ring	1
	M029	01-15		512047	Washer	1
	M70	01-15		769075	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	2
	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	2
	QM036	01-15		11100383	Nut	2
	QM037	01-15		11100387	Coil, 24 volt, Weather-pack connector	2
	QM210	01-15		11100030	Control seal kit	1
RU	M11	99-26		510378	Gasket	1
	M14	99-26		340091	Feedback link	1
	M26	99-26		144725 (9004105-0110)	O-ring	1
	M27	99-26		042507	Retaining ring	1
	M28	99-26		510690	Shaft seal ring	1
	M029	99-26		512047	Washer	1
	M70	99-26		769075	Control handle	1
	M71	99-26		9009660-3100	Toothlock washer	1
	M72	99-26		040642 (9003513-0800)	Nut	1
	M76	99-26		513017	Solenoid, 12 volt	2
	M90	99-26		354407 (9007314-0611)	Screw	5
	M92	99-26		510382	Screw	1
	QM10	99-26		11086423	Control kit	1
	QM83	99-26		009670 (9004201-5000)	O-ring	1
	QM89	99-26		11099847	Neutral start switch kit	1
	QM034	99-26		11099850	Valve seal kit	2
	QM036	99-26		11100383	Nut	2
	QM037	99-26		11100386	Coil, 12 volt, Weather-pack connector	2
	QM210	99-26		11100030	Control seal kit	1

(SA, SB, SD & SE)



NOTE: This control is not available as a service part

Generic swashplate used to show link location only



Possible orifice locations

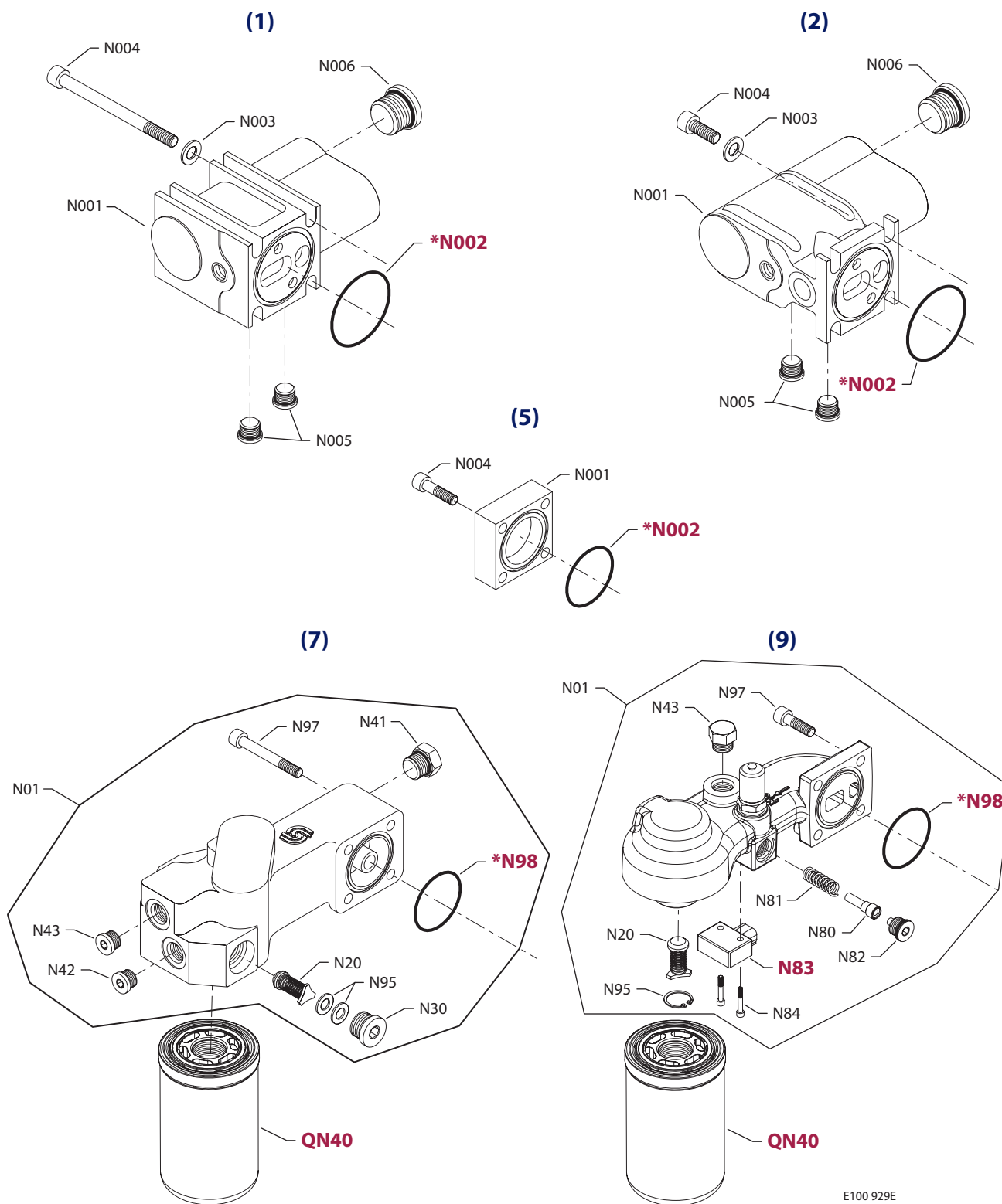
NOTE: All orifices present in the original control must be transferred to the replacement control. If replacement control contains pre-installed orifices, remove and discard them before transferring existing orifices to new control.

E101 844E

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

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		340091	Feedback link	1
	M90	08-32		694356 (9007314-0608)	Screw	6
SB	M11	08-32		8800923	Gasket	1
	M14	08-32		340091	Feedback link	1
	M90	08-32		694356 (9007314-0608)	Screw	6
SD	M11	10-34		8800923	Gasket	1
	M14	10-34		340091	Feedback link	1
	M90	10-34		694356 (9007314-0608)	Screw	6
SE	M11	10-34		8800923	Gasket	1
	M14	10-34		340091	Feedback link	1
	M90	10-34		694356 (9007314-0608)	Screw	6



