

Hydrostatic Pump Repair

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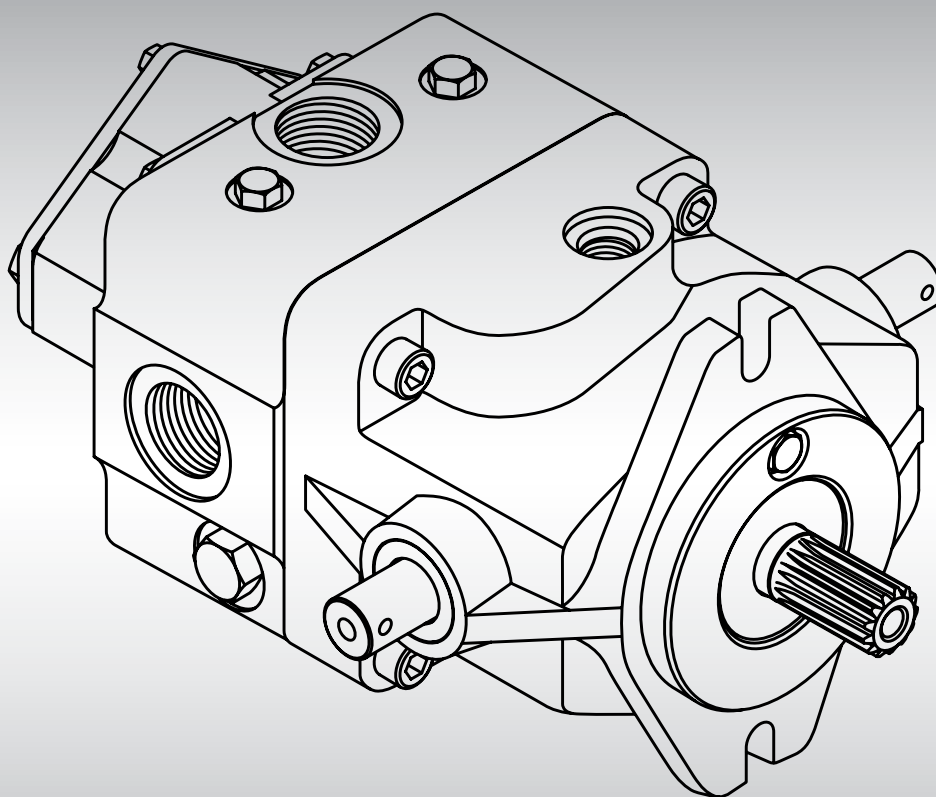
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Service Parts Manual

Axial Piston Pumps and Motors Series 18







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General information

Service parts identification

The following information and procedure is used to identify the item number, manufacture date, part number, and part name of the parts included in the Series 18, variable displacement pumps, tandem pumps, variable displacement motors, and fixed displacement motors.

The parts listed include all parts which may be used when performing either "Minor Repairs", "Major Repairs" or "Conversions" on Series 18 pumps and motors.

Nameplate

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

Model Number

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

Serial Number

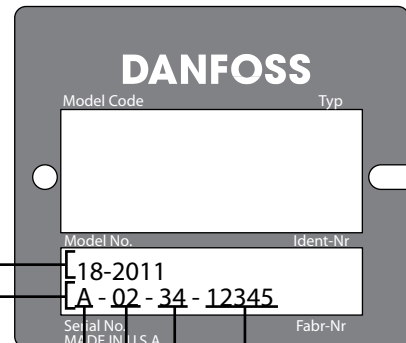
The Danfoss serial number is used to identify the manufacture date and the unit sequence in the build. The serial number is also used to identify the units warranty time period.

The letter code indicates the location of original manufacture (assembly). "A" indicates the unit was originally assembled in Ames, Iowa, USA.

The first number (2 digits) indicates the year of manufacture. ("02" would indicate the unit was manufactured in 2002).

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

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





General information

Date code

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

EXAMPLE: The service part desired is Item 31

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
4	31	88-04		3103424	Shaft	1
	31	78-01	88-03	3102328	Shaft	1

Service bulletins

All units using this option code with a date code of 78-01 and up to and including 88-03, must use part number 3102328. All units with a date code of 88-04 and newer, must use part number 3103424.

A Service Bulletin Number (SB-____ - ____) may follow the part name of the part you desire. Read that Service Bulletin before ordering that part. The information contained in these Service Bulletins, as of the print date, are at the end of this manual. Service Bulletins contain more detailed information such as interchangeability, what additional parts are involved, and so forth. We suggest that you add additional Service Bulletins to this manual as you receive them.

Procedure to identify a part

General

A part number that has another number following it in parentheses makes this a world wide manual. The first number is sold in Germany. The number in parentheses is sold in the United States. (Example: 087510 (9510303); customers would order 9510303 if ordering the part in the United States.)

Example of a Part Identification

The nameplate on a series 18 pump has a model number of 18-2011. Do this to determine the part number of the drive shaft used on this pump.

1. Referring to the shaft group of the model option code sheet, the shaft option for this pump is identified by the option code 1.
2. Referring to the service parts list, find the shaft group.
3. Find the option code that relates to this unit, which is 1.
4. The shaft is item 31.
5. The shaft part number is 051599 (3102211).

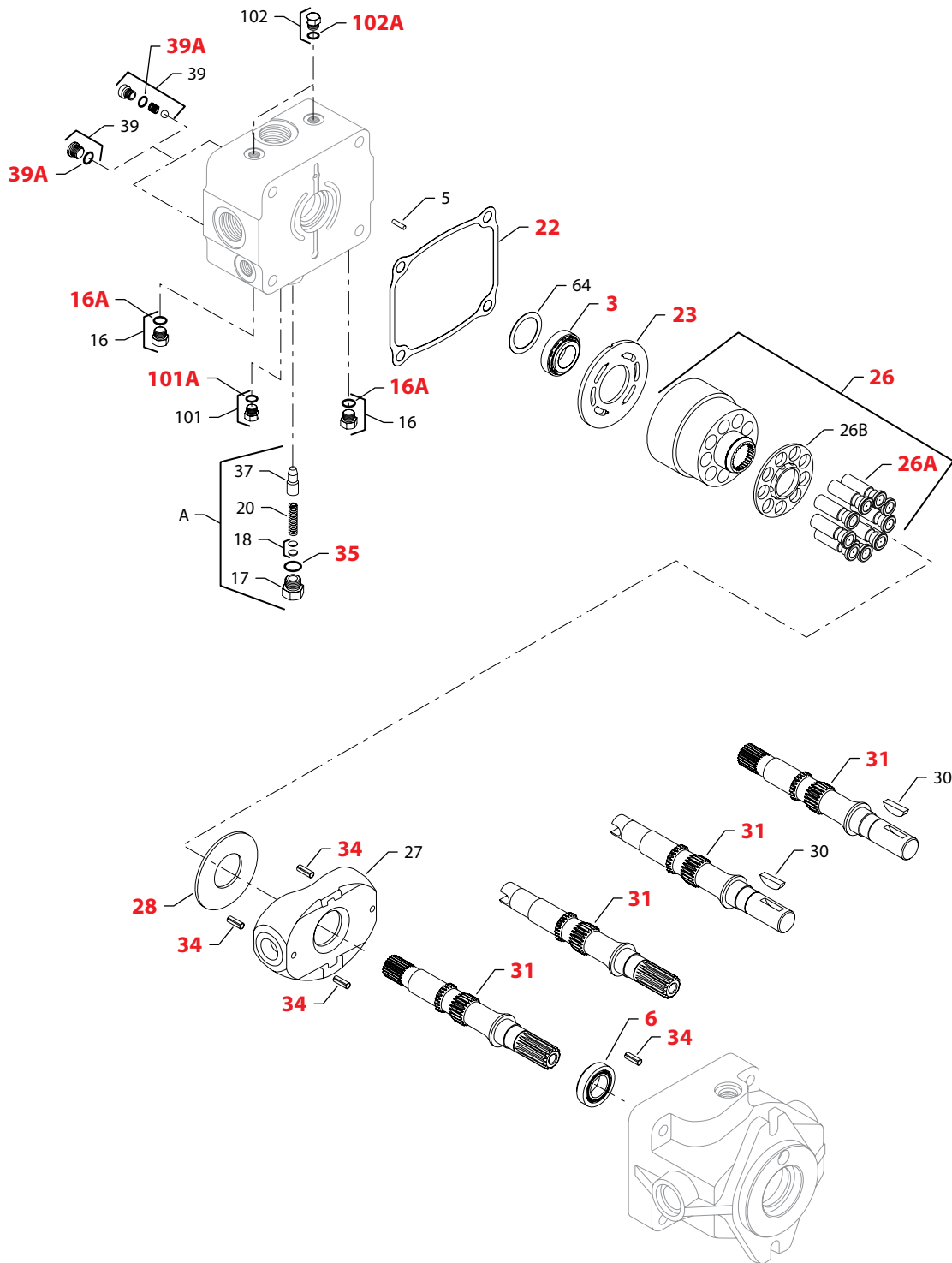

Variable pump model
option code

Mode number	Option groups								
	Shaft	Charge pump	Shaft seal	Charge pump shaft	End cap	Pump housing	Trunnion shaft	Displace- ment	Relief/ check valve
18-2010	1	1	2	1	1	1	1	1	1
18-2011	1	1	2	1	1	1	1	1	1
18-2014	2	4	2	1	2	1	1	1	1
18-2015	2	1	2	1	1	1	1	1	1
18-2020	3	2	2	3	3	1	1	1	2
18-2027	4	1	2	1	1	1	1	1	1
18-2028	3	2	2	3	3	1	1	1	1
18-2029	4	1	2	1	1	1	1	1	1
18-2030	1	1	2	2	1	1	1	1	1
18-2031	1	1	2	2	1	1	1	1	1
18-2032	5	2	2	3	3	1	1	1	1
18-2033	2	1	2	2	1	1	1	1	1
18-2034	3	3	2	3	3	1	1	1	1
18-2035	5	2	2	3	3	1	1	1	1
18-2036	3	2	2	3	3	1	1	1	1
18-2037	6	3	2	3	3	1	1	1	1
18-2038	2	1	2	2	1	1	1	1	1
18-2039	6	2	2	3	3	1	1	1	1
18-2044	6	3	2	3	3	1	1	1	3
18-2045	1	1	2	1	1	1	1	1	4
18-2046	7	5	2	3	4	2	1	1	2
18-2048	1	1	2	1	1	1	1	1	5
18-2050	3	2	2	3	3	1	1	1	6
18-2051	6	3	2	3	3	1	1	1	1
18-2053	8	1	1	2	1	2	1	2	7
18-2054	9	3	1	3	3	1	1	1	3
18-2055	6	2	2	3	3	1	1	1	1
18-2058	2	1	2	2	2	2	1	1	1
18-2063	9	2	1	3	3	1	1	1	1
18-2071	5	2	2	3	3	1	2	1	3
18-2077	6	2	2	3	3	1	1	1	5
18-2079	4	1	2	1	1	1	1	1	1
18-2081	5	3	2	3	3	2	1	1	2
18-2082	8	1	1	1	1	1	1	1	1
18-2083	5	2	2	3	3	2	1	1	2
18-2086	5	2	2	3	3	2	2	1	1
18-2087	6	2	2	3	3	1	3	1	1
18-2090	3	3	2	3	3	1	1	1	1
18-2091	6	2	2	3	3	1	1	1	1
18-2094	3	2	2	3	3	1	1	1	1
18-2095	4	1	2	2	2	2	1	1	1
18-2096	2	1	2	2	2	3	1	1	1
18-2097	5	3	2	3	3	3	1	1	2
18-2098	5	2	2	3	4	1	1	1	1
18-2099	5	3	2	3	3	2	1	1	2
18-2100	7	5	2	3	4	2	1	1	1
18-2101	4	1	2	1	1	1	1	1	1
18-2102	5	2	2	3	3	1	1	1	1
18-2104	5	2	2	3	3	1	1	1	1
18-2107	5	2	2	3	3	1	1	1	2
18-2111	4	1	2	2	1	3	1	1	1

**Notes**



Variable pump



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



Variable pump

Common parts

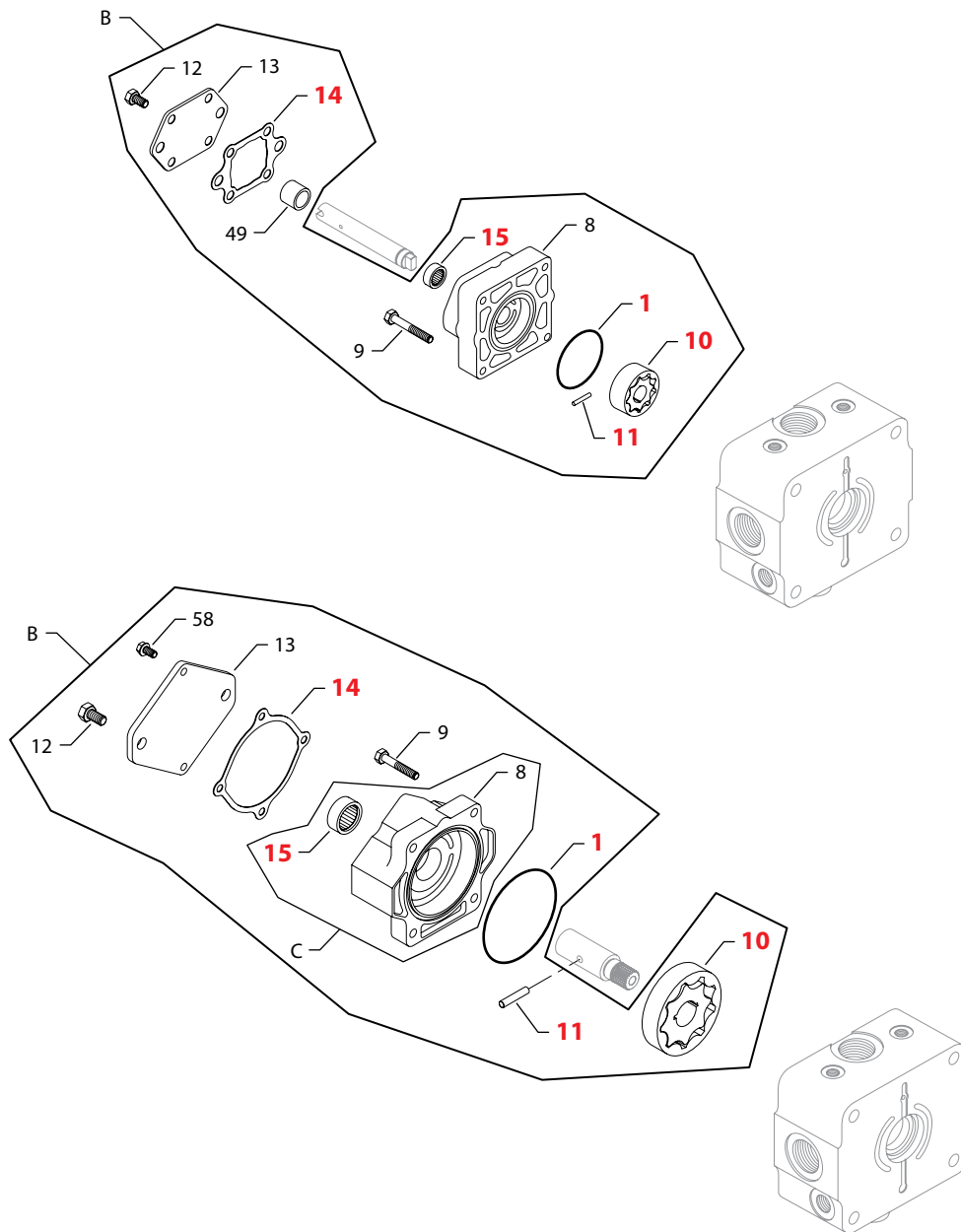
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	A	78-01		087510 (9510303)	Charge relief valve kit	1
	3	78-01		051920 (9510294)	Rear bearing kit	1
	5	78-01		016220 (9004800-1908)	Pin	1
	6	78-01		051912 (9510295)	Front bearing kit	1
	16	88-10		046151 (9005100-5600)	Plug assembly	2
	16A	88-10		085043 (9004201-3700)	O-ring	2
	17	78-01		095224 (3102818)	Plug	1
	18	78-01		555672 (9510362)	Shim kit	1
	20	78-01		051714 (3102280)	Spring	1
	22	78-01		050559 (3102400)	End cap gasket	1
	23	78-01		051581 (3102161)	Valve plate	1
	26	78-01		326124 (3103354)	Cylinder block kit (SB-1987-003)	1
	26A	78-01		631598 (3102204)	Piston assembly	9
	26B	78-01		078923 (3102750)	Slipper retainer	1
	27	78-01		051771 (3102272)	Swashplate	1
	28	78-01		051631 (3102058)	Thrust plate	1
	34	78-01		076505 (9004690-3112)	Pin	4
	35	78-01		001131 (9004201-5000)	O-ring	1
	37	78-01		051722 (3102274)	Relief valve	1
	39	88-10		515965 (9005110-5600)	Plug assembly	2
	39	78-01	88-09	087536 (9510248)	Check valve kit	2
	39A	88-10		085043 (9004201-3700)	O-ring	2
	39A	78-01	88-09	015818 (9004201-3100)	O-ring	2
	64	78-01		523563 (3103007)	Shim	A/R
	101	88-10		001511 (9005100-4400)	Plug assembly	1
	101A	88-10		001123 (9004201-2500)	O-ring	1
	102	87-28		001511 (9005100-4400)	Plug assembly	2
	102A	87-28		001123 (9004201-2500)	O-ring	2