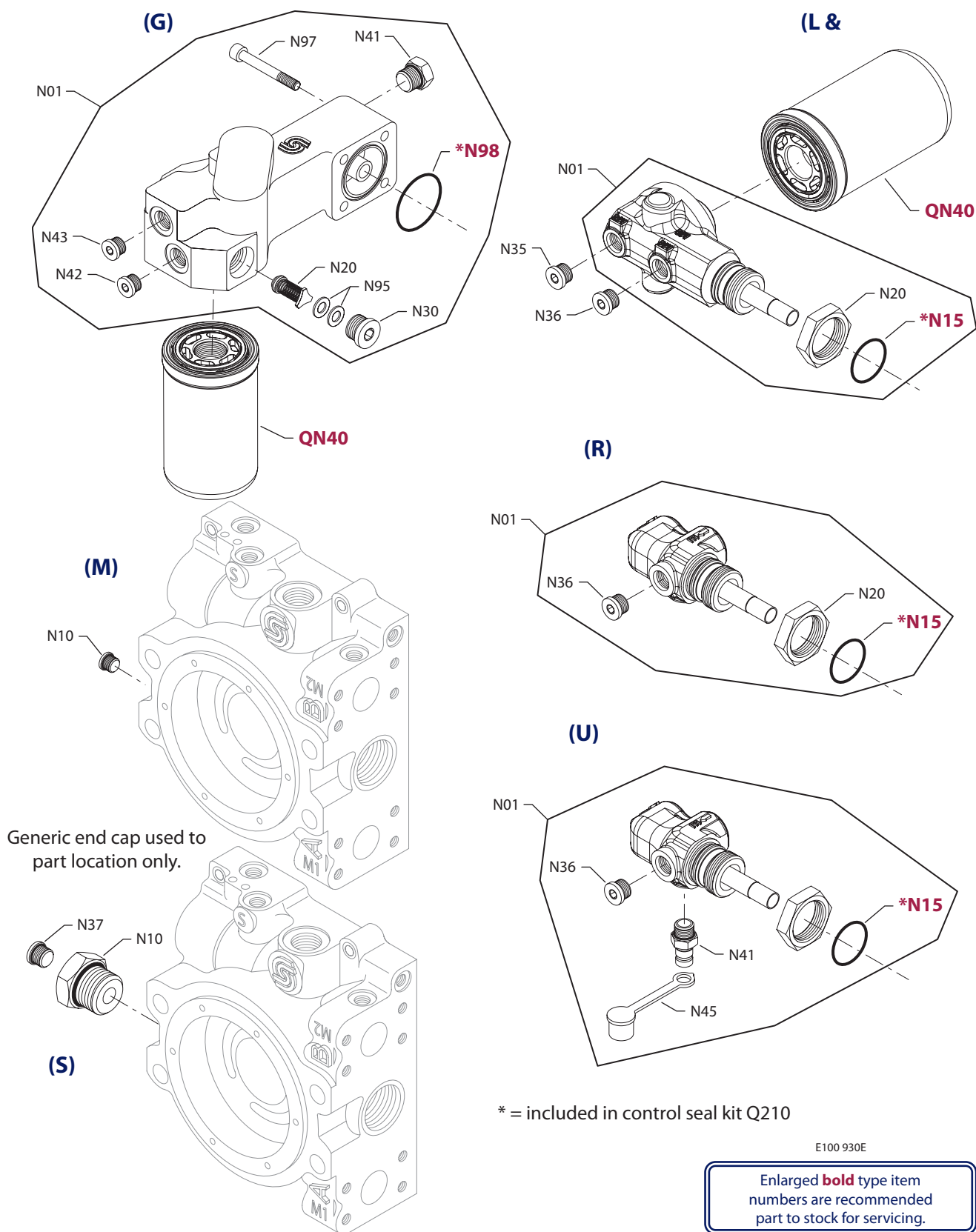
* = included in control seal kit Q210

E100 929E

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

FILTRATION

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	N001	94-43		501096	Manifold	1
	N002	94-43		9004104-0320	O-ring	1
	N003	94-43		002311 (9009610-3459)	Washer	4
	N004	94-43		505442	Screw	4
	N005	94-43		140644	Plug assembly	2
	N006	94-43		320002 (9005110-9200)	Plug assembly	1
2	N001	94-43		505414	Manifold	1
	N002	94-43		9004104-0320	O-ring	1
	N003	94-43		002311 (9009610-3459)	Washer	4
	N004	94-43		713594	Screw	4
	N005	94-43		140644	Plug assembly	2
	N006	94-43		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		

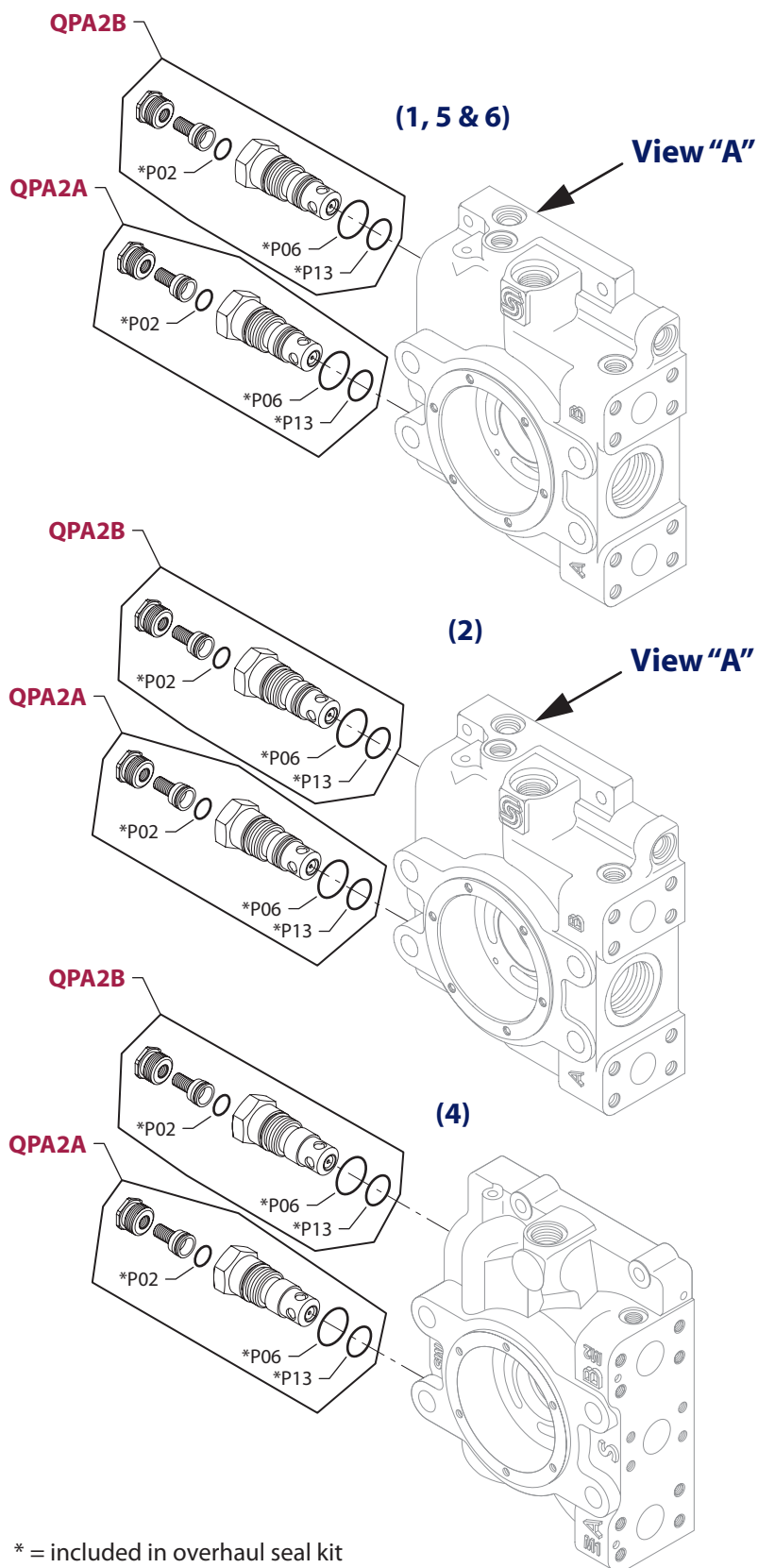


E100 930E

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

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	N01	89-41		11060346	Filter manifold assembly (SB-1994-036)	1
	N15	89-41		001172 (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
	QN40	02-03		11004919	Filter assembly, long	1
M	N10	94-16		140644	Plug assembly	1
P	N01	89-41		11060346	Filter manifold assembly (SB-1994-036)	1
	N15	89-41		001172 (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
	QN40	02-03		11004917	Filter assembly, short	1
R	N01	89-41		11060429	Filter manifold assembly, remote	1
	N15	89-41		001172 (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
S	N10	89-41		11088086	Reducer assembly	1
	N37	89-41		140644	Plug assembly	1
U	N01	89-41		11067124	Filter manifold assembly, remote	1
	N15	89-41		001172 (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		



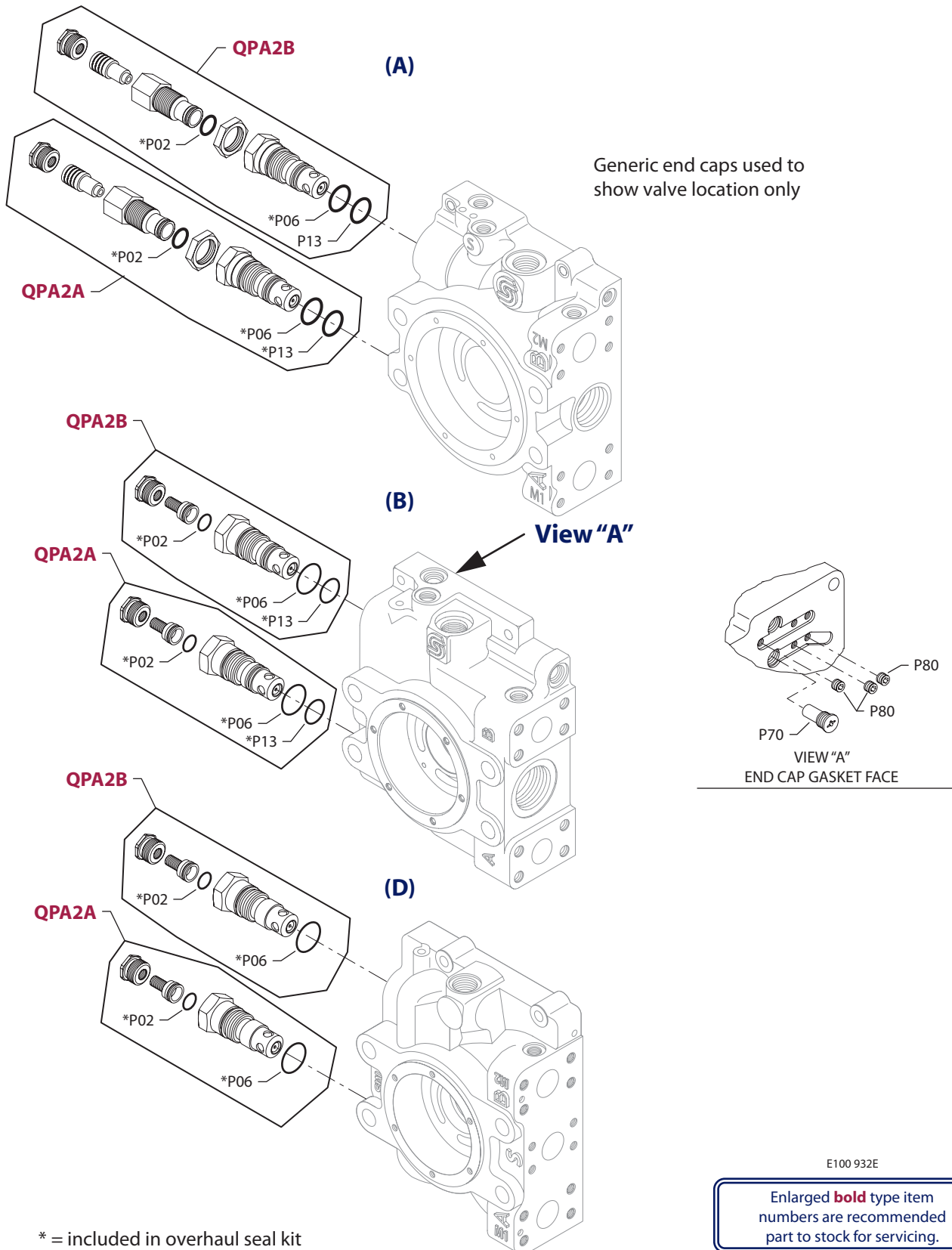
Generic end caps used to
show valve location only

E100 931E

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

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	2
	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	2
	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	2
	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	2
	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

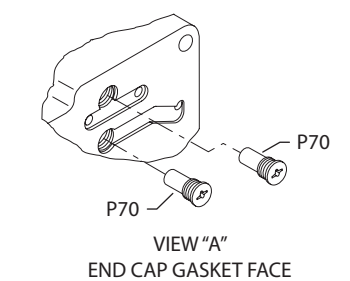
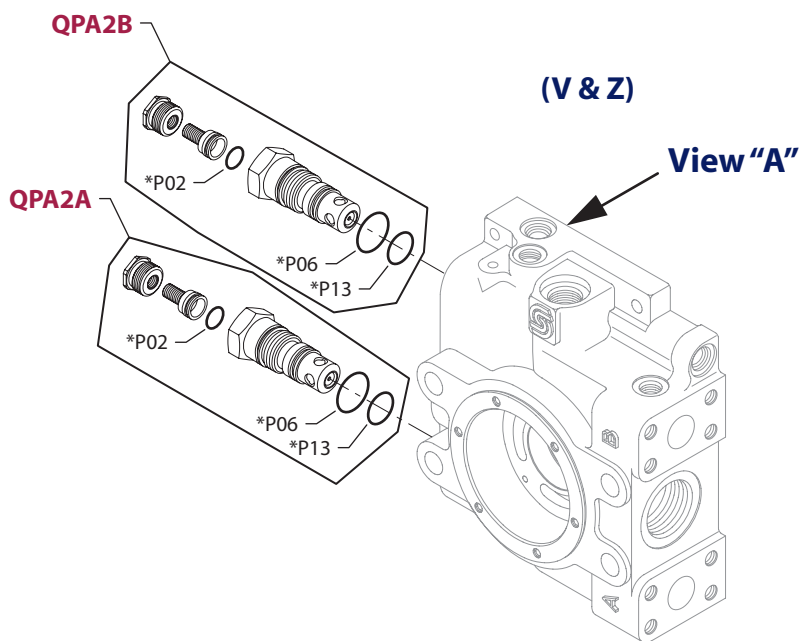
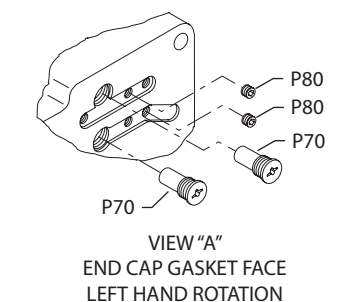
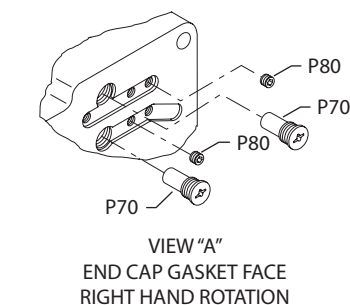
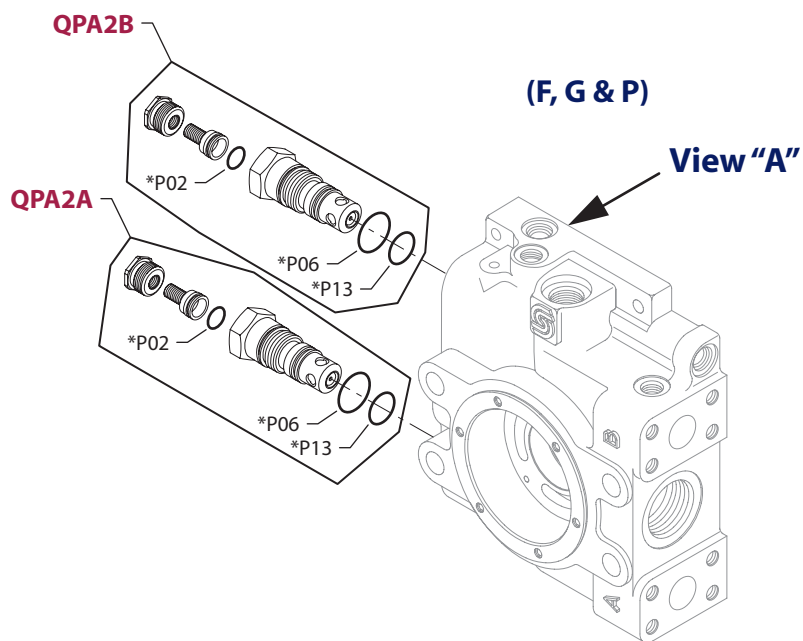