Shaft

1	30	78-01		071266 (9003326-0008)	Key	1
	31	78-01		051599 (3102211)	Shaft, keyed, tang charge pump drive	1
2	31	78-01		052290 (3102279)	Shaft	1
3	30	78-01		071266 (9003326-0008)	Key	1
	31	78-01		079947 (3102345)	Shaft, keyed, spline charge pump drive	1
4	31	78-01		342162 (3103424)	Shaft, 13 t. spline, tang charge pump drive	1
5	31	78-01		326157 (3103426)	Shaft, 13 t. spline, spline charge pump drive	1
6	31	78-01		506048 (3102306)	Shaft, 13 t. spline, spline charge pump drive	1
7	31	78-01		337972 (3103425)	Shaft, 13 t. spline, tapped, spline charge pump drive	1
8	31	78-01		3102783	Shaft, 15 t. spline, tang charge pump drive	1
9	31	78-01		343491 (3103432)	Shaft, 15 t. spline, tapped, spline charge pump drive	1



Variable pump



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

Variable pump

Charge pump

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	B	78-01		9510302-0002	Charge pump kit	1
	1	78-01		015826 (9004100-0360)	O-ring	1
	8	78-01		051870 (3102332-02)	Charge pump housing	1
	9	78-01		058750 (9007200-3124)	Screw	4
	10	78-01		056036 (3102503)	Gerotor assembly	1
	11	78-01		629196 (9004875-0076)	Pin	1
	12	78-01		010199 (9007200-3110)	Screw	4
	13	78-01		051797 (3102164)	Cover plate	1
	14	78-01		051789 (3102163)	Cover gasket	1
	15	78-01		506071 (9001460-0015)	Needle bearing	1
	49	78-01		016287 (9001456-0002)	Inner bearing race	1

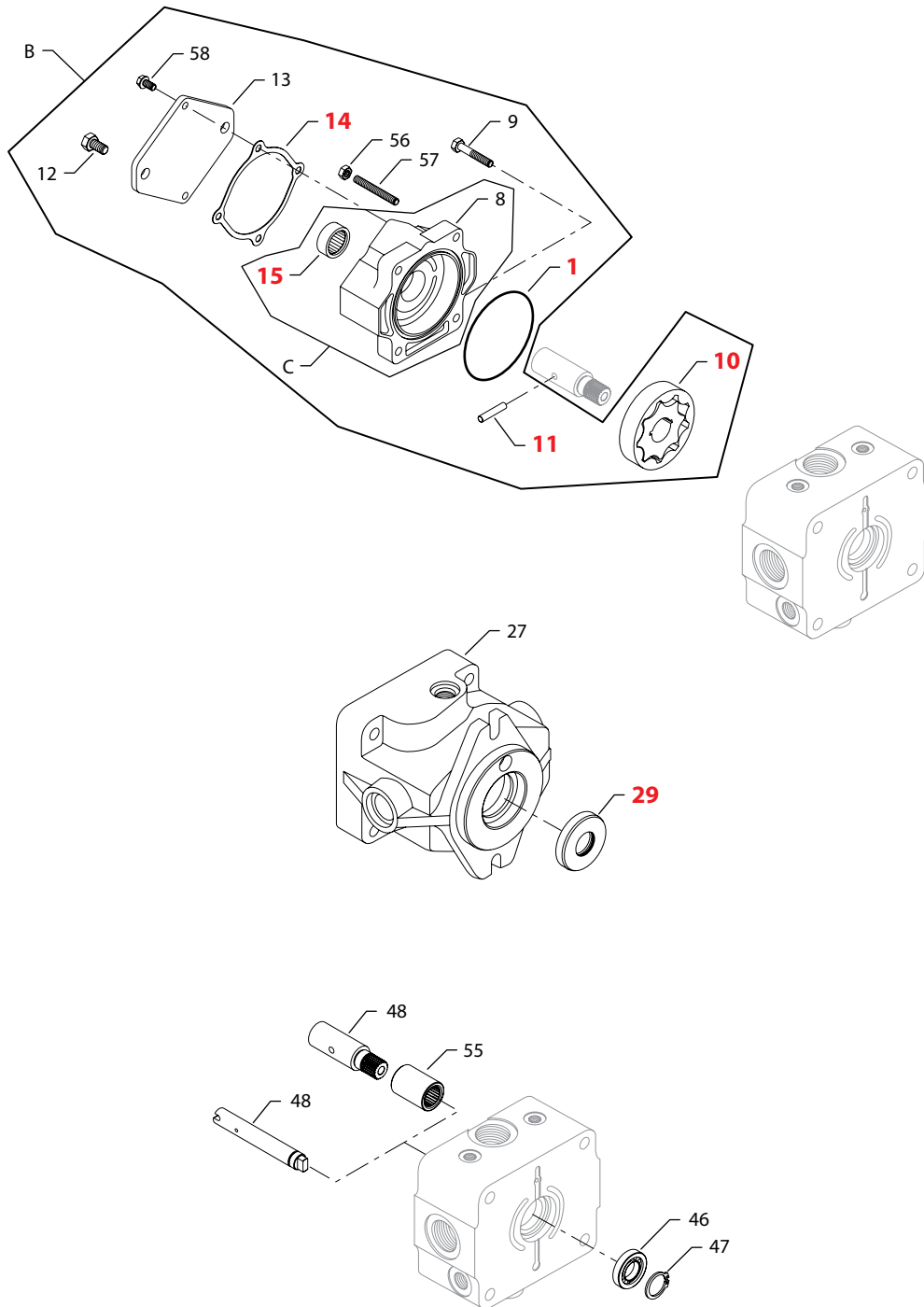
2	B	78-01		076521 (9510329-0001)	Charge pump kit	1
	C	78-01		9510599-0001	Charge pump housing kit	1
	1	78-01		015958 (9004101-1530)	O-ring	1
	8	78-01		050799 (3102304-01)	Charge pump housing	1
	9	78-01		049858 (9007200-3122)	Screw	4
	10	78-01		050997 (3102515-0001)	Gerotor assembly	1
	11	78-01		049866 (9004875-0023)	Pin	1
	12	78-01		049874 (9007200-3716)	Screw	2
	13	78-01		051003 (3102313)	Cover plate	1
	14	78-01		051011 (3102307)	Cover gasket	1
	15	78-01		049882 (9001465-0004)	Needle bearing	1
	58	78-01		049916 (9007276-0006)	Screw	2

3	B	78-01		504829 (9510329-0002)	Charge pump kit	1
	C	78-01		9510599-0002	Charge pump housing kit	1
	1	78-01		015958 (9004101-1530)	O-ring	1
	8	78-01		511873 (3102304-02)	Charge pump housing	1
	9	78-01		049858 (9007200-3122)	Screw	4
	10	78-01		506055 (3102515-0002)	Gerotor assembly	1
	11	78-01		049866 (9004875-0023)	Pin	1
	12	78-01		049874 (9007200-3716)	Screw	2
	13	78-01		051003 (3102313)	Cover plate	1
	14	78-01		051011 (3102307)	Cover gasket	1
	15	78-01		049882 (9001465-0004)	Needle bearing	1
	58	78-01		049916 (9007276-0006)	Screw	2

4	B	78-01		9510302-0001	Charge pump kit	1
	1	78-01		015826 (9004100-0360)	O-ring	1
	8	78-01		3102332-01	Charge pump housing	1
	9	78-01		058750 (9007200-3124)	Screw	4
	10	78-01		056036 (3102503)	Gerotor assembly	1
	11	78-01		629196 (9004875-0076)	Pin	1
	12	78-01		010199 (9007200-3110)	Screw	4
	13	78-01		051797 (3102164)	Cover plate	1
	14	78-01		051789 (3102163)	Cover gasket	1
	15	78-01		506071 (9001460-0015)	Needle bearing	1
	49	78-01		016287 (9001456-0002)	Inner bearing race	1



Variable pump



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

Variable pump

Charge pump

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
5	B	78-01		076521 (9510329-0001)	Charge pump kit	1
	C	78-01		9510599-0001	Charge pump housing kit	1
	1	78-01		015958 (9004101-1530)	O-ring	1
	8	78-01		050799 (3102304-01)	Charge pump housing	1
	9	78-01		049858 (9007200-3122)	Screw	1
	10	78-01		050997 (3102515-0001)	Gerotor assembly	1
	11	78-01		049866 (9004875-0023)	Pin	1
	12	78-01		049874 (9007200-3716)	Screw	2
	13	78-01		051003 (3102313)	Cover plate	1
	14	78-01		051011 (3102307)	Cover gasket	1
	15	78-01		049882 (9001465-0004)	Needle bearing	1
	56	78-01		059196 (9003530-3100)	Nut	3
	57	78-01		076513 (3102320)	Stud	3
	58	78-01		049916 (9007276-0006)	Screw	2

Shaft seal

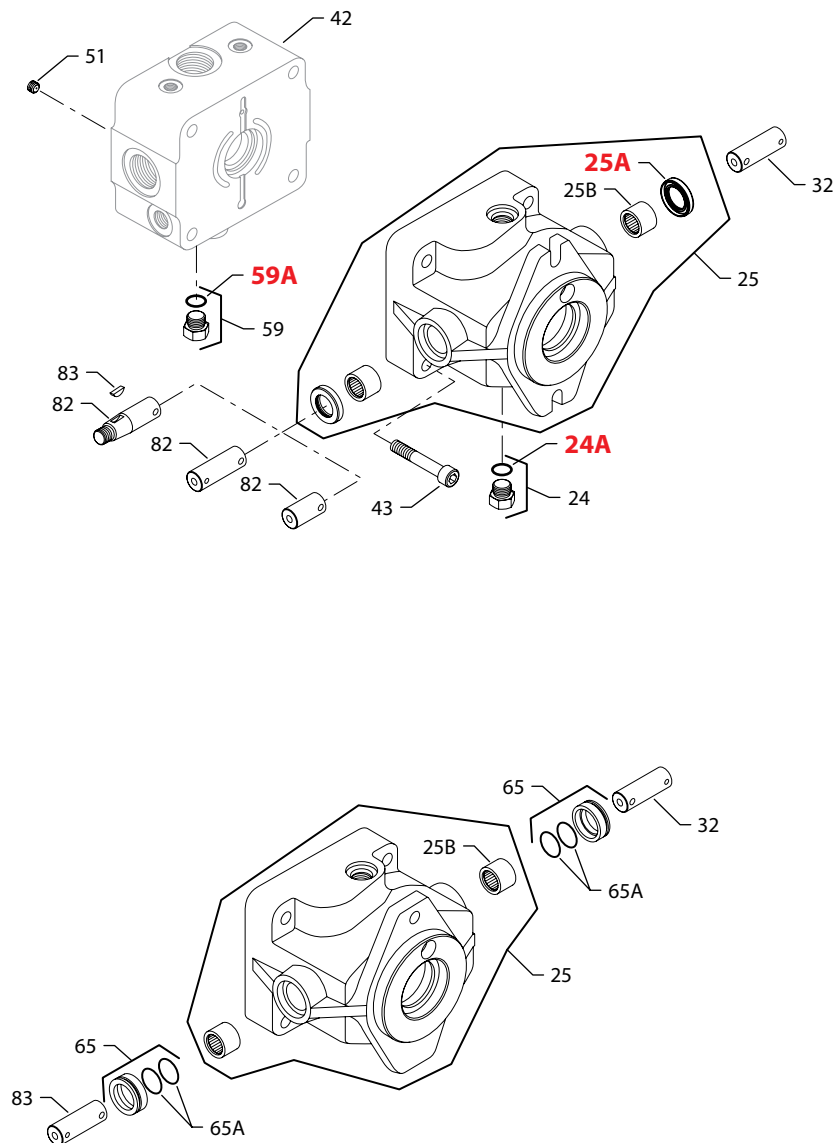
1	29	78-01		075929 (9008000-0049)	Shaft seal, .990 shaft dia. x 2.129 x .375	1
2	29	78-01		724351 (9008000-0143)	Shaft seal, .969 shaft dia. x 2.133 x .312	1

Charge pump Shaft

1	46	78-01		016295 (9001305-0003)	Ball bearing	1
	47	78-01		013649 (9006300-0062)	Retaining ring	1
	48	78-01		051854 (3102334-01)	Charge pump shaft	1
2	46	78-01		016295 (9001305-0003)	Ball bearing	1
	47	78-01		013649 (9006300-0062)	Retaining ring	1
	48	78-01		3102334-02	Charge pump shaft	1
3	46	78-01		051854 (9001310-0010)	Ball bearing	1
	47	78-01		049908 (9006300-0078)	Retaining ring	1
	48	78-01		051045 (3102309)	Charge pump shaft	1
	55	78-01		051052 (3102305)	Coupling	1



Variable pump



E100 605E

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

Variable pump

End cap

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	42	88-10		9510700	End cap assembly (SB-1988-008)	1
	43	78-01		060731 (9007300-4430)	Screw	4
2	42	88-10		9510700	End cap assembly (SB-1988-008)	1
	43	78-01		9007375-0022	Screw	4
3	42	88-10		337964 (3103406)	End cap (SB-1988-008)	1
	43	78-01		060731 (9007300-4430)	Screw	4
4	42	88-10		337964 (3103406)	End cap (SB-1988-008)	1
	43	78-01		060731 (9007300-4430)	Screw	4
	51	88-10		3104033-0002	Orifice	1
	59	88-10		001529 (9005100-7500)	Plug assembly	1
	59A	88-10		001131 (9004201-5000)	O-ring	1

Housing

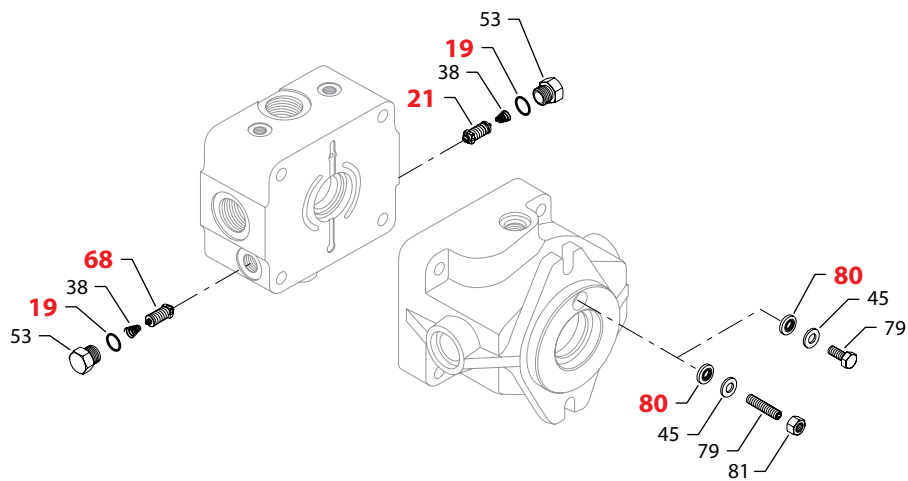
1	24	78-01		001529 (9005100-7500)	Plug assembly	1
	24A	78-01		001131 (9004201-5000)	O-ring	1
	25	78-01		326140 (3103420)	Housing assembly	1
	25A	78-01		071753 (9008000-0133)	Lip seal (SB-1992-010)	2
	25B	78-01		016279 (9001465-0002)	Needle bearing	2
2	24	78-01		093625 (9005100-9000)	Plug assembly	1
	24A	78-01		001156 (9004201-7500)	O-ring	1
	25	78-01		3103419	Housing assembly	1
	25A	78-01		071753 (9008000-0133)	Lip seal (SB-1992-010)	2
	25B	78-01		016279 (9001465-0002)	Needle bearing	2
3	24	78-01		093625 (9005100-9000)	Plug assembly	1
	24A	78-01		001156 (9004201-7500)	O-ring	1
	25	78-01		3103422	Housing assembly	1
	25B	78-01		016279 (9001465-0002)	Needle bearing	2
	65	78-01		9510416	Trunnion bushing kit	2
	65A	78-01		555649 (9004100-1200)	O-ring	4