E100 932E

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

HIGH PRESSURE REGULATION

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
A	P2	89-41		775080	O-ring	2
	P6	89-41		360784 (9004105-0290)	O-ring	2
	P13	89-41		775155	O-ring	2
	QPA2A	89-41		521488	Multi-function valve kit (SB-1991-014)	1
	QPA2B	89-41		521488	Multi-function valve kit (SB-1991-014)	1
B	P2	99-09		775080	O-ring	2
	P6	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	P2	97-40		775080	O-ring	2
	P6	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



Generic end cap used to
show valve location only

* = included in overhaul seal kit

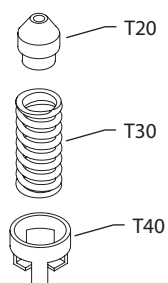
E101 841E

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

HIGH PRESSURE REGULATION

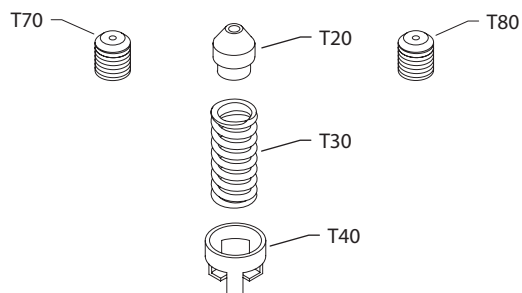
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
F	P2	94-39		775080	O-ring	2
	P6	94-39		360784 (9004105-0290)	O-ring	2
	P13	94-39		775155	O-ring	2
	P70	94-39		8800188	Check valve assembly	2
	P80	94-39		9005475-0004	Special pipe plug	2
	QPA2A	94-39		8510023-2	Multi-function valve kit (SB-1991-014)	1
	QPA2B	94-39		8510023-2	Multi-function valve kit (SB-1991-014)	1
G	P2	99-06		775080	O-ring	2
	P6	99-06		360784 (9004105-0290)	O-ring	2
	P13	99-06		775155	O-ring	2
	P70	99-06		8800188	Check valve assembly	2
	P80	99-06		9005475-0004	Special pipe plug	2
	QPA2A	99-06		8510239	Multi-function valve kit (SB-1991-014)	1
	QPA2B	99-06		8510239	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

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



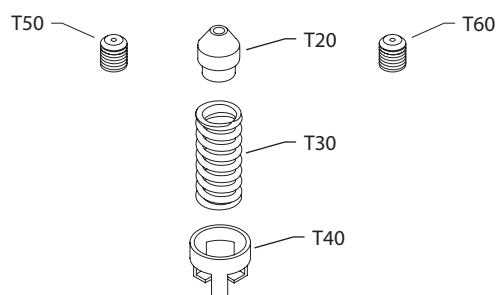
See control drawing
for orifice location

(21)



See control drawing
for orifice location

(23)

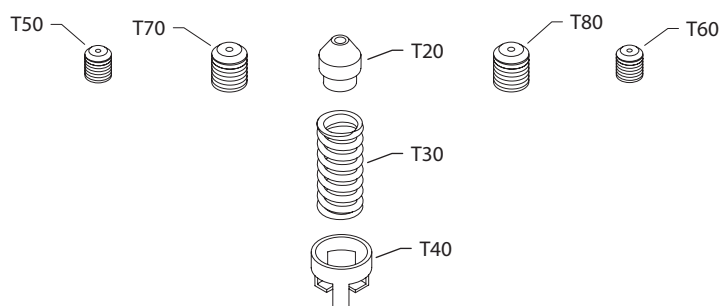


See control drawing
for orifice location

ORIFICE

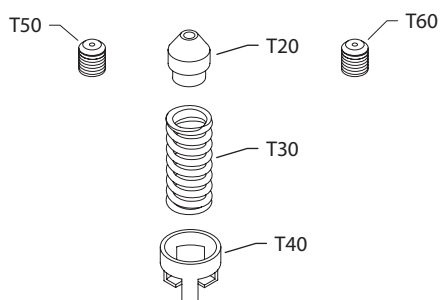
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
00				None		
01	T20	89-41		8801136	Orificed check valve, .018"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
02	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	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

(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

ORIFICE

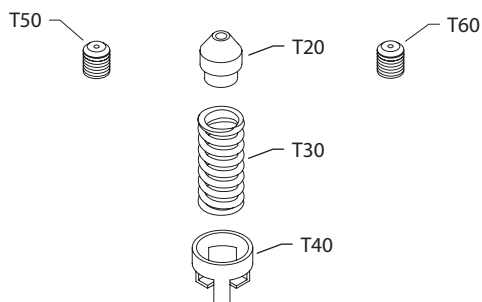
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
25	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		606657	Orifice plug, 0.5mm, M5 x 6	1
	T60	89-41		606657	Orifice plug, 0.5mm, M5 x 6	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	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
27	T20	89-41		11061970	Orificed check valve, 1.02mm	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
28	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		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	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
30	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		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	1
	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

(34)



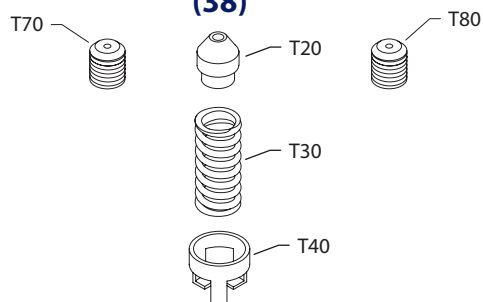
See control drawing
for orifice location

(37, 44, 45, 46 & 49)



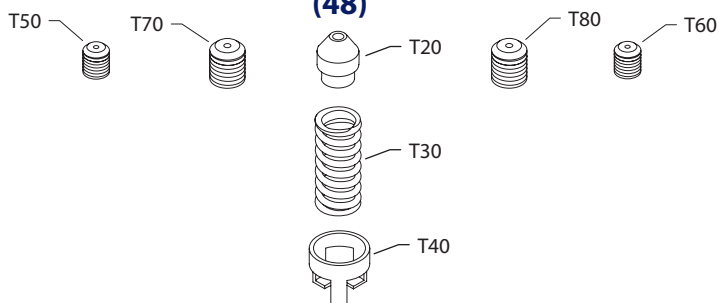
See control drawing
for orifice location

(38)



See control drawing
for orifice location

(48)

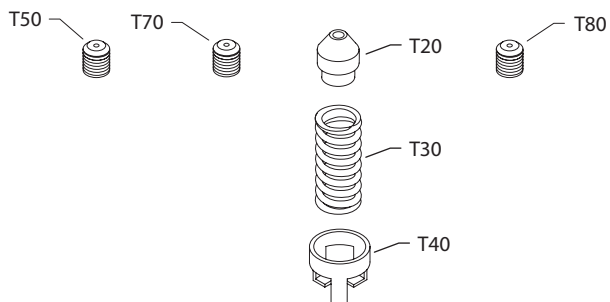


See control drawing
for orifice location

ORIFICE

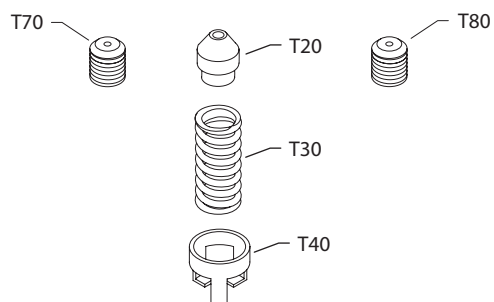
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
34	T70	89-41		755793	Orifice plug, 1.0mm, M8 x 8	1
	T80	89-41		755793	Orifice plug, 1.0mm, M8 x 8	1
37	T20	89-41		11061981	Orificed check valve, 1.37mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	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

(50)



See control drawing
for orifice location

(54)