Trunnion shaft

1	32	78-01		095232 (3102647)	Trunnion	1
	82	78-01		095232 (3102647)	Trunnion	1
2	32	78-01		095232 (3102647)	Trunnion	1
	82	78-01		3102793	Trunnion	1
	83	78-01		9003301-2521	Key	1
3	32	78-01		095232 (3102647)	Trunnion	1
	82	78-01		3102460	Trunnion	1



Variable pump



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

Variable pump

Displacement

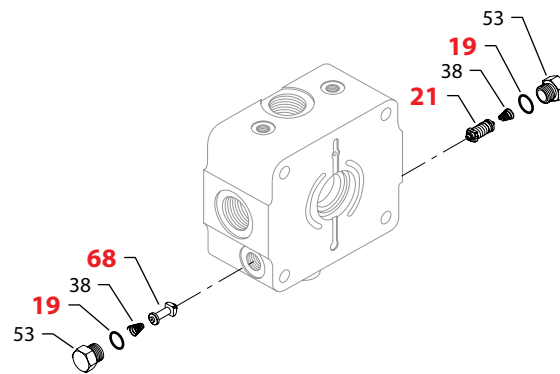
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	45	89-22		550673 (9009625-0042)	Washer	1
	79	89-22		326173 (9007205-3110)	Screw	1
	80	89-22		016170 (9009630-3100)	Seal washer	1
2	45	78-01		550673 (9009625-0042)	Washer	1
	79	78-01		9007774-0016	Screw	1
	80	78-01		016170 (9009630-3100)	Seal washer	1
	81	78-01		016188 (9003561-3100)	Nut	1

Relief/check valve

1	53	88-01		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		328377 (3103348)	Check valve poppet (SB-1988-008)	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		328377 (3103348)	Check valve poppet (SB-1988-008)	1
2	53	88-02		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	21	78-01	88-01	9510548-4500	Relief valve kit, 4500 psi	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	68	78-01	88-01	9510548-4500	Relief valve kit, 4500 psi	1
3	53	88-02		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		318717 (3103375-0345)	SCR valve, 345 bar [5000 psi] (SB-1988-008)	1
	21	78-01	88-01	9510548-5000	Relief valve kit, 5000 psi	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		318717 (3103375-0345)	SCR valve, 345 bar [5000 psi] (SB-1988-008)	1
	68	78-01	88-01	9510548-5000	Relief valve kit, 5000 psi	1
4	53	88-02		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		318691 (3103375-0175)	SCR valve, 175 bar [2538 psi] (SB-1988-008)	1
	21	78-01	88-01	9510548-2500	Relief valve kit, 2500 psi	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		318691 (3103375-0175)	SCR valve, 175 bar [2538 psi] (SB-1988-008)	1
	68	78-01	88-01	9510548-2500	Relief valve kit, 2500 psi	1
5	53	88-02		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		328328 (3103375-0210)	SCR valve, 210 bar [3045 psi] (SB-1988-008)	1
	21	78-01	88-01	9510548-3000	Relief valve kit, 3000 psi	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		328328 (3103375-0210)	SCR valve, 210 bar [3045 psi] (SB-1988-008)	1
	68	78-01	88-01	9510548-3000	Relief valve kit, 3000 psi	1



Variable pump



E100 607E

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Variable pump

Relief/check valve

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
6	53	88-02		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	21	78-01	88-01	9510548-3500	Relief valve kit, 3500 psi	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	68	78-01	88-01	9510548-3500	Relief valve kit, 3500 psi	1

7	53	88-02		326165 (9005475-0082)	Plug (SB-1988-008)	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	21	88-02		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	38	88-02		325621 (3103319)	Spring	2
	68	88-02		328377 (3103348)	Check valve poppet (SB-1988-008)	1

Overhaul seal kit

				9510355-0003	Overhaul seal kit	1
	1	78-01		015826 (9004100-0360)	O-ring	1
	1	78-01		015958 (9004101-1530)	O-ring	1
	14	78-01		051789 (3102163)	Cover gasket	1
	14	78-01		051011 (3102307)	Cover gasket	1
	16A	88-10		085043 (9004201-3700)	O-ring	2
	19	88-02		001131 (9004201-5000)	O-ring	2
	22	78-01		050559 (3102400)	End cap gasket	1
	24A	78-01		001131 (9004201-5000)	O-ring	1
	24A	78-01		001156 (9004201-7500)	O-ring	1
	25A	78-01		071753 (9008000-0133)	Lip seal	2
	29	78-01		075929 (9008000-0049)	Shaft seal, .990 shaft dia. x 2.129 x .375	1
	29	78-01		724351 (9008000-0143)	Shaft seal, .969 shaft dia. x 2.133 x .312	1
	35	78-01		001131 (9004201-5000)	O-ring	1
	39A	88-10		085043 (9004201-3700)	O-ring	2
	39A	78-01	88-09	015818 (9004201-3100)	O-ring	2
	59A	88-10		001131 (9004201-5000)	O-ring	1
	80	83-08		016170 (9009630-3100)	Seal washer	1
	101A	88-10		001123 (9004201-2500)	O-ring	1
	102A	87-28		001123 (9004201-2500)	O-ring	2

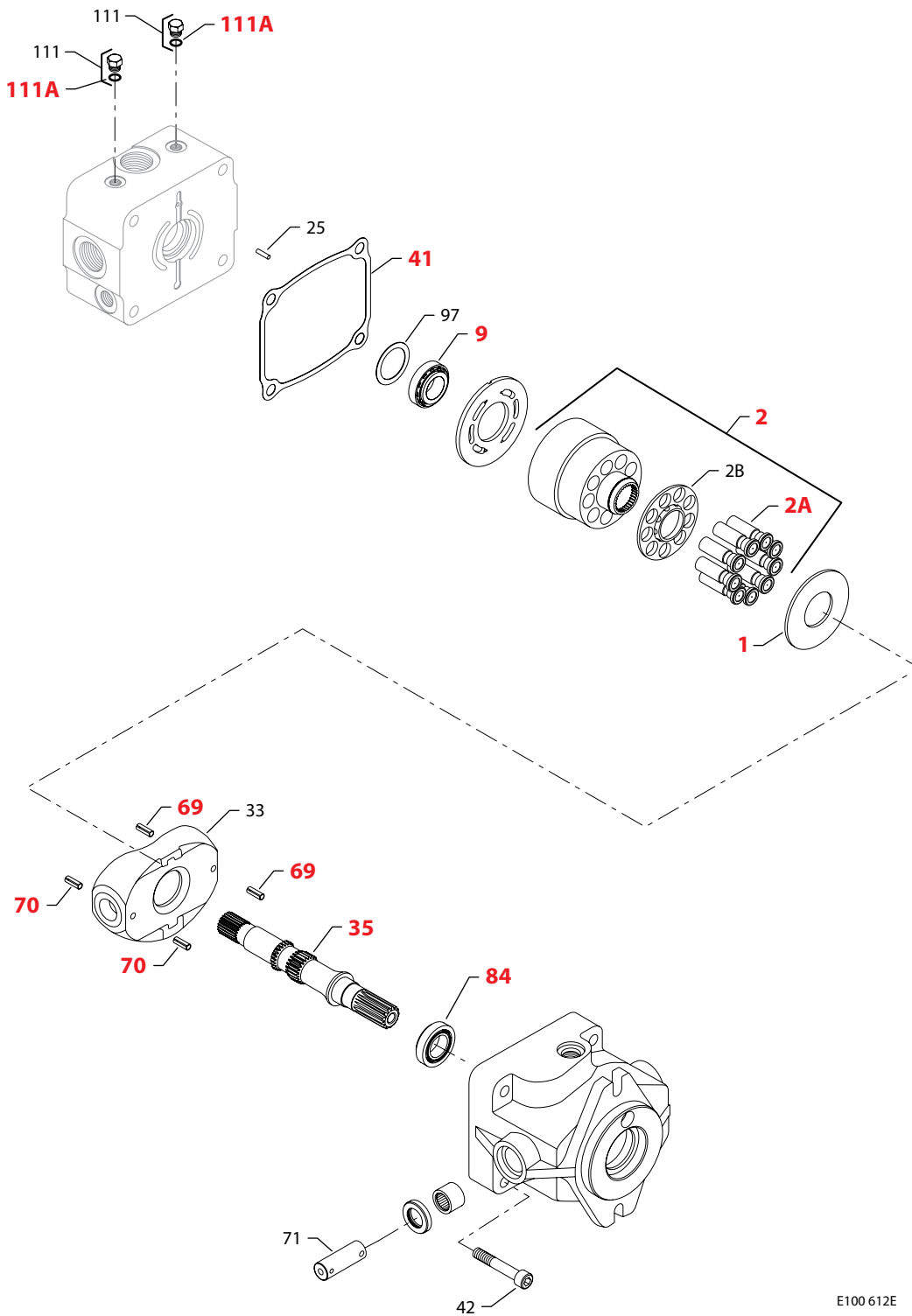
**Notes**

Tandem pump
model option code

Mode number	Option groups										
	Valve plate	Charge supply	Charge pump	Case drian port	Front seal	Front shaft	End cap	Housing	Trunnion shaft	Displacement	Relief/check
91-1803	1	3	1	1	1	1	1	1	1	1	2
91-1804	1	3	2	1	2	2	1	1	1	1	2
91-1806	1	3	2	1	1	4	1	1	1	1	2
91-1808	1	3	1	1	1	3	1	1	1	1	2
91-1809	1	3	1	1	1	4	1	1	1	1	2
91-1812	1	4	1	1	1	4	2	1	2	1	8
91-1817	1	2	2	1	2	4	2	1	1	1	3
91-1818	1	3	1	1	1	4	1	1	1	1	2
91-1819	1	3	1	1	1	4	2	1	1	1	9
91-1820	1	3	2	1	1	4	1	2	1	1	2
91-1821	1	4	1	1	1	4	1	1	2	1	2
91-1824	1	3	2	2	1	4	1	3	1	2	2
91-1826	1	3	1	1	1	1	1	2	1	1	1
91-1827	1	3	2	1	1	4	1	1	1	1	2
91-1828	1	3	2	1	2	2	1	1	1	1	2
91-1829	1	3	2	1	1	4	1	obsolete	1	1	1
91-1830	1	3	2	1	1	4	1	obsolete	1	1	1
91-1833	1	4	2	1	1	4	1	1	1	1	1
91-1834	2	6	1	1	1	4	1	1	1	1	5
91-1835	1	4	2	1	1	4	1	1	2	1	2
91-1836	1	5	2	1	1	4	1	1	1	1	4
91-1837	1	3	2	1	1	4	1	1	2	1	6
91-1838	1	3	2	1	1	4	2	1	1	1	3
91-1839	1	1	2	1	1	4	3	1	1	1	1
91-1840	1	1	2	1	1	4	3	1	1	1	1
91-1841	1	1	2	1	1	4	3	1	1	1	7



Tandem pump



E100 612E

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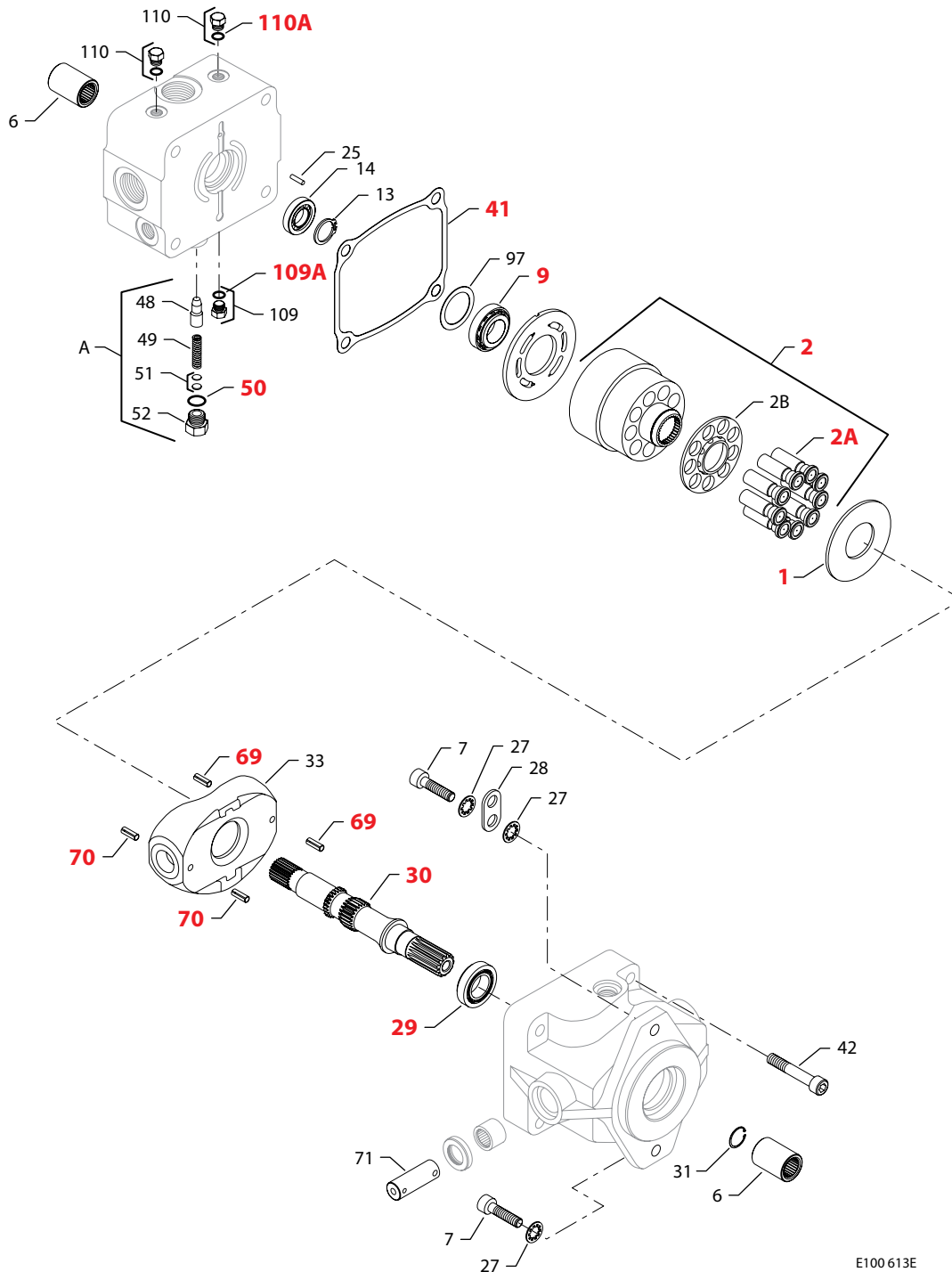
Tandem pump

Common parts, front pump

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	1	78-01		051631 (3102058)	Thrust plate	1
	2	78-01		326124 (3103354)	Cylinder block kit (SB-1987-003)	1
	2A	78-01		631598 (3102204)	Piston assembly	9
	2B	78-01		078923 (3102750)	Slipper retainer	1
	9	78-01		051920 (9510294)	Rear beaing kit	1
	25	78-01		016220 (9004800-1908)	Pin	1
	33	78-01		051771 (3102272)	Swashplate	1
	41	78-01		050559 (3102400)	End cap gasket	1
	42	78-01		060731 (9007300-4430)	Screw	4
	69	78-01		076505 (9004690-3112)	Pin	2
	70	78-01		076505 (9004690-3112)	Pin	2
	71	78-01		095232 (3102647)	Trunnion shaft	1
	84	78-01		051912 (9510295)	Front bearing kit	1
	97	78-01		523563 (3103007)	Shim	A/R
	111	88-10		001511 (9005100-4400)	Plug assembly	2
	111A	88-10		001123 (9004201-2500)	O-ring	2



Tandem pump



E100 613E

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



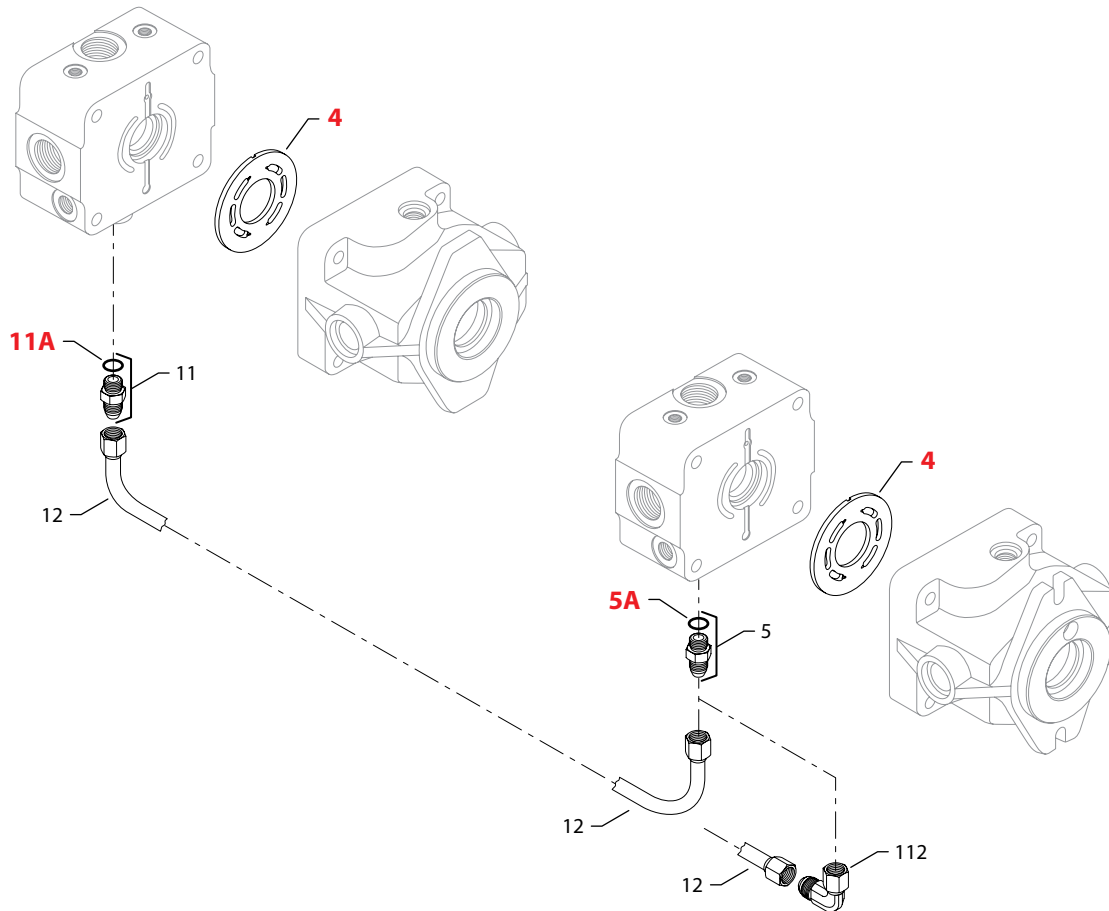
Tandem pump

Common parts, rear pump

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	A	78-01		087510 (9510303)	Charge relief valve kit	1
	1	78-01		051631 (3102058)	Thrust plate	1
	2	78-01		326124 (3103354)	Cylinder block kit (SB-1987-003)	1
	2A	78-01		631598 (3102204)	Piston assembly	9
	2B	78-01		078923 (3102750)	Slipper retainer	1
	6	78-01		051052 (3102305)	Coupling	1
	7	78-01		019463 (9007300-5024)	Screw	2
	9	78-01		051920 (9510294)	Rear bearing kit	1
	13	78-01		049908 (9006300-0078)	Retaining ring	1
	14	78-01		051854 (9001310-0010)	Ball bearing	1
	25	78-01		016220 (9004800-1908)	Pin	1
	27	78-01		9009651-5000	Lock washer	3
	28	78-01		007005 (9801000)	Lifting bracket	1
	29	78-01		051912 (9510295)	Front bearing kit	1
	30	78-01		087569 (3102308)	Rear pump shaft	1
	31	78-01		502914 (9006200-0069)	Retaining ring	1
	33	78-01		051771 (3102272)	Swashplate	1
	41	78-01		050559 (3102400)	End cap gasket	1
	42	78-01		060731 (9007300-4430)	Screw	4
	48	78-01		051722 (3102274)	Relief valve	1
	49	78-01		051714 (3102280)	Spring	1
	50	78-01		001131 (9004201-5000)	O-ring	1
	51	78-01		555672 (9510362)	Shim kit	1
	52	78-01		095224 (3102818)	Plug	1
	69	78-01		076505 (9004690-3112)	Pin	2
	70	78-01		076505 (9004690-3112)	Pin	2
	71	78-01		095232 (3102647)	Trunnion shaft	1
	97	78-01		523563 (3103007)	Shim	A/R
	109	88-10		001511 (9005100-4400)	Plug assembly	1
	109A	88-10		001123 (9004201-2500)	O-ring	1
	110	88-10		001511 (9005100-4400)	Plug assembly	2
	110A	88-10		001123 (9004201-2500)	O-ring	2



Tandem pump



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Tandem pump

Valve plate

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	4	78-01		051581 (3102161)	Valve plate, standard	2

2	4	78-01		706507 (3103062)	Valve plate, 1.5° index	2
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Charge supply

1	5	87-11		502906 (9002102-5075)	Connector, straight	1
	5A	87-11		001131 (9004201-5000)	O-ring	1
	11	87-11		502906 (9002102-5075)	Connector, straight	1
	11A	87-11		001131 (9004201-5000)	O-ring	1
	12	87-11		343483 (9900170)	Tube	1

2	5	78-01		502906 (9002102-5075)	Connector, straight	1
	5A	78-01		001131 (9004201-5000)	O-ring	1
	11	78-01		502906 (9002102-5075)	Connector, straight	1
	11A	78-01		001131 (9004201-5000)	O-ring	1
	12	87-34		343483 (9900170)	Tube	1
	12	78-01	87-33	511907 (9900136)	Tube	1

3	5	78-01		502906 (9002102-5075)	Connector, straight	1
	5A	78-01		001131 (9004201-5000)	O-ring	1
	11	78-01		502906 (9002102-5075)	Connector, straight	1
	11A	78-01		001131 (9004201-5000)	O-ring	1
	12	87-33		343483 (9900170)	Tube	1
	12	78-01	87-32	511907 (9900136)	Tube	1

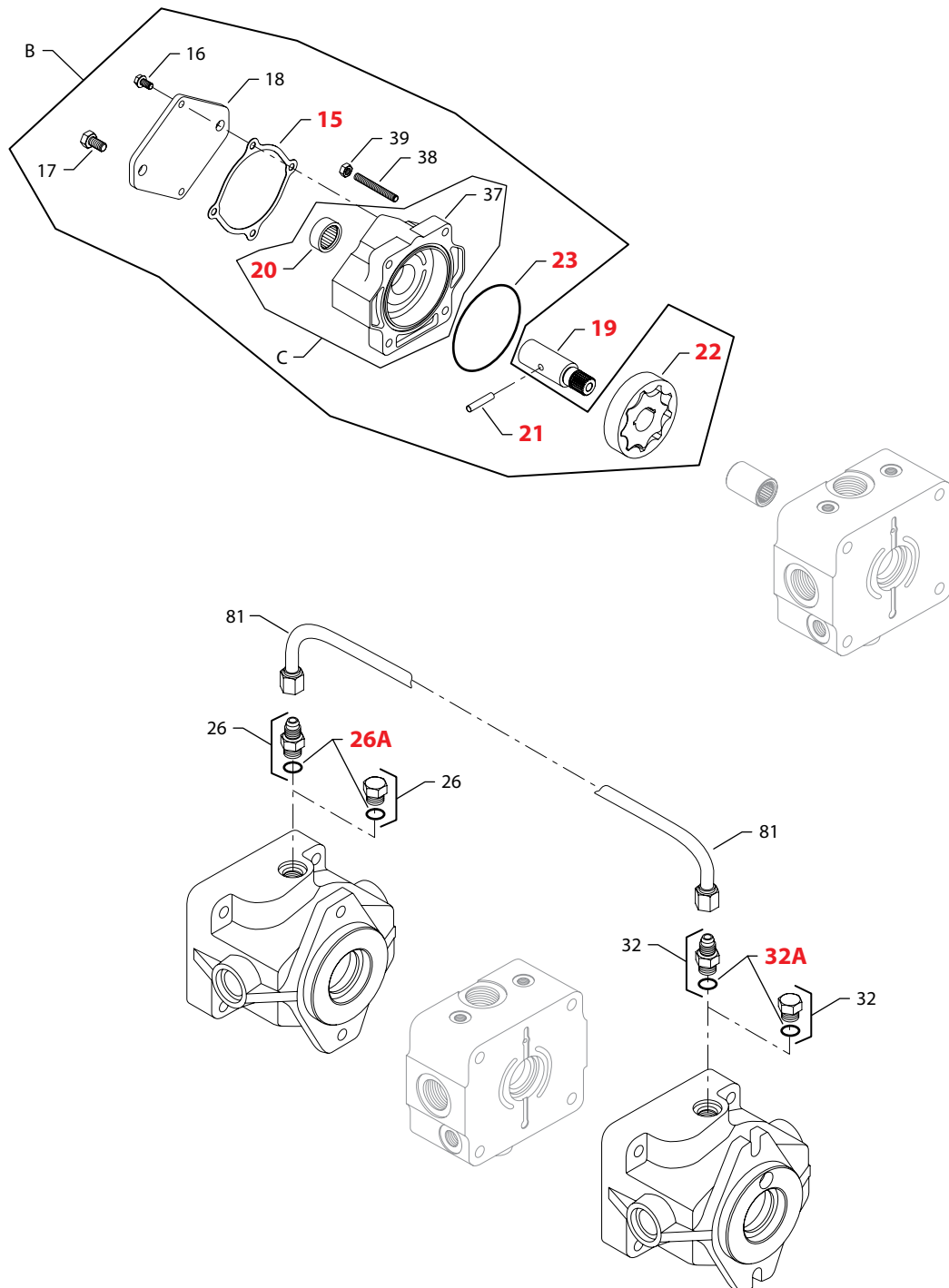
4	5	78-01		9002813-5075	Connector, 45°	1
	5A	78-01		001131 (9004201-5000)	O-ring	1
	11	78-01		9002813-5075	Connector, 45°	1
	11A	78-01		001131 (9004201-5000)	O-ring	1
	12	87-33		343483 (9900170)	Tube	1
	12	78-01	87-32	142448 (9900096)	Tube	1

5	5	78-01		502906 (9002102-5075)	Connector, straight	1
	5A	78-01		001131 (9004201-5000)	O-ring	1
	11	78-01		502906 (9002102-5075)	Connector, straight	1
	11A	78-01		001131 (9004201-5000)	O-ring	1
	12	87-33		343483 (9900170)	Tube	1
	12	78-01	87-32	142448 (9900096)	Tube	1

6	5	78-01		502906 (9002102-5075)	Connector, straight	1
	5A	78-01		w001131 (9004201-5000)	O-ring	1
	11	88-48		9002807-5075	Connector, 90°	1
	11	78-01	88-47	502906 (9002102-5075)	Connector, straight	1
	11A	78-01		001131 (9004201-5000)	O-ring	1
	12	88-48		9900171	Tube	1
	12	87-33	88-47	343483 (9900170)	Tube	1
	12	78-01	87-32	142448 (9900096)	Tube	1
	112	88-48		9002806-5075	Connector, 90°	1



Tandem pump



E100 615E

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Tandem pump

Charge pump

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	B	78-01		9510329-0003	Charge pump kit	1
	C	78-01		9510599-0001	Charge pump housing kit	1
	15	78-01		051011 (3102307)	Cover gasket	1
	16	78-01		049916 (9007276-0006)	Screw	2
	17	78-01		049874 (9007200-3716)	Screw	2
	18	78-01		051003 (3102313)	Cover plate	1
	19	78-01		051045 (3102309)	Charge pump shaft	1
	20	78-01		049882 (9001465-0004)	Needle bearing	1
	21	78-01		049866 (9004875-0023)	Pin	1
	22	78-01		050997 (3102515-0001)	Gerotor assembly	1
	23	78-01		015958 (9004101-1530)	O-ring	1
	38	78-01		076513 (3102320)	Stud	4
	39	78-01		059196 (9003530-3100)	Nut	4

2	B	78-01		555664 (9510329-0004)	Charge pump kit	1
	C	78-01		9510599-0002	Charge pump housing kit	1
	15	78-01		051011 (3102307)	Cover gasket	1
	16	78-01		049916 (9007276-0006)	Screw	2
	17	78-01		049874 (9007200-3716)	Screw	2
	18	78-01		051003 (3102313)	Cover plate	1
	19	78-01		051045 (3102309)	Charge pump shaft	1
	20	78-01		049882 (9001465-0004)	Needle bearing	1
	21	78-01		049866 (9004875-0023)	Pin	1
	22	78-01		506055 (3102515-0002)	Gerotor assembly	1
	23	78-01		015958 (9004101-1530)	O-ring	1
	38	78-01		076513 (3102320)	Stud	4
	39	78-01		059196 (9003530-3100)	Nut	4