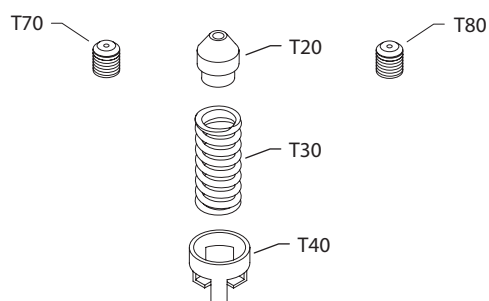
See control drawing
for orifice location

(64)



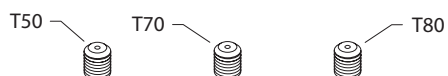
See control drawing
for orifice location

(76, 99, A5 & A8)



See control drawing
for orifice location

(82)



See control drawing
for orifice location

(84 & A4)

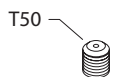


See control drawing
for orifice location

ORIFICE

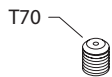
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
50	T20	89-41		8801139	Orificed check valve, .026"	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T50	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
	T70	89-41		517571	Orifice plug, 0.9mm, M6 x 6	1
	T80	89-41		517571	Orifice plug, 0.9mm, M6 x 6	1
54	T20	89-41		11061970	Orificed check valve, 1.02mm	1
	T30	89-41		679506 (8700007)	Spring	1
	T40	89-41		8801303	Spring retainer	1
	T70	89-41		755793	Orifice plug, 1.0mm, M8 x 8	1
	T80	89-41		755793	Orifice plug, 1.0mm, M8 x 8	1
64	T50	89-41		617159	Orifice plug, 1.8mm, M5 x 6	1
	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	1
	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	1
	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	1
	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

(B1, B7, B8, B9 & G1)

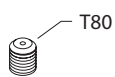


See control drawing
for orifice location

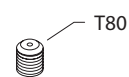
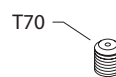
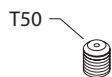
(B2)



See control drawing
for orifice location

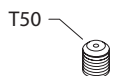


(BA)



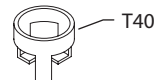
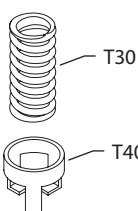
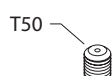
See control drawing
for orifice location

(C4)



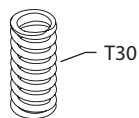
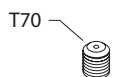
See control drawing
for orifice location

(C5, C6 & C7)



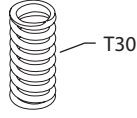
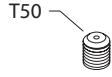
See control drawing
for orifice location

(D1)



See control drawing
for orifice location

(G4)

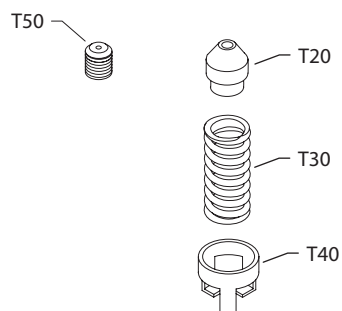


See control drawing
for orifice location

ORIFICE

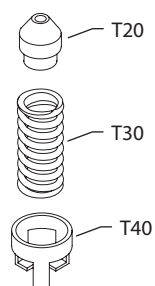
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
B1	T50	89-41		507042	Orifice plug, 1.5mm, M6 x 8	1
B2	T70	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
	T80	89-41		310771	Orifice plug, 1.2mm, M6 x 6	1
B7	T50	89-41		578542	Orifice plug, 0.8mm, M6 x 8	1
B8	T50	89-41		508014	Orifice 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
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, GB, GD, GF & GJ)



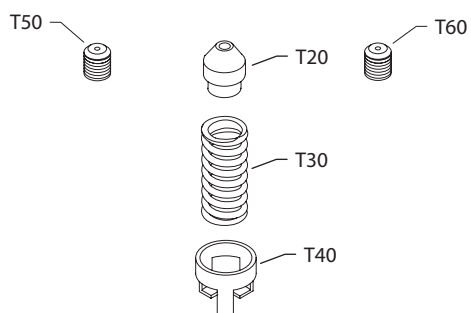
See control drawing
for orifice location

(K1)



See control drawing
for orifice location

(K2 & Z3)



See control drawing
for orifice location

(P1)



See control drawing
for orifice location

ORIFICE

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
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 6	1
	T80	11-40		508014	Orifice plug, 1.0mm, M6 x 6	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

OVERHAUL SEAL KIT

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
		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	2
	E50	89-41		517379	O-ring	1
	E60	89-41		517230	Screw (SB-2002-014)	6
	F11	89-41		628396	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		916940	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



Series 90 130 cc Axial Piston Pump
Parts Manual
Notes



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.

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)

Obsolete Charge Pump Parts			Unit Size	Chg. pump displacement	Auxiliary pad	Rotation	Replacement Kit
Gear Set	Shaft	Cover					
8000169	8000174	8800513	055	11 cc	No	LH or RH	8510028
		8800514			Yes	LH	8510029
		8800514			Yes	RH	8510030
8000170	8000174	8800513	055	14 cc	No	LH or RH	8510031
		8800514			Yes	LH	8510032
		8800514			Yes	RH	8510033
8000171	8000174	8800513	055	17 cc	No	LH or RH	8510034
		8800514			Yes	LH	8510035
		8800514			Yes	RH	8510036
8100313	337956	8800513	075	14 cc	No	LH or RH	8510037
		8800514			Yes	LH	8510038
		8800514			Yes	RH	8510039
8100314	337956	8800513	075	17 cc	No	LH or RH	8510040
		8800514			Yes	LH	8510041
		8800514			Yes	RH	8510042
8100315	337956	8800513	075	20 cc	No	LH or RH	8510043
		8800514			Yes	LH	8510044
		8800514			Yes	RH	8510045
8200158	337956	8800513	100	17 cc	No	LH or RH	8510046
		8800514			Yes	LH	8510047
		8800514			Yes	RH	8510048
8200159	337956	8800513	100	20 cc	No	LH or RH	8510049
		8800514			Yes	LH	8510050
		8800514			Yes	RH	8510051
8200160	337956	8800513	100	26 cc	No	LH or RH	8510052
		8800514			Yes	LH	8510053
		8800514			Yes	RH	8510054
714444	303636	347518	130	20 cc	No	LH or RH	8510064
		347526			Yes	LH	8510065
		347526			Yes	RH	8510066
714451	303636	347518	130	26 cc	No	LH or RH	8510067
		347526			Yes	LH	8510068
		347526			Yes	RH	8510069
714469	303636	347518	130	34 cc	No	LH or RH	8510070
		347526			Yes	LH	8510071
		347526			Yes	RH	8510072

PRODUCTS AFFECTED	Series 90130 cc variable pumps
SUBJECT	Multi-function valve installation torque
DESCRIPTION	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). The series 90 service manual will be changed to show the lower installation torque at its next revision.
MODELS AFFECTED	All 97-2xxx pumps
SERIAL NUMBERS	All
PART NUMBERS AFFECTED	All
PARTS DISPOSITION	■ Not applicable

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.