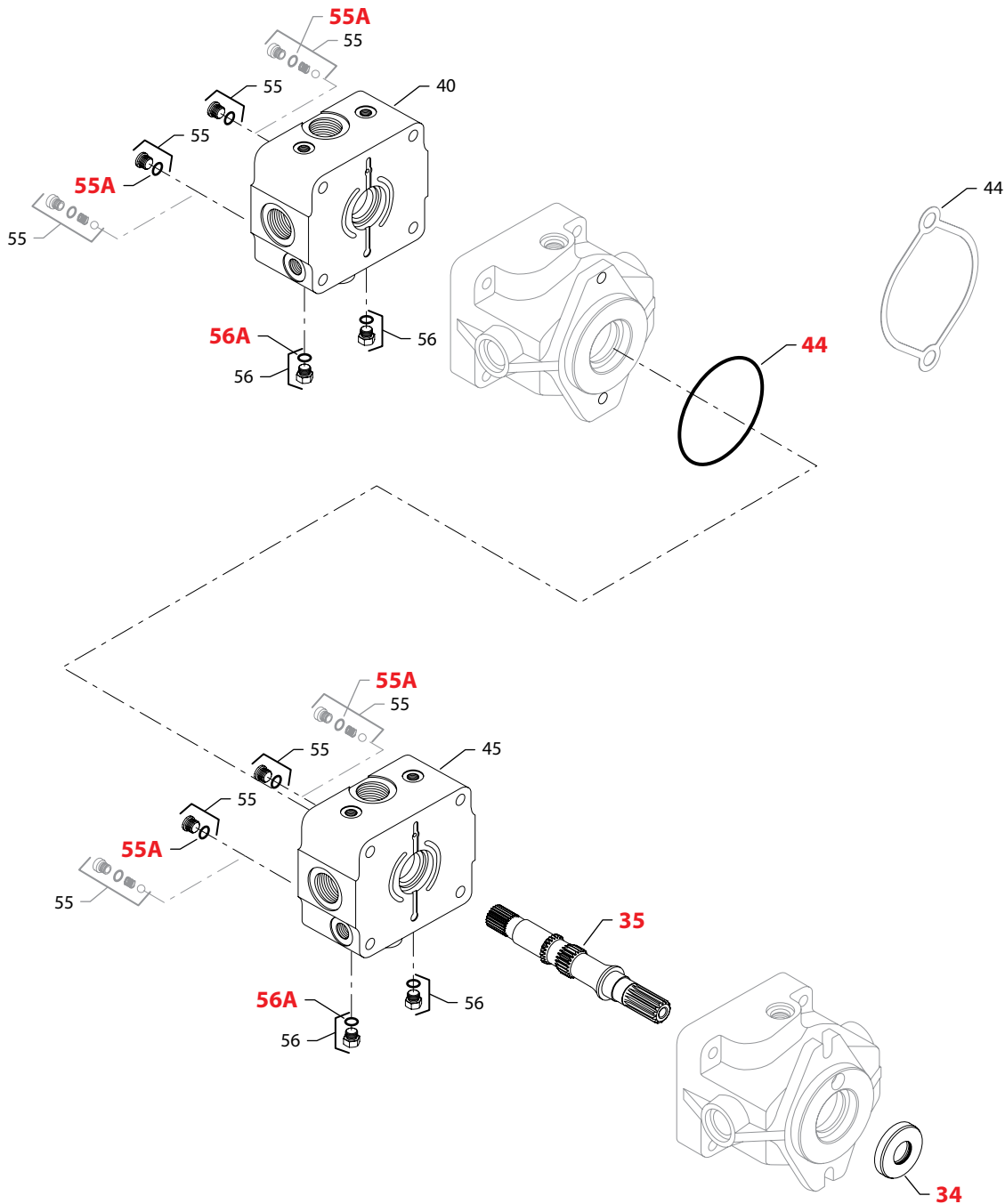
Case drain port

1	3	78-01		093625 (9005100-9000)	Plug	1
	3A	78-01		001156 (9004201-7500)	O-ring	1
	8	78-01		093625 (9005100-9000)	Plug	1
	8A	78-01		001156 (9004201-7500)	O-ring	1
	26	78-01		093625 (9005100-9000)	Plug	1
	26A	78-01		001156 (9004201-7500)	O-ring	1
	32	78-01		093625 (9005100-9000)	Plug	1
	32A	78-01		001156 (9004201-7500)	O-ring	1
	112	88-48		9002806-5075	Connector,90°	1

2	3	78-01		093625 (9005100-9000)	Plug	1
	3A	78-01		001156 (9004201-7500)	O-ring	1
	8	78-01		093625 (9005100-9000)	Plug	1
	8A	78-01		001156 (9004201-7500)	O-ring	1
	26	78-01		9002102-5090	Connector, straight	1
	26A	78-01		001156 (9004201-7500)	O-ring	1
	32	78-01		9002102-5090	Connector, straight	1
	32A	78-01		001156 (9004201-7500)	O-ring	1
	81	78-01		9900149	Tube	1



Tandem pump



E100 616E

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Tandem pump

Shaft seal

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	34	78-01		075929 (9008000-0049)	Lip seal (SB-1992-010)	1

2	34	78-01		724351 (9008000-0143)	Lip seal (SB-1992-010)	1
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Front shaft

1	35	78-01		502898 (3102791)	Shaft	1
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2	35	78-01		326157 (3103426)	Shaft	1
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3	35	78-01		3102752	Shaft	1
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4	35	78-01		343491 (3103432)	Shaft	1
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End cap

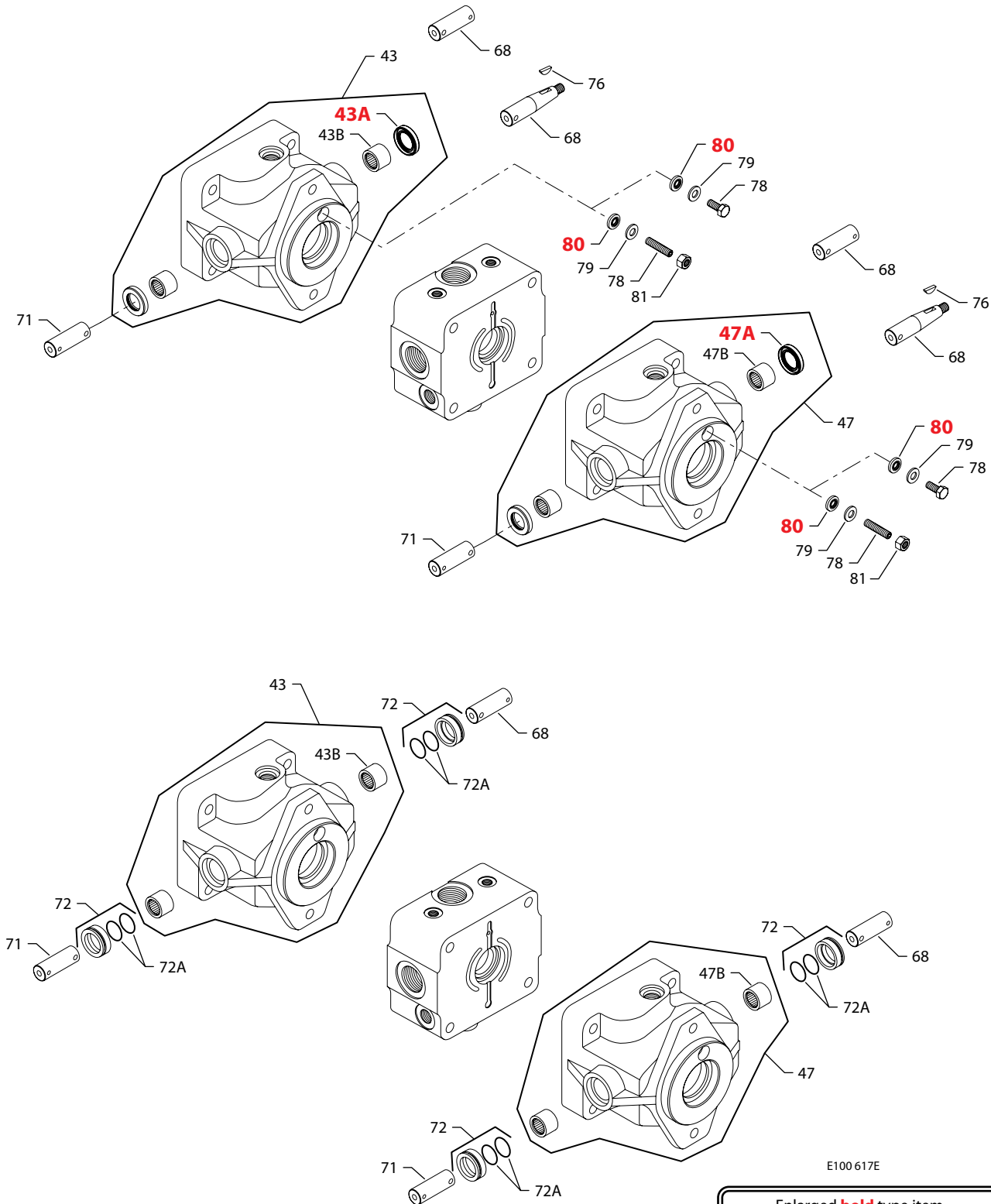
1	40	87-33		337964 (3103406)	End cap	1
	44	87-33		9004100-2420	O-ring	1
	44	78-01	87-32	3102314	Gasket	1
	45	87-33		3103496	End cap	1
	55	87-33		515965 (9005110-5600)	Plug	4
	55	78-01	87-32	087536 (9510248)	Check valve kit	4
	55A	87-33		085043 (9004201-3700)	O-ring	4
	55A	78-01	87-32	015818 (9004201-3100)	O-ring	4
	56	87-33		046151 (9005100-5600)	Plug	4
	56A	87-33		085043 (9004201-3700)	O-ring	4

2	40	87-34		337964 (3103406)	End cap	1
	44	87-34		9004100-2420	O-ring	1
	44	78-01	87-33	3102314	Gasket	1
	45	87-34		3103496	End cap	1
	55	87-34		515965 (9005110-5600)	Plug	4
	55	78-01	87-33	087536 (9510248)	Check valve kit	4
	55A	87-34		085043 (9004201-3700)	O-ring	4
	55A	78-01	87-32	015818 (9004201-3100)	O-ring	4
	56	87-34		046151 (9005100-5600)	Plug	4
	56A	87-34		085043 (9004201-3700)	O-ring	4

3	40	87-14		337964 (3103406)	End cap	1
	44	87-14		9004100-2420	O-ring	1
	45	87-14		3103496	End cap	1
	55	87-14		515965 (9005110-5600)	Plug	4
	55A	87-14		085043 (9004201-3700)	O-ring	4
	56	87-14		046151 (9005100-5600)	Plug	4
	56A	87-14		085043 (9004201-3700)	O-ring	4



Tandem pump



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Tandem pump

Housing

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	43	78-01		3103418	Rear pump housing	1
	43A	78-01		071753 (9008000-0133)	Lip seal (SB-1992-010)	2
	43B	78-01		016279 (9001465-0002)	Needle bearing	2
	47	78-01		3103419	Front pump housing	1
	47A	78-01		071753 (9008000-0133)	Lip seal (SB-1992-010)	2
	47B	78-01		016279 (9001465-0002)	Needle bearing	2

2	43	78-01	89-06	3103417	Rear pump housing	1
	47	78-01	89-06	3103422	Front pump housing	1
	72	78-01	89-06	9510416	Trunnion bushing kit	4
	72A	78-01	89-06	555649 (9004100-1200)	O-ring	8

3	43	78-01		3103419	Rear pump housing	1
	43A	78-01		071753 (9008000-0133)	Lip seal (SB-1992-010)	2
	43B	78-01		016279 (9001465-0002)	Needle bearing	2
	47	78-01		3103419	Front pump housing	1
	47A	78-01		071753 (9008000-0133)	Lip seal (SB-1992-010)	2
	47B	78-01		016279 (9001465-0002)	Needle bearing	2

Trunnion control shaft

1	68	78-01		095232 (3102647)	Trunnion shaft	2
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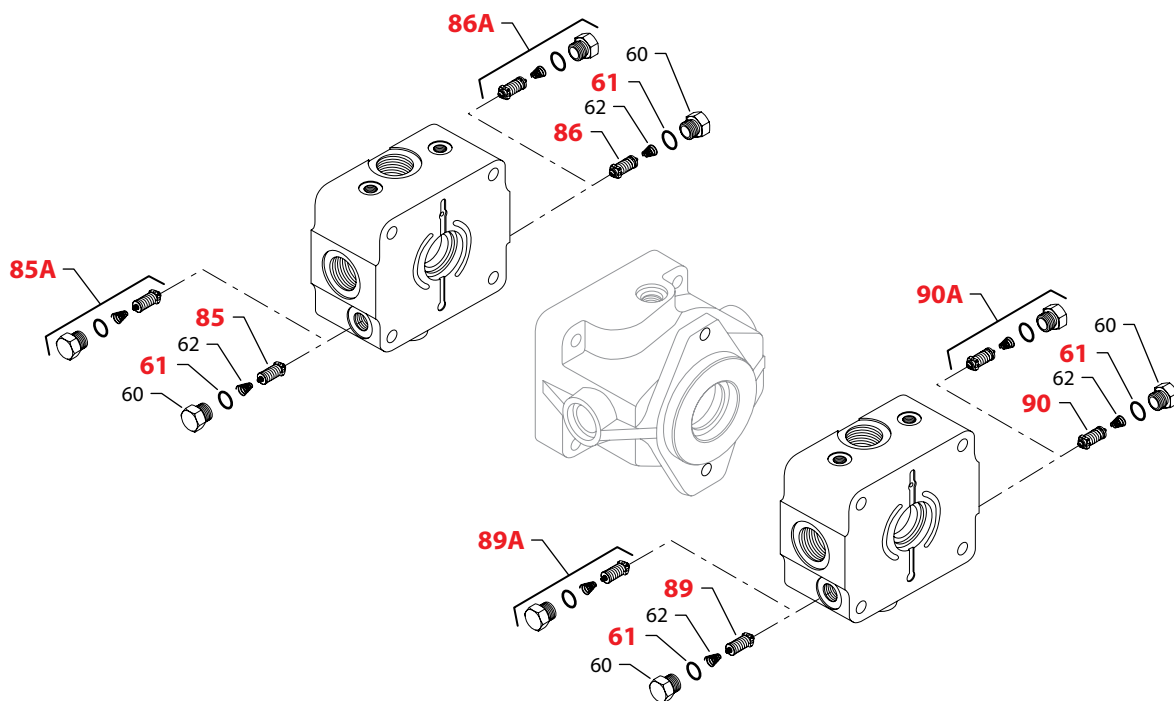
2	68	78-01		3102793	Trunnion shaft, tapered	2
	76	78-01		9003301-2521	Key	2

Displacement

1	78	88-40		326173 (9007205-3110)	Hex head screw	2
	79	88-40		550673 (9009625-0042)	Washer	2
	80	88-40		016170 (9009630-3100)	Seal washer	2
2	77	83-08		016188 (9003561-3100)	Nut	2
	78	83-08		9007774-0016	Set screw	2
	79	83-08		550673 (9009625-0042)	Washer	2
	80	83-08		016170 (9009630-3100)	Seal washer	2



Tandem pump



E100 618E

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

Tandem pump

Relief/check valve

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	60	87-14		326165 (9005475-0082)	Plug	4
	61	87-14		001131 (9004201-5000)	O-ring	4
	62	87-14		325621 (3103319)	Spring	4
	85	87-14		328377 (3103348)	Check valve poppet	1
	86	87-14		328377 (3103348)	Check valve poppet	1
	89	87-14		328377 (3103348)	Check valve poppet	1
	90	87-14		328377 (3103348)	Check valve poppet	1

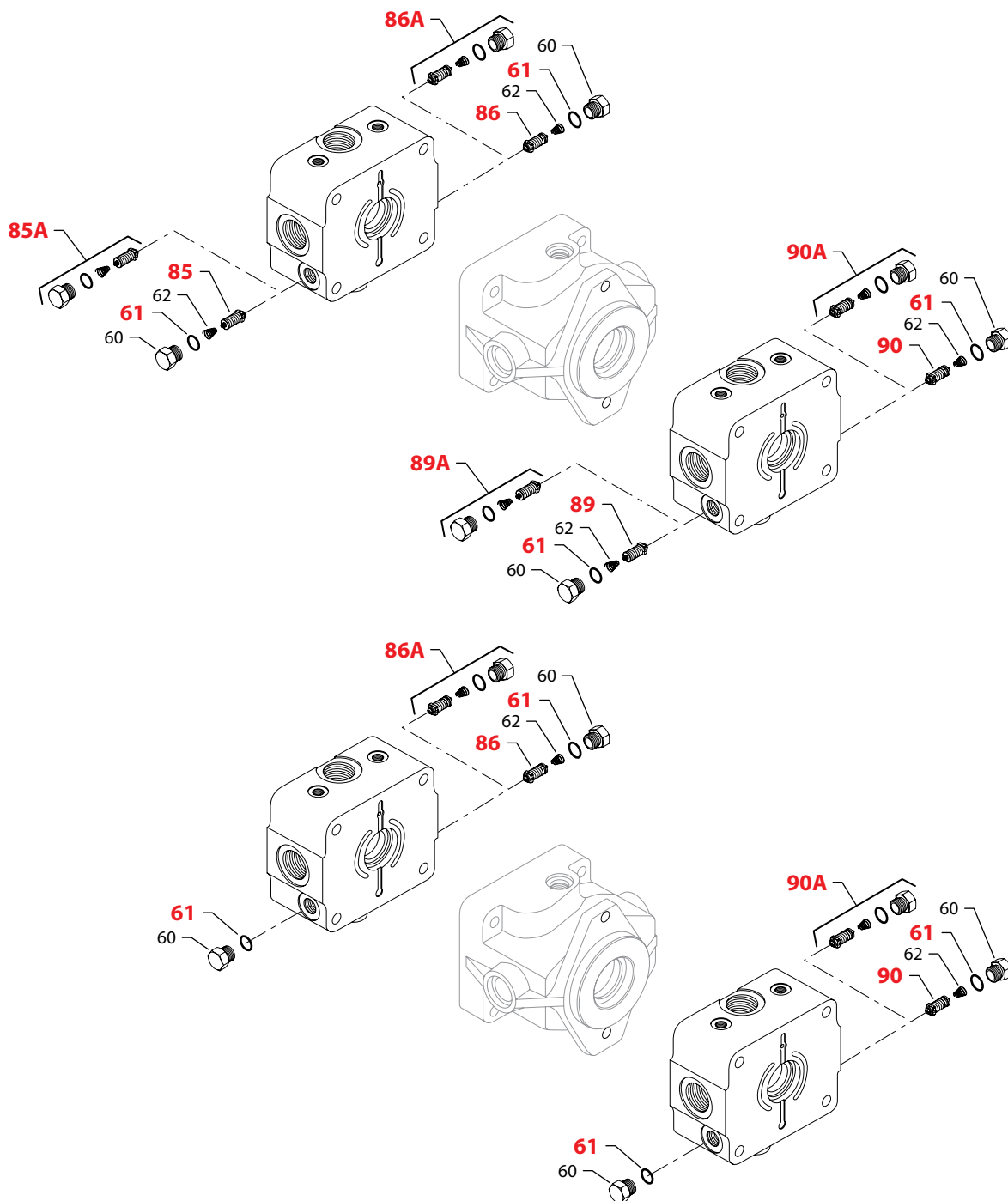
2	60	87-34		326165 (9005475-0082)	Plug	4
	61	87-34		001131 (9004201-5000)	O-ring	4
	62	87-34		325621 (3103319)	Spring	4
	85	87-34		328377 (3103348)	Check valve poppet	1
	86	87-34		328377 (3103348)	Check valve poppet	1
	89	87-34		328377 (3103348)	Check valve poppet	1
	90	87-34		328377 (3103348)	Check valve poppet	1