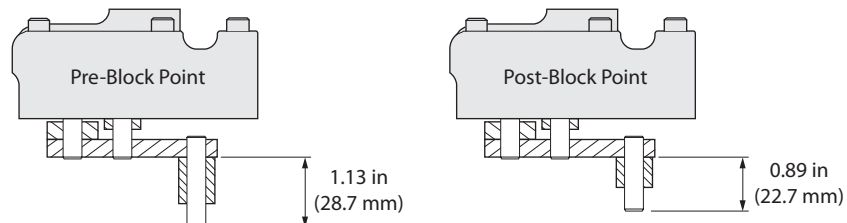
FRAME SIZE: 130 CC

Item	Description	Pre "blockpoint" Part Number	New Part Number (92-19 & Later)
Common Parts Group, 130 cc			
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
End Cap Group, 130 cc			
G308	End Cap gasket	709816(I)(O)	730895(I)
G908	Screw	376624	713719
G958	Screw	527218	9007314-0811
Special Hardware Features Group, 130 cc			
B83	Plug-Speed Pick-up	n/a	9005110-5600
Control Group, 130 cc			
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

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

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

PRODUCTS AFFECTED

Series 90 130 cc variable pumps

SUBJECT

Charge pump design change

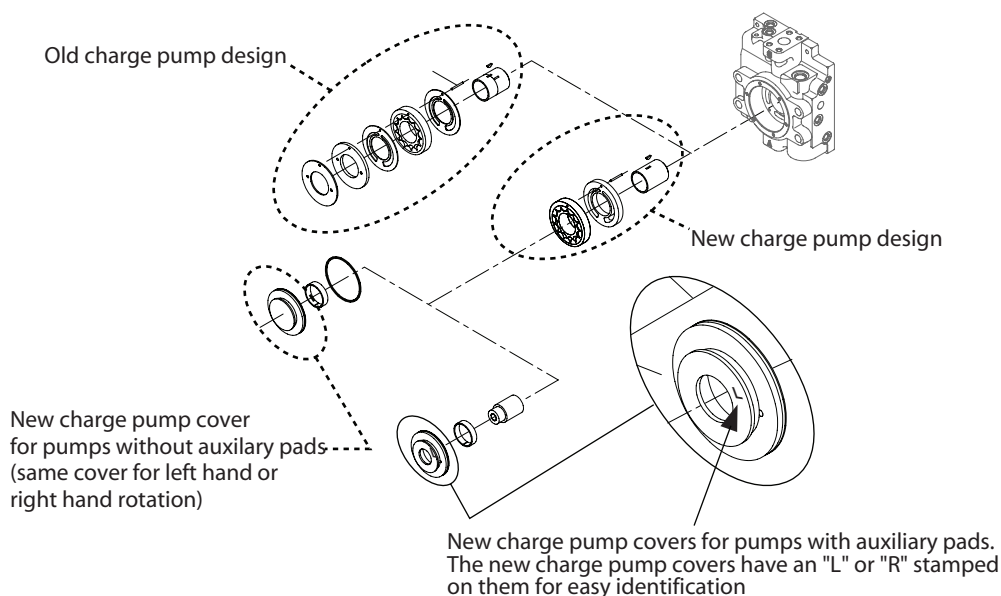
DESCRIPTION

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.



MODELS AFFECTED

All 97-2xxx and 972xxxx variable pumps

SERIAL NUMBERS

Change occurred at serial number N-93-34-xxxxx

PART NUMBERS AFFECTED

Obsolete 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

PRODUCTS AFFECTED

Series 90 55 thru 130 cc variable pumps

SUBJECT

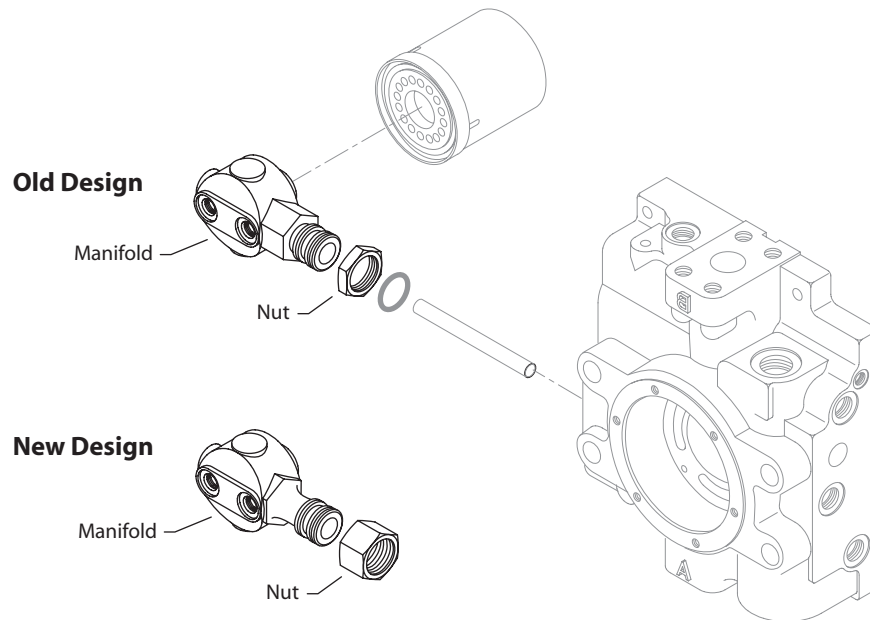
Integral filtration manifold

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

Description	Part number (prior to 95-18)	Part number (95-18 & beyond)
Filter manifold	8800200	8800896
Bulkhead nut	9002863-1600	5000222

PARTS DISPOSITION

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

PRODUCTS AFFECTED

Series 90 variable pumps - all frame sizes

SUBJECT

Manual displacement control (MDC) with DC electric solenoid override

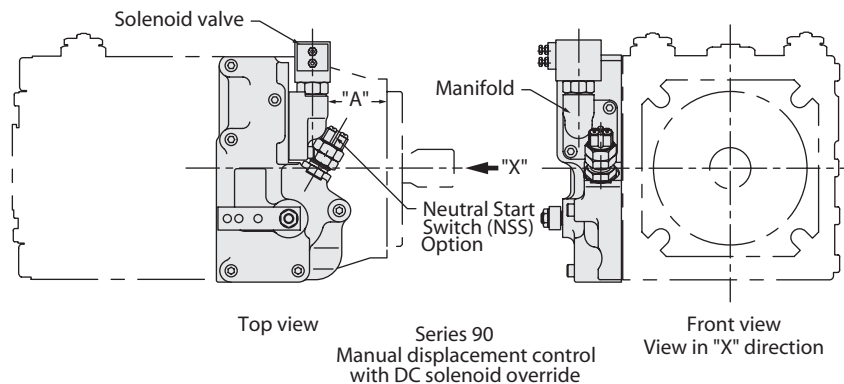
DESCRIPTION

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	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)

PRODUCTS AFFECTED

Series 90 130 cc variable pumps

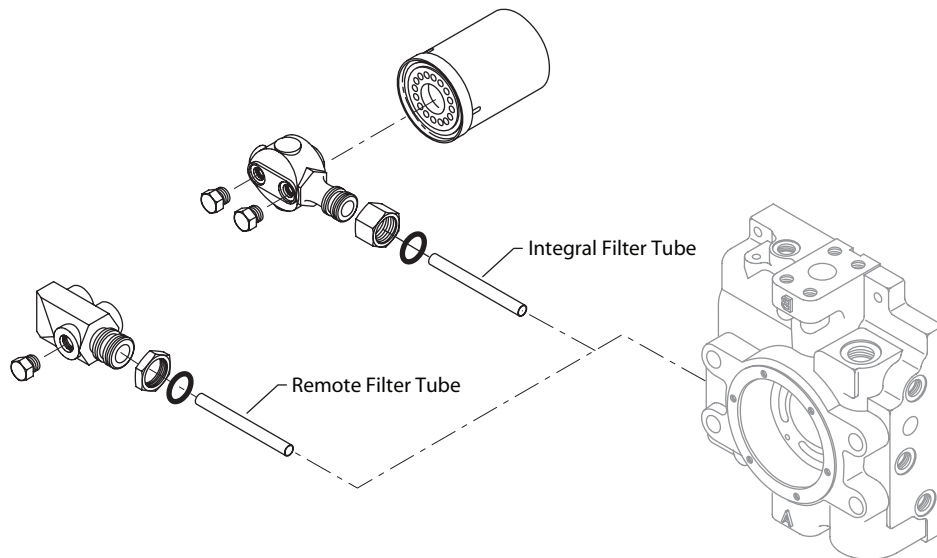
SUBJECT

Filter tube - pressure and remote filtration

DESCRIPTION

The filtration tube that is used in the manifold for remote or integral pressure filtration may be too short in length. The filtration tube should be measured for proper length and replaced if necessary at first repair for units built prior to N-95-41. The correct length of the integral filtration tube is $143.76 \pm .25\text{mm}$ [$5.66 \pm .01$ inches] and $101.09 \pm .25\text{mm}$ [$3.98 \pm .01$ inches] for the remote filtration tube.