3	60	87-34		326165 (9005475-0082)	Plug	4
	61	87-34		001131 (9004201-5000)	O-ring	4
	62	87-34		325621 (3103319)	Spring	4
	85	87-34		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	85A	78-01	87-33	9510548-3500	Relief valve kit, 3500 psi	1
	86	87-34		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	86A	78-01	87-33	9510548-3500	Relief valve kit, 3500 psi	1
	89	87-34		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	89A	78-01	87-33	9510548-3500	Relief valve kit, 3500 psi	1
	90	87-34		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	90A	78-01	87-33	9510548-3500	Relief valve kit, 3500 psi	1

4	60	87-33		326165 (9005475-0082)	Plug	4
	61	87-33		001131 (9004201-5000)	O-ring	4
	62	87-33		325621 (3103319)	Spring	4
	85	87-33		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	85A	78-01	87-32	9510548-3500	Relief valve kit, 3500 psi	1
	86	87-33		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	86A	78-01	87-32	9510548-3500	Relief valve kit, 3500 psi	1
	89	87-33		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	89A	78-01	87-32	9510548-3500	Relief valve kit, 3500 psi	1
	90	87-33		318709 (3103375-0250)	SCR valve, 250 bar [3625 psi] (SB-1988-008)	1
	90A	78-01	87-32	9510548-3500	Relief valve kit, 3500 psi	1



Tandem pump



E100 619E

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



Tandem pump

Relief/check valve

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
5	60	87-33		326165 (9005475-0082)	Plug	4
	61	87-33		001131 (9004201-5000)	O-ring	4
	62	87-33		325621 (3103319)	Spring	4
	85	87-33		328328 (3103375-0210)	SCR valve, 210 bar [3045 psi] (SB-1988-008)	1
	85A	78-01	87-32	9510548-3000	Relief valve kit, 3000 psi	1
	86	87-33		328328 (3103375-0210)	SCR valve, 210 bar [3045 psi] (SB-1988-008)	1
	86A	78-01	87-32	9510548-3000	Relief valve kit, 3000 psi	1
	89	87-33		318717 (3103375-0345)	SCR valve, 345 bar [5000 psi] (SB-1988-008)	1
	89A	78-01	87-32	9510548-5000	Relief valve kit, 5000 psi	1
	90	87-33		318717 (3103375-0345)	SCR valve, 345 bar [5000 psi] (SB-1988-008)	1
	90A	78-01	87-32	9510548-5000	Relief valve kit, 5000 psi	1

6	60	87-33		326165 (9005475-0082)	Plug	4
	61	87-33		001131 (9004201-5000)	O-ring	4
	62	87-33		325621 (3103319)	Spring	2
	86	87-33		328328 (3103375-0210)	SCR valve, 210 bar [3045 psi] (SB-1988-008)	1
	86A	78-01	87-32	9510548-3000	Relief valve kit, 3000 psi	1
	90	87-33		318717 (3103375-0345)	SCR valve, 345 bar [5000 psi] (SB-1988-008)	1
	90A	78-01	87-32	9510548-5000	Relief valve kit, 5000 psi	1

7	60	87-14		326165 (9005475-0082)	Plug	4
	61	87-14		001131 (9004201-5000)	O-ring	4
	62	87-14		325621 (3103319)	Spring	4
	85	87-14		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	85A	78-01	87-13	9510548-4500	Relief valve kit, 4500 psi	1
	86	87-14		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	86A	78-01	87-13	9510548-4500	Relief valve kit, 4500 psi	1
	89	87-14		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	89A	78-01	87-13	9510548-4500	Relief valve kit, 4500 psi	1
	90	87-14		318725 (3103375-0300)	SCR valve, 300 bar [4350 psi] (SB-1988-008)	1
	90A	78-01	87-13	9510548-4500	Relief valve kit, 4500 psi	1

8	85A	78-01	87-17	9510548-5000	Relief valve kit, 5000 psi	1
	86A	78-01	87-17	9510548-5000	Relief valve kit, 5000 psi	1
	89A	78-01	87-17	9510548-5000	Relief valve kit, 5000 psi	1
	90A	78-01	87-17	9510548-5000	Relief valve kit, 5000 psi	1

9	85A	78-01	87-17	9510548-3000	Relief valve kit, 3000 psi	1
	86A	78-01	87-17	9510548-3000	Relief valve kit, 3000 psi	1
	89A	78-01	87-17	9510548-3000	Relief valve kit, 3000 psi	1
	90A	78-01	87-17	9510548-3000	Relief valve kit, 3000 psi	1



Tandem pump

Overhaul seal kit

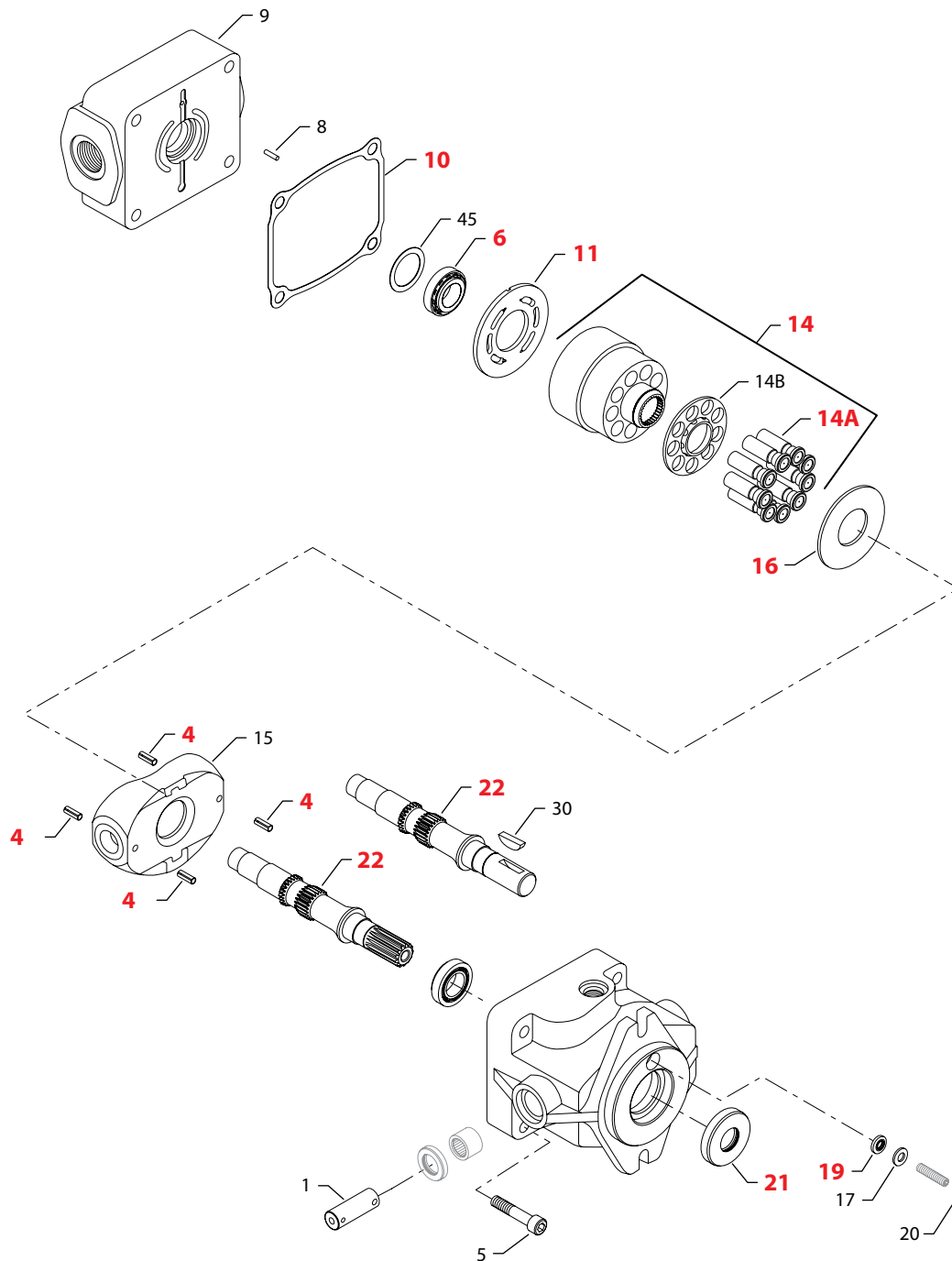
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
				9510346	Overhaul seal kit	1
	3A	78-01		001156 (9004201-7500)	O-ring	1
	5A	78-01		001131 (9004201-5000)	O-ring	1
	8A	78-01		001156 (9004201-7500)	O-ring	1
	11A	78-01		001131 (9004201-5000)	O-ring	1
	15	78-01		051011 (3102307)	Cover gasket	1
	23	78-01		015958 (9004101-1530)	O-ring	1
	26A	78-01		001156 (9004201-7500)	O-ring	1
	32A	78-01		001156 (9004201-7500)	O-ring	1
	34	78-01		075929 (9008000-0049)	Shaft seal	1
	41	78-01		050559 (3102400)	End cap gasket	2
	43A	78-01		071753 (9008000-0133)	Lip seal	2
	44	78-01		3102314	Gasket	1
	44	78-01		9004100-2420	O-ring	1
	47A	78-01		071753 (9008000-0133)	Lip seal	2
	50	78-01		001131 (9004201-5000)	O-ring	1
	55A	78-01		015818 (9004201-3100)	O-ring	4
	56A	78-01		085043 (9004201-3700)	O-ring	4
	61	78-01		001131 (9004201-5000)	O-ring	4
	80	83-08		016170 (9009630-3100)	Seal washer	2
	109A	78-01		001123 (9004201-2500)	O-ring	1
	110A	78-01		001123 (9004201-2500)	O-ring	2
	111A	78-01		001123 (9004201-2500)	O-ring	2


Variable motor
model option code

Mode number	Option groups						
	Shaft seal	Shaft	End cap	Housing	Bypass	Manifold valve	Displacement
18-4003	1	1	1	1	2	1	1
18-4004	1	2	2	1	1	1	1
18-4005	1	2	1	1	2	1	1
18-4006	1	4	2	1	1	1	1
18-4011	1	3	1	1	2	1	1
18-4014	1	2	1	1	2	1	1
18-4015	1	2	1	1	2	1	1
18-4021	1	1	1	1	2	1	1
18-4022	1	3	1	1	2	1	1
18-4030	1	5	3	Obsolete	2	2	2
18-4032	1	1	1	Obsolete	2	1	1
18-4034	1	2	1	1	2	1	3
18-4037	1	2	3	1	2	2	3
18-4038	1	3	2	1	1	1	1
18-4039	1	3	2	1	1	1	1
18-4040	1	3	1	2	2	1	1



Variable motor



E100 620E

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



Variable motor

Common parts

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	1	78-01		095232 (3102647)	Trunnion	2
	4	78-01		076505 (9004690-3112)	Pin	4
	5	78-01		060731 (9007300-4430)	Screw	4
	6	78-01		051920 (9510294)	Rear bearing kit	1
	8	78-01		016220 (9004800-1908)	Pin	1
	10	78-01		050559 (3102400)	End cap gasket	1
	11	78-01		051581 (3102161)	Valve plate	1
	14	78-01		326124 (3103354)	Cylinder block kit (SB-1987-003)	1
	14A	78-01		631598 (3102204)	Piston assembly	9
	14B	78-01		078923 (3102750)	Slipper retainer	1
	15	78-01		051771 (3102272)	Swashplate	1
	16	78-01		051631 (3102058)	Thrust plate	1
	17	78-01		550673 (9009625-0042)	Washer	1
	19	78-01		016170 (9009630-3100)	Seal washer	1
	20	78-01		016188 (9003561-3100)	Nut	1
	45	78-01		523563 (3103007)	Shim	A/R

Shaft seal

1	21	78-01		724351 (9008000-0143)	Shaft lip seal	1
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Shaft

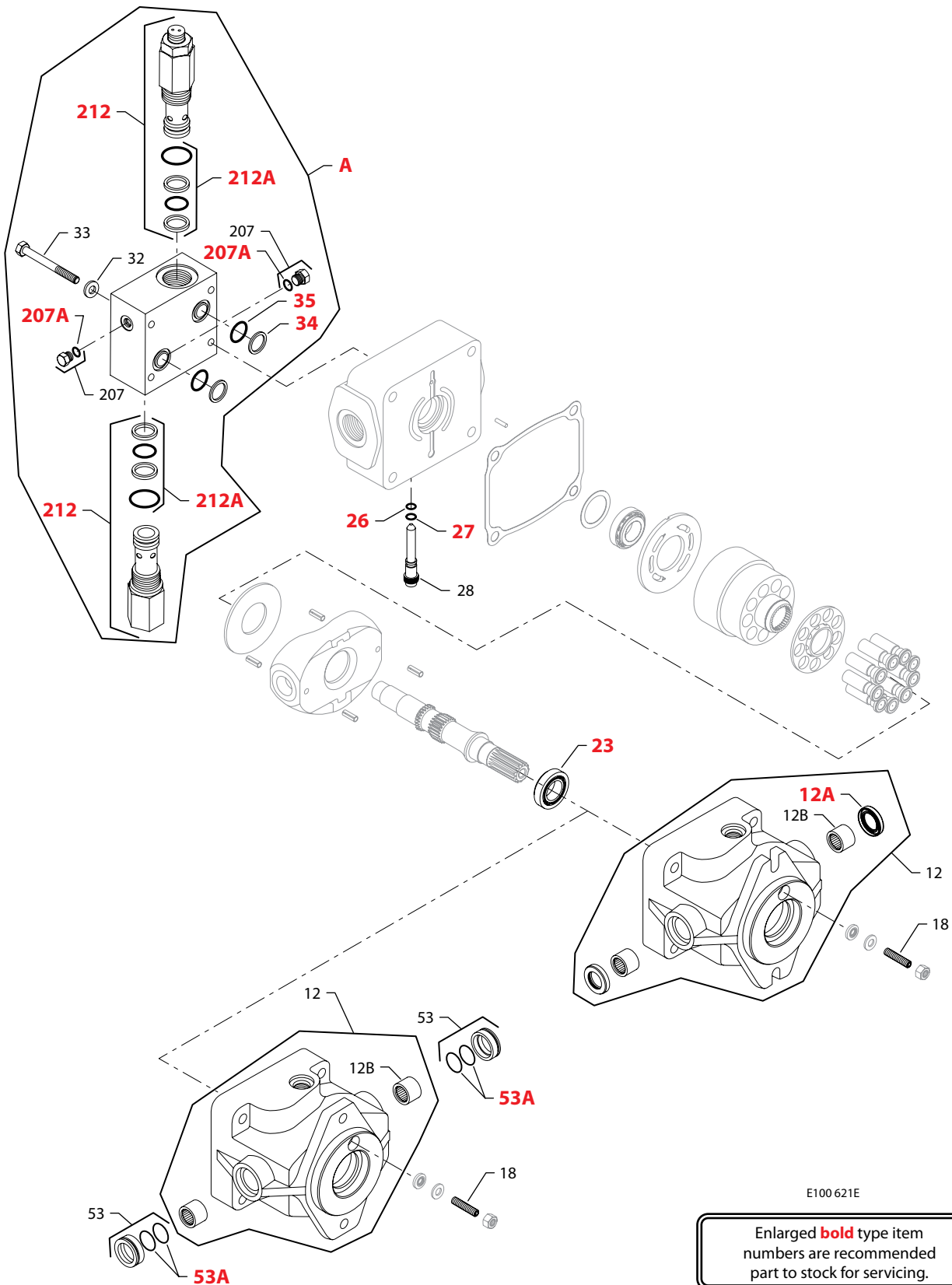
1	22	78-01		509513 (3102736)	Shaft	1
2	22	78-01		333500 (3103429)	Shaft	1
3	22	78-01		335034 (3103430)	Shaft	1
4	22	88-09		552786 (3102735)	Shaft	1
	30	88-09		071266 (9003326-0008)	Key	1
5	22	87-34		555573 (3102952)	Shaft	1