The old filtration tubes are obsolete and no longer available as a service part.



MODELS AFFECTED

All series 90 130 cc variable pumps with integral or remote pressure filtration.

SERIAL NUMBERS

Change occurred at serial number N-95-41-xxxxx

PART NUMBERS AFFECTED

Filter option	Old part number	New part number
Remote	355206	8800938
Integral	355214	8800939

PARTS DISPOSITION

■ Interchangeable

PRODUCTS AFFECTED

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

SUBJECT

Side cover design change

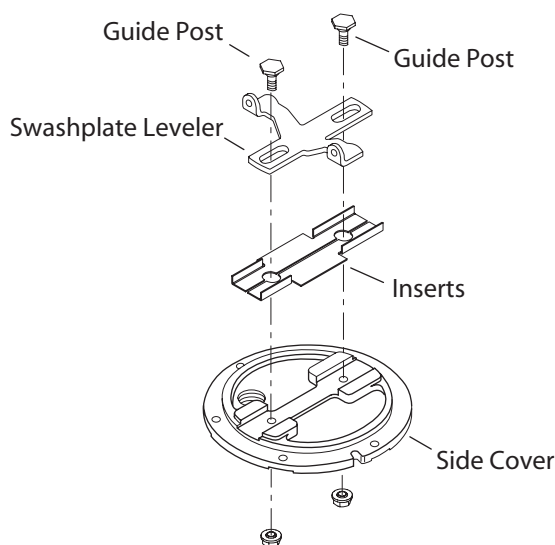
DESCRIPTION

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	506289
180 cc	503205	746404	506914	506368	506290
250 cc	503205	746404	506914	506368	506290

PARTS DISPOSITION

■ Interchangeable - piece parts are not interchangeable

PRODUCTS AFFECTED

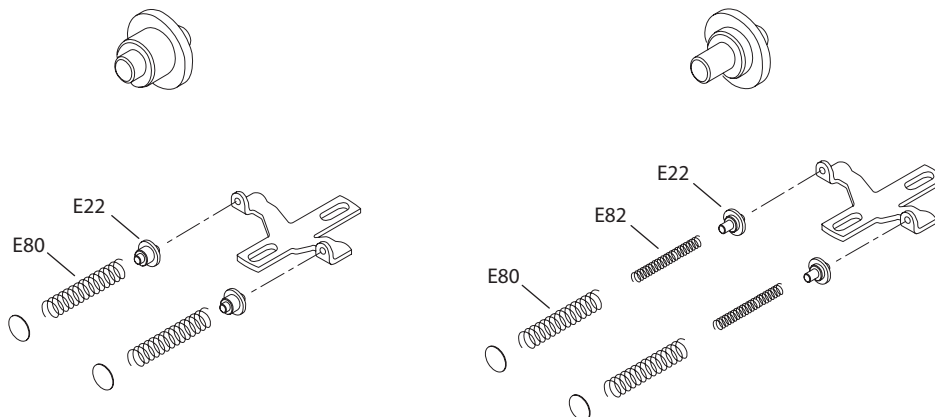
Series 90 130 cc variable pumps

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.



Old Design

New Design

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

PART NUMBERS AFFECTED

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

PRODUCTS AFFECTED

Series 90 130 cc variable pumps

SUBJECT

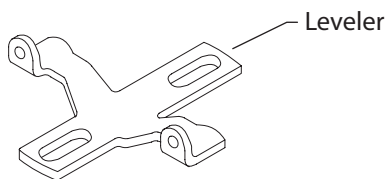
Swashplate leveler design change

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

PART NUMBERS AFFECTED

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

PARTS DISPOSITION

■ Interchangeable - piece parts are not interchangeable

PRODUCTS AFFECTED

Series 90 variable pumps

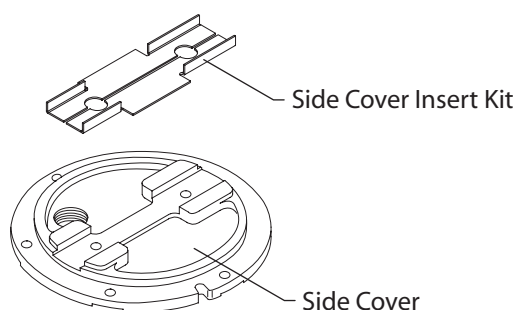
SUBJECT

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

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-xxxxx through A-99-49-xxxxx. 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

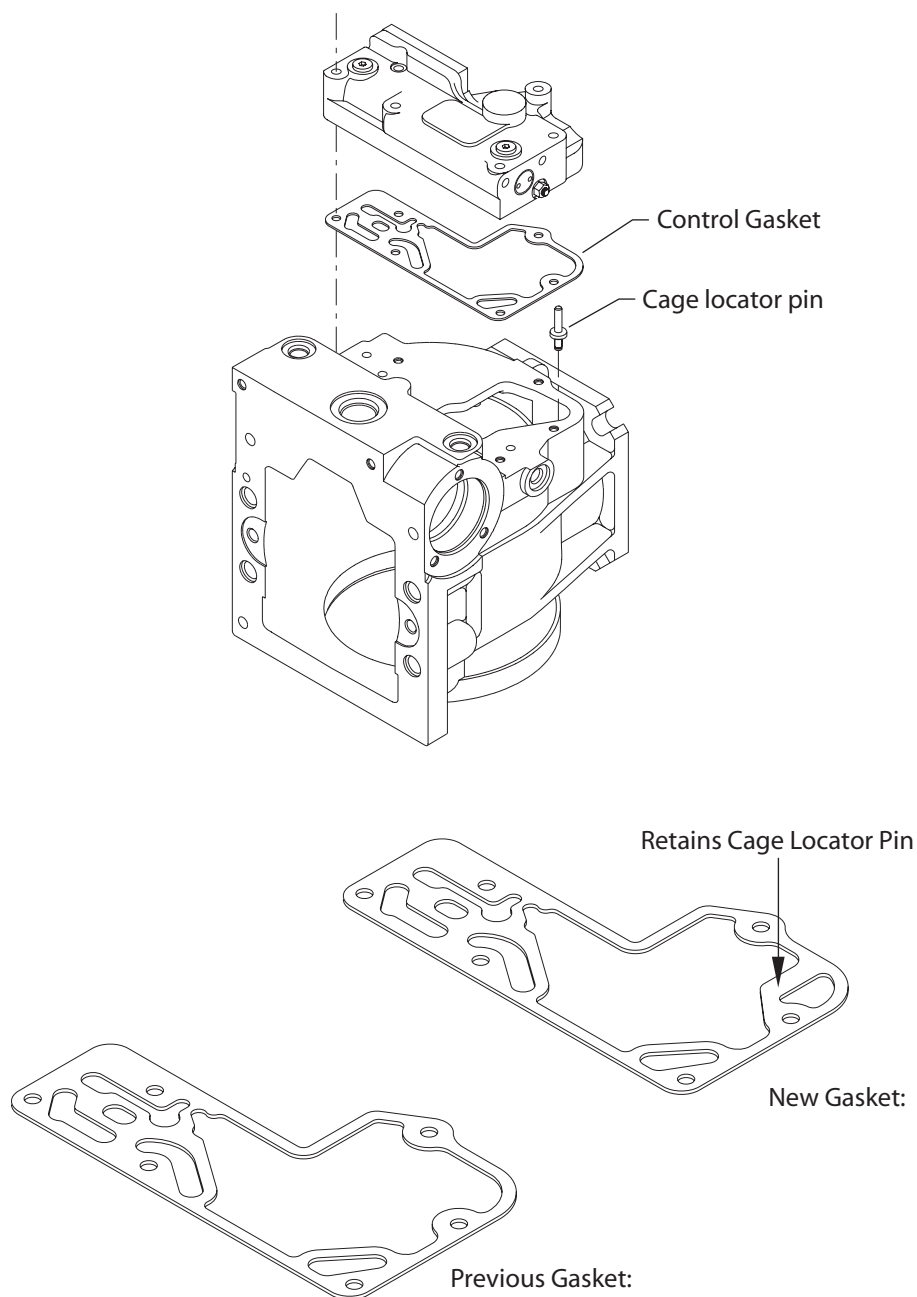
Sauer-Danfoss Ames 75cc pump production: A-99-50-xxxxx.
Sauer-Danfoss Ames 100cc pump production: A-00-25-xxxxx.
Sauer-Danfoss Neumunster production: N-00-01-xxxxx.

**PART NUMBERS
AFFECTED**

Previous gasket	New gasket
511608	8801241

PARTS DISPOSITION

■ Interchangeable



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



Old
"Flat Point"
Displacement Limiter Screw



New
"Dog Nose"
Displacement Limiter Screw

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

PRODUCTS AFFECTED

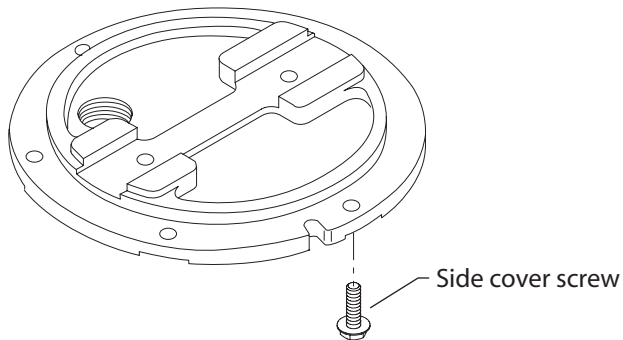
Series 90 42, 130, 180, and 250cc variable pumps

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

PRODUCTS AFFECTED

Series 90 130 cc variable pumps

SUBJECT

Redesign block point change

DESCRIPTION

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.

MODELS AFFECTED

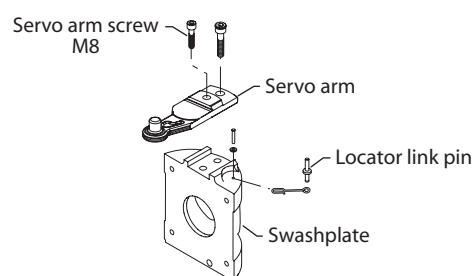
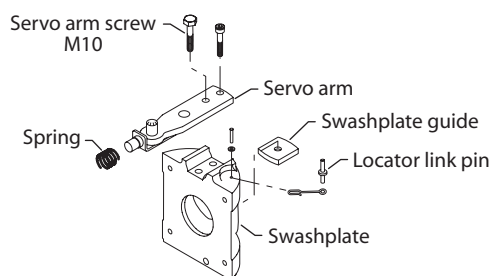
All series 90 130 cc variable pumps

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	536649	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	83020S30	11035671



PARTS DISPOSITION

■ Interchangeable - piece parts are not interchangeable

PRODUCTS AFFECTED

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

SUBJECT

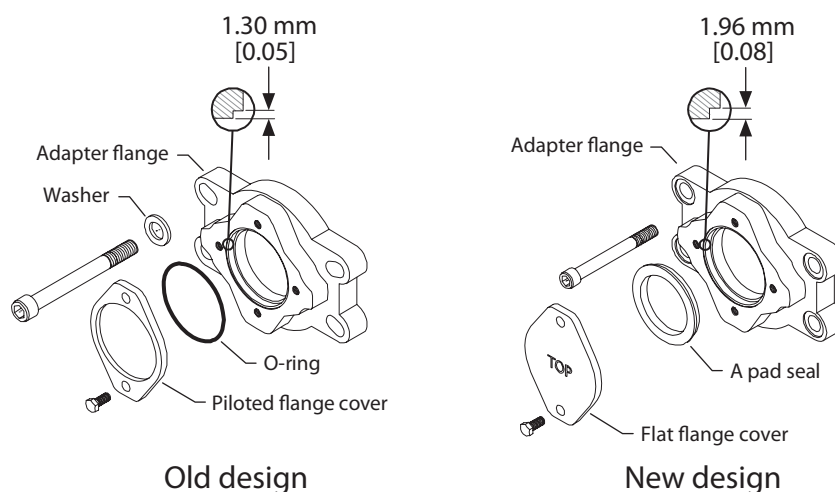
SAE A auxiliary mounting flange, O-ring seal

DESCRIPTION

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.

PRODUCTS AFFECTED

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

SUBJECT

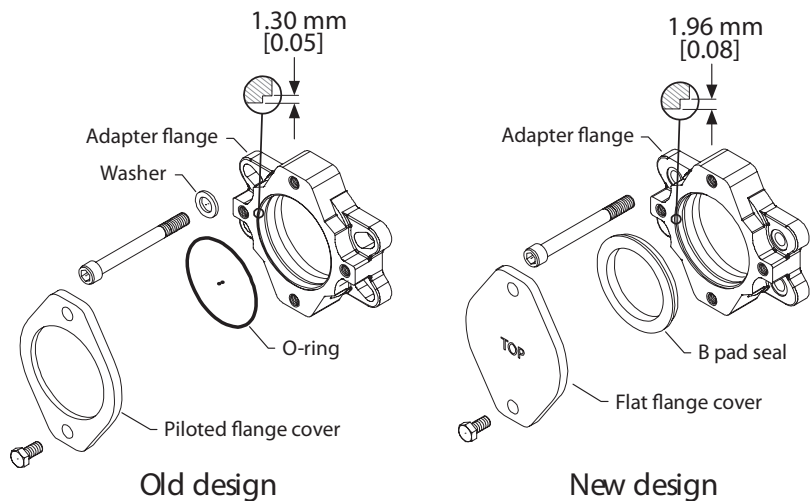
SAE B auxiliary mounting flange, O-ring seal

DESCRIPTION

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 [0.103"] 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.

PRODUCTS AFFECTED

Series 90 130, 180 and 250cc variable pumps

SUBJECT

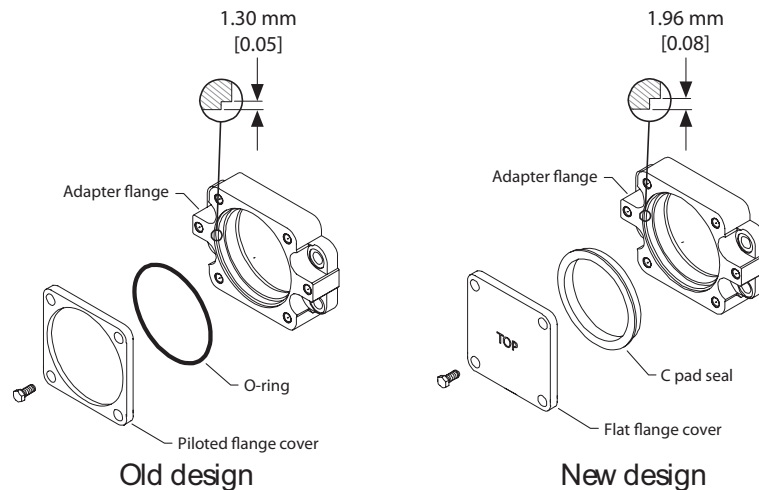
SAE C auxiliary mounting flange, O-ring seal

DESCRIPTION

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.



Series 90 130 cc Axial Piston Pump Parts Manual

Notes





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