End cap

1	9	78-01		052266 (3102296)	End cap	1
2	9	78-01		709725 (3102831)	End cap	1
3	9	78-01		555557 (3102578)	End cap	1



Variable motor



E100 621E

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



Variable motor

Housing

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	12	78-01		326140 (3103420)	Housing assembly	1
	12A	78-01		071753 (9008000-0133)	Lip seal	2
	12B	78-01		016279 (9001465-0002)	Needle bearing	2
	23	78-01		051912 (9510295)	Bearing kit	1

2	12	78-01		3103451	Housing assembly	1
	12B	78-01		016279 (9001465-0002)	Needle bearing	2
	23	78-01		051912 (9510295)	Bearing kit	
	53	78-01		9510416	Trunnion bushing kit	2
	53A	78-01		555649 (9004100-1200)	O-ring	4

Bypass valve

1	26	78-01		611517 (9004100-0120)	O-ring	1
	27	78-01		071472 (9006110-0120)	Backup ring	1
	28	78-01		507517 (3102829)	Bypass valve	1

2				None		
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Manifold valve

1				None		
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2	A	78-01		9510675-GXXG	Manifold kit	1
	32	78-01		002311 (9009610-3459)	Washer	4
	33	78-01		082578 (9007200-3134)	Screw	4
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	207	78-01		001511 (9005100-4400)	Plug	2
	207A	78-01		001123 (9004201-2500)	O-ring	2
	212	78-01		9510650-G	High pressure relief valve kit	2
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2

Displacement

1	18	78-01		016162 (9007774-0014)	Screw	1
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2	18	78-01		760157 (9007774-0015)	Screw	1
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3	18	78-01		9007774-0016	Screw	1
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Variable motor

Overhaul seal kit

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
				9510355-0009	Overhaul seal kit	1
	10	78-01		050559 (3102400)	End cap gasket	1
	12A	78-01		071753 (9008000-0133)	Lip seal	2
	19	78-01		016170 (9009630-3100)	Seal washer	1
	21	78-01		724351 (9008000-0143)	Shaft seal	1
	26	78-01		611517 (9004100-0120)	O-ring	1
	27	78-01		071472 (9006110-0120)	Backup ring	1
	21A	78-01		677153 (9510048)	High pressure relief valve seal kit	2
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2

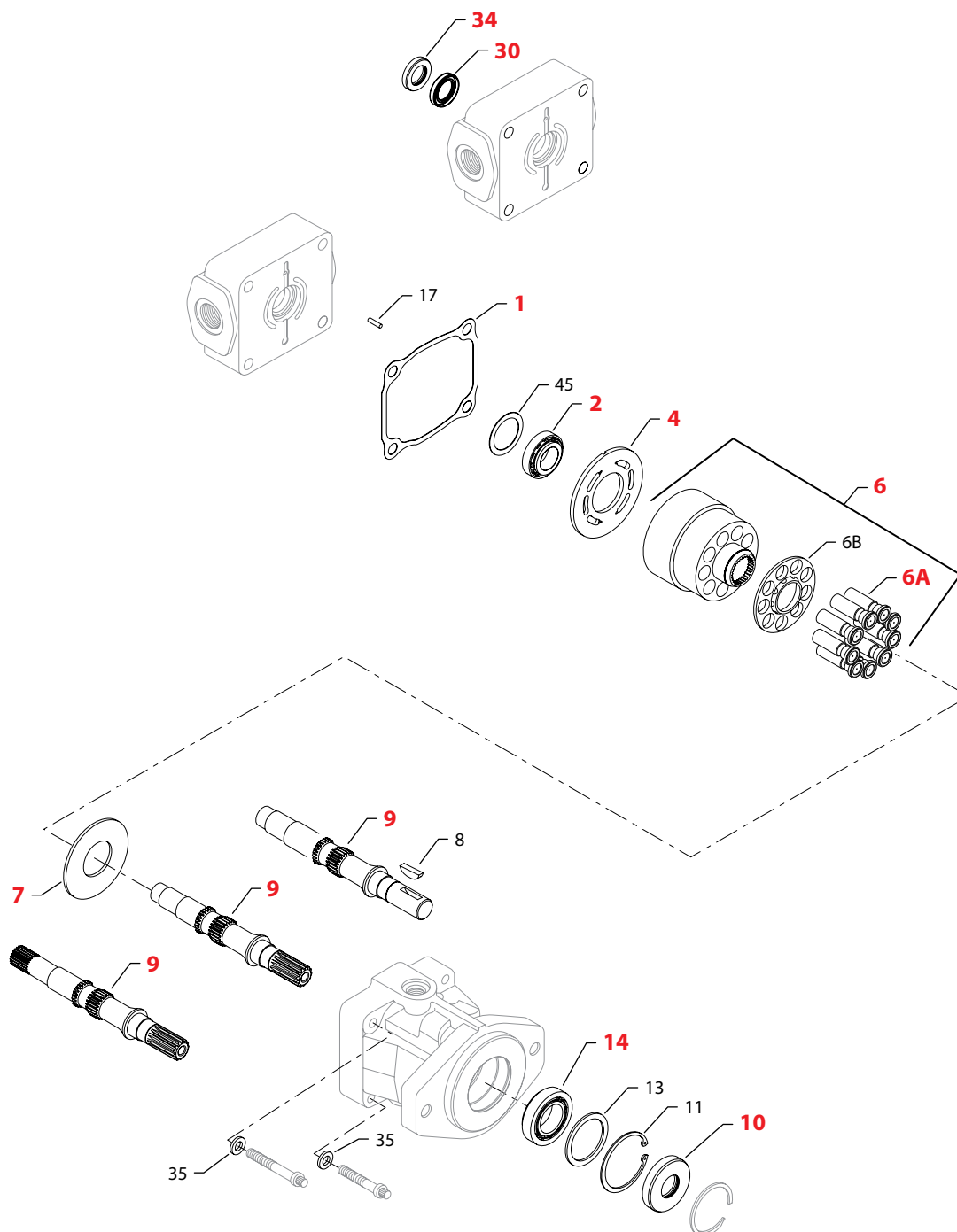


Fixed motor
model option code

Mode number	Option groups					
	Shaft seal	Shaft	End cap	Housing	Bypass	Manifold valve
18-3003	1	1	1	1	1	1
18-3005	1	2	1	1	1	1
18-3008	1	3	1	1	1	1
18-3009	1	4	2	1	2	1
18-3011	1	2	3	1	1	2
18-3013	1	2	3	1	1	3
18-3014	1	2	4	1	2	5
18-3016	1	1	4	1	2	5
18-3019	2	5	5	1	2	1
18-3020	1	6	6	1	3	1
18-3021	1	3	3	1	1	4
18-3023	1	2	4	1	2	4
18-3027	1	6	6	2	3	1
18-3029	1	6	4	2	2	5
18-3031	2	7	5	2	2	1
18-3032	1	3	4	1	2	3
18-3035	1	2	6	1	3	1
18-3037	1	8	6	2	3	1
18-3038	1	9	1	3	1	1
18-3039	1	1	3	1	1	6
18-3040	1	2	4	1	2	5
18-3041	1	4	2	3	2	1
18-3042	1	2	1	3	1	1
18-3043	1	4	7	3	2	5
18-3044	1	2	3	3	1	5
18-3045	2	5	5	3	2	1
18-3046	1	2	1	3	1	1
18-3047	1	6	4	1	2	6



Fixed motor



E100 622E

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



Fixed motor

Common parts

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	1	78-01		051177 (3102224)	Gasket	1
	2	78-01		051920 (9510294)	Bearing kit, rear	1
	4	78-01		051581 (3102161)	Valve plate	1
	6	78-01		326124 (3103354)	Cylinder block kit (SB-1987-003)	1
	6A	78-01		631598 (3102204)	Piston assembly	9
	6B	78-01		078923 (3102750)	Slipper retainer	1
	7	78-01		051631 (3102058)	Thrust plate	1
	11	78-01		016238 (9006201-0212)	Retaining ring	1
	13	78-01		016246 (9009625-9904)	Washer	1
	14	78-01		051912 (9510295)	Bearing kit, front	1
	17	78-01		016220 (9004800-1908)	Pin	1
	35	78-01		002337 (9009611-4778)	Washer	4
	45	78-01		523563 (3103007)	Shim	A/R

Shaft seal

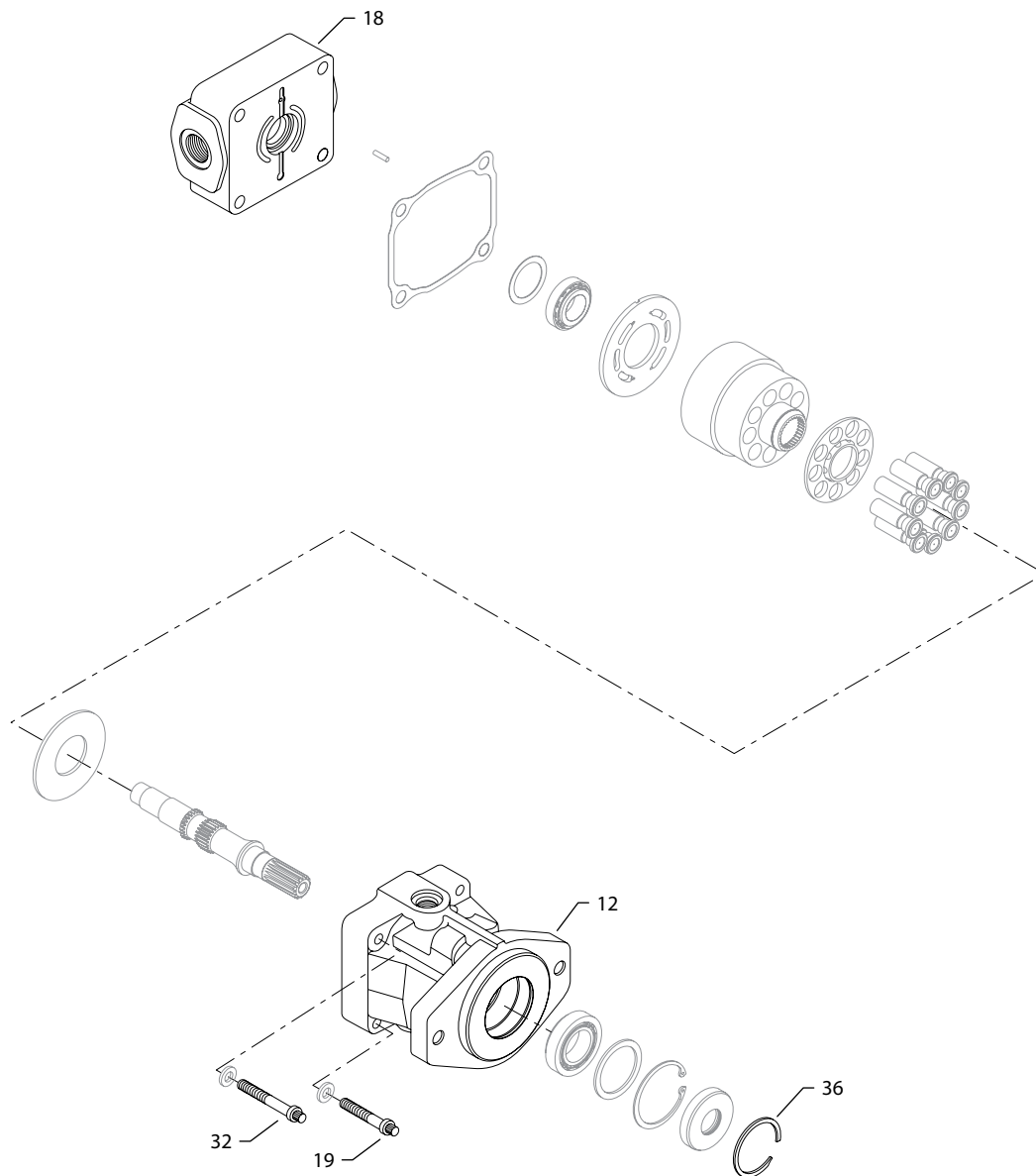
1	10	78-01		724351 (9008000-0143)	Shaft lip seal	1
2	10	78-01		724351 (9008000-0143)	Shaft lip seal	1
	30	78-01		015974 (5000174)	Shaft lip seal	1
	34	78-01		087585 (9008000-0064)	Shaft lip seal	1

Shaft

1	8	78-01		071266 (9003326-0008)	Key	1
	9	78-01		552786 (3102735)	Shaft	1
2	9	78-01		333500 (3103429)	Shaft	1
3	9	78-01		335034 (3103430)	Shaft	1
4	9	78-01		338210 (3103427)	Shaft	1
5	9	78-01		349654 (3103428)	Shaft	1
6	9	78-01		509224 (3102765)	Shaft	1
7	9	78-01		521955 (3102869)	Shaft	1
8	8	78-01		532432 (9003310-2514)	Key	1
	9	78-01		3103124	Shaft	1
9	9	78-01		557462 (3103237)	Shaft	1



Fixed motor



E100 623E

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



Fixed motor

End cap

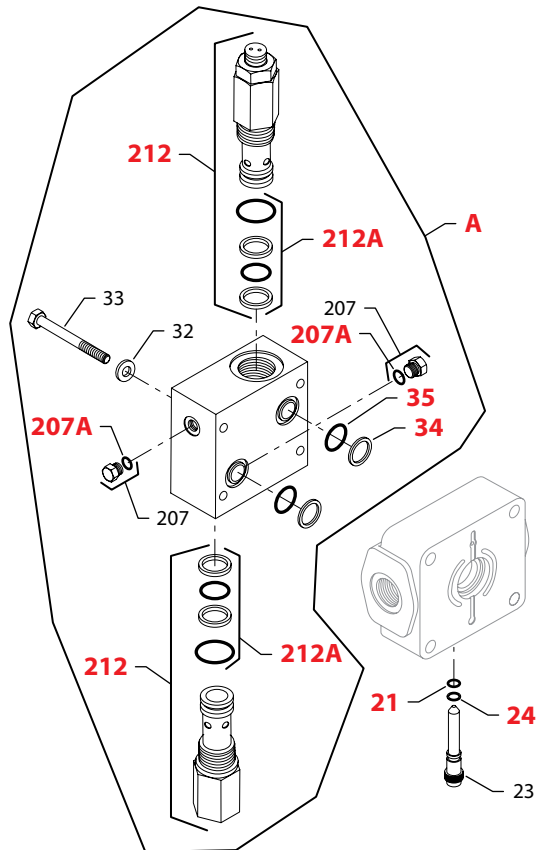
Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	18	78-01		505529 (3102830)	End cap	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		061994 (9007300-4432)	Screw	2
2	18	78-01		071225 (3102410)	End cap	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		061994 (9007300-4432)	Screw	2
3	18	78-01		501759 (3102832)	End cap	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		061994 (9007300-4432)	Screw	2
4	18	88-28		501759 (3102832)	End cap	1
	18	78-01	88-27	3102580	Gasket	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		061994 (9007300-4432)	Screw	2
5	18	78-01		3102619	End cap	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		555540 (9007575-0004)	Screw	2
6	18	78-01		505529 (3102830)	End cap	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		061994 (9007300-4432)	Screw	2
7	18	78-01		509885 (3102899)	End cap	1
	19	78-01		061994 (9007300-4432)	Screw	2
	32	78-01		061994 (9007300-4432)	Screw	2

Housing

1	12	87-39		333492 (3103407)	Housing	1
	12	78-01	87-38	145649 (3102838)	Housing	1
	36	87-39		554998 (9006251-0218)	Retaining ring	1
	36	78-01	87-38	083634 (9006251-0212)	Retaining ring	1
2	12	87-44		3103448	Housing	1
	12	78-01	87-43	3102870	Housing	1
	36	87-44		554998 (9006251-0218)	Retaining ring	1
	36	78-01	87-43	083634 (9006251-0212)	Retaining ring	1
3	12	78-01		333492 (3103407)	Housing	1
	36	78-01		554998 (9006251-0218)	Retaining ring	1



Fixed motor



E100 624E

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



Fixed motor

Bypass valve

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
1	21	78-01		611517 (9004100-0120)	O-ring	1
	23	78-01		507517 (3102829)	Bypass valve	1
	24	78-01		071472 (9006110-0120)	Backup ring	1

2				None		
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3	21	87-46		611517 (9004100-0120)	O-ring	1
	21	78-01	87-45	None		
	23	87-46		507517 (3102829)	Bypass valve	1
	23	78-01	87-45	None		
	24	87-46		071472 (9006110-0120)	Backup ring	1
	24	78-01	87-45	None		

Manifold valve

1				None		
---	--	--	--	------	--	--

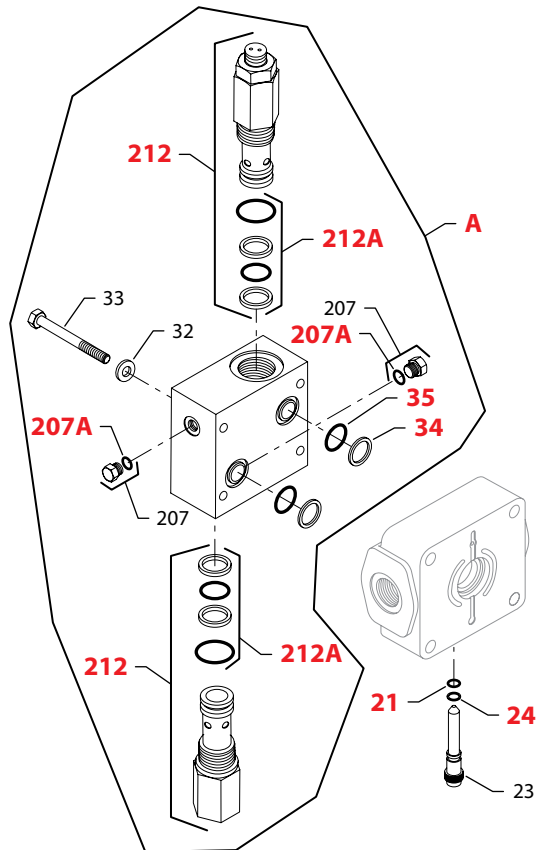
2	A	78-01		9510675-FXXF	Manifold kit	1
	32	78-01		002311 (9009610-3459)	Washer	4
	33	78-01		082578 (9007200-3134)	Screw	4
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	207	78-01		001511 (9005100-4400)	Plug	2
	207A	78-01		001123 (9004201-2500)	O-ring	2
	212	78-01		9510650-F	High pressure relief valve kit	2
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2

3	A	78-01		9510675-GXXG	Manifold kit	1
	32	78-01		002311 (9009610-3459)	Washer	4
	33	78-01		082578 (9007200-3134)	Screw	4
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	207	78-01		001511 (9005100-4400)	Plug	2
	207A	78-01		001123 (9004201-2500)	O-ring	2
	212	78-01		9510650-G	High pressure relief valve kit	2
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2

4	A	78-01		9510675-JXXJ	Manifold kit	1
	32	78-01		002311 (9009610-3459)	Washer	4
	33	78-01		082578 (9007200-3134)	Screw	4
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	207	78-01		001511 (9005100-4400)	Plug	2
	207A	78-01		001123 (9004201-2500)	O-ring	2
	212	78-01		9510650-J	High pressure relief valve kit	2
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2



Fixed motor



E100 624E

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

Fixed motor

Option

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
5	A	78-01		9510675-HXXH	Manifold kit	1
	32	78-01		002311 (9009610-3459)	Washer	4
	33	78-01		082578 (9007200-3134)	Screw	4
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	207	78-01		001511 (9005100-4400)	Plug	2
	207A	78-01		001123 (9004201-2500)	O-ring	2
	212	78-01		9510650-H	High pressure relief valve kit	2
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2

4	A	78-01		9510675-EXXE	Manifold kit	1
	32	78-01		002311 (9009610-3459)	Washer	4
	33	78-01		082578 (9007200-3134)	Screw	4
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	207	78-01		001511 (9005100-4400)	Plug	2
	207A	78-01		001123 (9004201-2500)	O-ring	2
	212	78-01		9510650-E	High pressure relief valve kit	2
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2

Overhaul seal kit

				9510355-0001	Overhaul seal kit, MF without thru shaft	1
	1	78-01		051177 (3102224)	End cap gasket	1
	10	78-01		724351 (9008000-0143)	Lip seal	1
	21	78-01		611517 (9004100-0120)	O-ring	1
	24	78-01		071472 (9006110-0120)	Backup ring	1
	34	78-01		052738 (9006150-1130)	Backup ring	2
	35	78-01		052746 (9004101-1130)	O-ring	2
	36	78-01	87-43	083634 (9006251-0212)	Retaining ring	1
	212A	78-01		677153 (9510048)	High pressure relief valve seal kit	2

				9510355-0011	Overhaul seal kit, MF with thru shaft	1
	1	78-01		051177 (3102224)	End cap gasket	1
	10	78-01		724351 (9008000-0143)	Lip seal	1
	30	78-01		015974 (5000174)	Lip seal	1
	34	78-01		087585 (9008000-0064)	Shaft lip seal	1
	36	78-01	87-43	083634 (9006251-0212)	Retaining ring	1

**Notes**


Service bulletin:
SB-1987-003
Products affected

Series 18 variable displacement pumps and fixed displacement motors

Subject

Cylinder block change

Description

As part of Danfoss' product improvement program, a new cylinder block has been designed for series 18 variable displacement pumps and fixed displacement motors.

The new cylinder block has a new part number, but does not have any special marking for identification. The new cylinder block can be recognized by a somewhat darker (black) color of the block OD.

The model number of the pump and/or motor will not change. Configuration control is accomplished by serial number control.

If cylinder block replacement is necessary during repair of the models shown, the new cylinder block must be used.

Models affected

18-2097
 18-2098
 18-2099
 18-3040

Serial numbers

18-2097, 04-87-06-xxxxx and after will have 3103153 blocks
 18-2098, 04-86-45-xxxxx and after will have 3103153 blocks
 18-2099, 04-87-09-xxxxx and after will have 3103153 blocks
 18-3040, 04-86-45-xxxxx and after will have 3103153 blocks

Part numbers affected

Item Description	Old Part Number	New Part Number
Cylinder block	3102053	3103153
Cylinder block kit	3102789	326124 (3103354)

Parts disposition

- Interchangeable
- Use parts in stock


**Service bulletin:
SB-1988-008**
Products affected

Series 18 variable pumps and motors

Subject

Product change

Description

Danfoss has made several changes to series 18 single and tandem pumps and fixed motors during the third and fourth quarter of 1987.

The first change relates to the high pressure relief valve and end cap area. Older pumps all had two ball type charge check valves, and additionally, some pumps had two optional high pressure relief valves. New high pressure relief valve equipped pumps include valves that do both the high pressure relief and charge check function. New pumps without the high pressure relief option include check valves that appear similar to the high pressure relief/check valves. The part numbers of the pump end caps and relief valve assemblies have changed and the new and old style end caps, relief/check and check only valves, their springs, and their plugs are not interchangeable. New end caps can be installed on older pumps, however, new style relief/check or check only valves, spring, and plugs will also have to be used.

Figure 1 shows differences in general appearance of the new high pressure relief/check valve versus the old high pressure relief valves. The high pressure relief/check valves are located under plugs (1) and (2) in figures 2, 3, and 4. Older pumps with high pressure relief valves had plugs located at position "X" on figure 3 and 4. The new plug has moved 2.8" from the old plugs.

The second change has affected system pressure gauge ports. Figures 2 and 3 show typical gauge port locations for new single pumps and figure 4 shows typical gauge port locations for new tandem pumps.

The third change affected the sealing between the front and rear pump interface on tandems. This joint changed from a gasket to an O-ring seal. For service parts requirements, the gaskets must be used on older pumps and the O-ring on newer pumps.

The fourth change added a drilled and tapped hole to the end of the drive shaft on many series 18 pumps and motors. The thread is M8 x 1.25-6H and thread depth is minimum of .63 inches. The fifth change added a larger diameter retaining ring to retain the fixed motor shaft seal. Both the snap ring and the groove in the motor housing changed and different snap rings are required for new and old housings.

The last change affects the tandem pump end caps and the tube which carries charge flow to the front pump end cap. On new pumps, the position of the threaded port in the front pump end cap, where the charge tube is secured, moved approximately .75" closer to the input shaft. The threaded port for the tube did not move in the rear end cap. Therefore, new tandem pumps have a .75" longer tube than older pumps. Also, if an older pump is repaired and a new style end cap is installed on the front pump, a new tube must also be used.

All part number and serial number effectivity for changes described in this bulletin can be found in the series 18 service parts manual, BLN-2-41635.

Service bulletin:
SB-1988-008

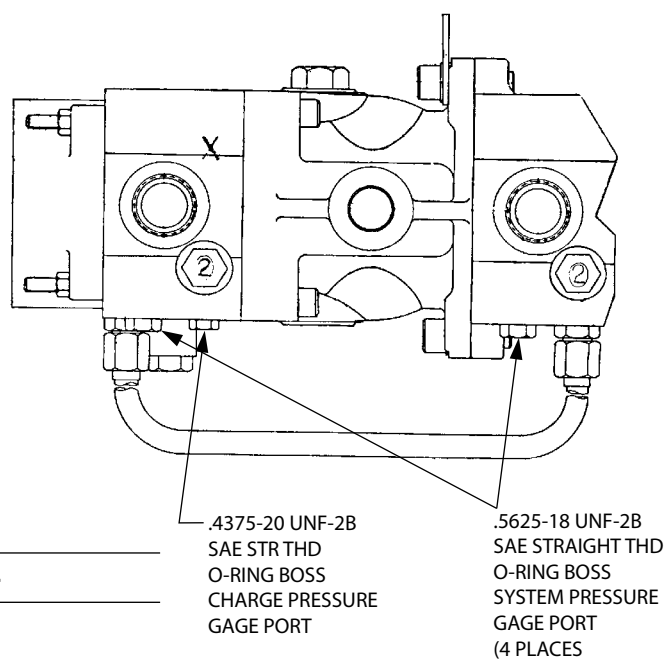
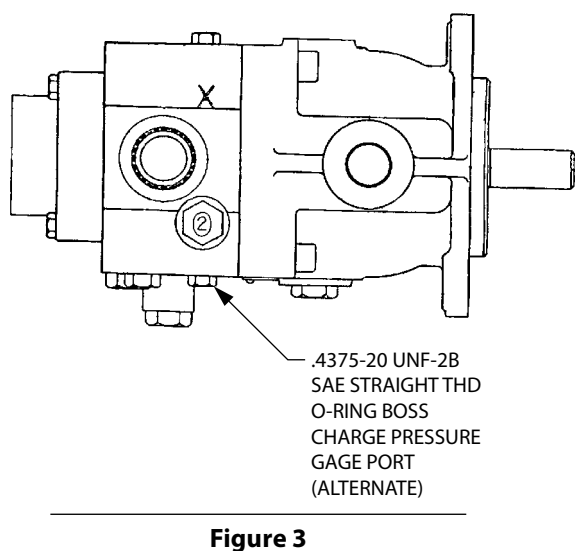
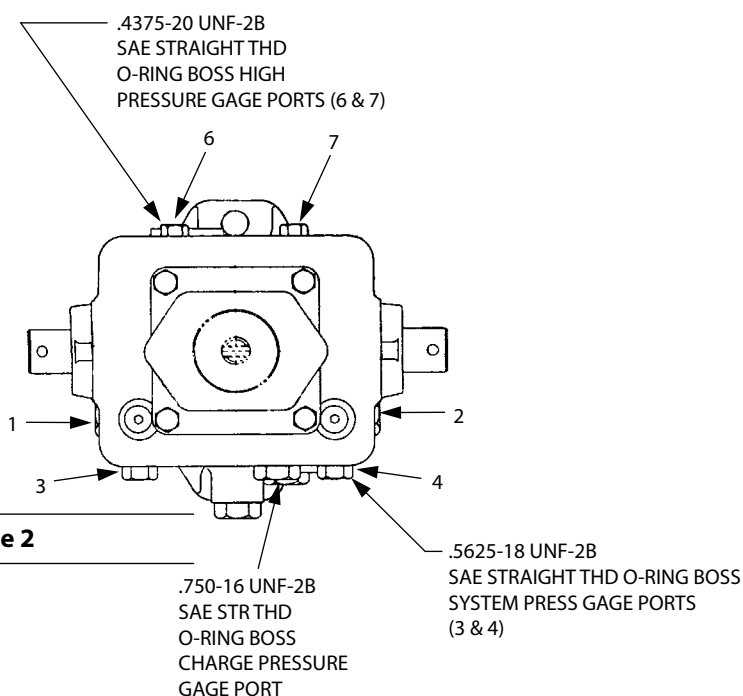
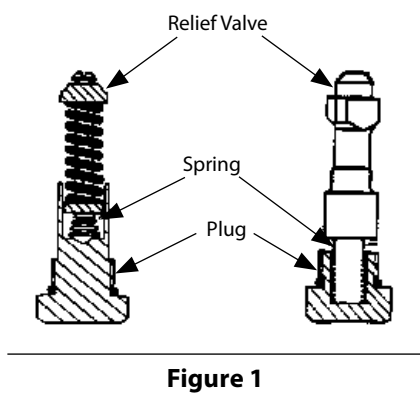
Models affected 18-2xxx, 91-18xx, 18-3xxx, 18-4xxx

Serial numbers See service parts manual BLN-2-41635.

Part numbers affected See service parts manual BLN-2-41635.

Parts disposition

■ Non-interchangeable




Service bulletin:
SB-1992-010
Products affected

Series 15 and series 18

Subject

Seal replacement

Description

Many series 15 and 18 pumps, motors, and transmissions have shaft and trunnion lip seals that are retained in their bores by a press fit instead of being captured by a retaining ring or shoulder.

When replacing this type of seal, it is a good practice to clean the seal bore with Loctite Primer T and apply a thin coat of Loctite RC680 retaining compound to the seal O.D. before installation. The addition of Loctite minimizes the potential for seal leaks at the seal O.D. and increases the seal "blow out" force.

Caution must be exercised to prevent the loctite from getting on the seal lip or into the transmission bearings.

Models affected

Series 15 and 18 pumps, motors, and transmissions

Serial numbers

Not applicable

Part numbers affected

Not applicable

Parts disposition

■ Not applicable

**Notes**



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