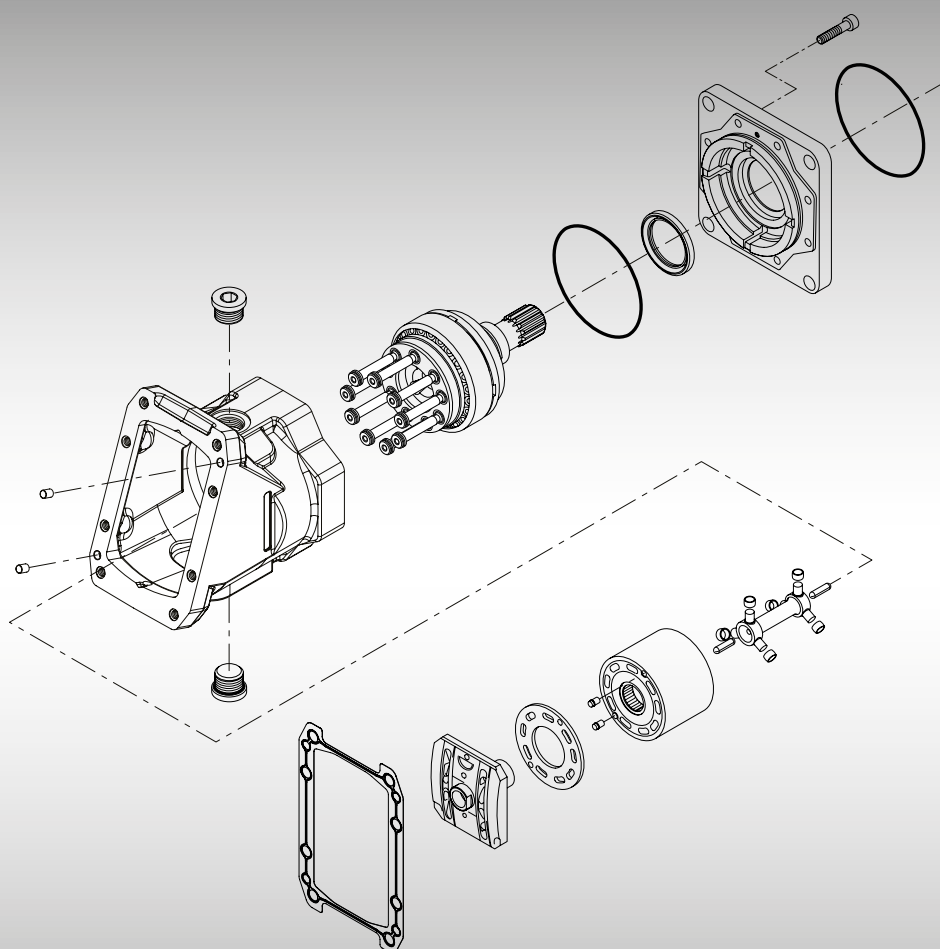




Parts Manual

Variable Displacement Motors Series 51, 60cc





Contents

General Information	Service parts identification	5
	Nameplate	5
	Date code	6
	Service bulletins	6
	Procedure to identify a part	6
Order code	Order code	7
Cartridge flange	Special hardware	8-11
DIN flange	Special hardware	12-13
SAE flange	Special hardware	14-15
Maximum displacement	Maximum displacement common parts	16-17
	Maximum displacement	16-17
End cap	Axial ports	18-19
	Side ports	20-23
Threshold/range	Threshold/range	24-25
Charge relief	Charge relief	26-27
Output shaft	Shaft	28-29
Control	Electric proportional (D7 and D8)	30-31
	Electric 2-position (E1 and E2)	32-33
	Electric proportional (EP, EQ, ER, and ES)	34-35
	Electric 2-position (F1 and F2)	36-37
	Hydraulic porportional with electric override (H1 and H2)	38-39
	Electric proportional w/pressure reducing (H3 and H4)	40-41
	Hydraulic proportional (HA and HP)	42-43
	Hydraulic proportional (HS and HZ)	44-45
	Hydraulic porportional with electric override (J1)	46-47
	Hydraulic proportional (JA)	48-49
	Hydraulic porportional with electric override (K1 and K2)	50-51
	Electric proportional (L1, L2, L3, L4 and L7)	52-53
	Hydraulic 2-position (N2)	52-53
	Pressure compensator (PC)	54-55
	Electric 2-position with solenoid (T9)	56-57
	Pressure compensator (TA)	56-57
	Hydraulic 2-position (TH)	56-57
	Electric 2-position (U1 and U2)	58-59
	Electric proportional (Y7)	58-59

Contents

Servo supply	Servo pressure supply	60-67
Loop flushing system	Loop flushing	68-69
Control ramp	Control ramp	70-71
Orifice	Orifice	72-87
Minimum displacement	Minimum displacement	86-87
Pcor adjuster	PCOR adjuster	86-87
Overhaul seal kit	Overhaul seal kit	88
Service bulletins	SB-1993-006 (end cap gasket)	89
	SB-1995-013 (threshold adjustment screw)	90
	SB-1996-005 (end cap and valve segment)	91-92
	SB-1997-009 (servo piston seal ring)	93
	SB-1997-030 (valve segment)	94
	SB-1998-035 (incorporate speed sensor in cartridge motors)	95
	SB-1999-059 (thread change on DIN shaft assemblies)	96
	SB-2000-044 (loop flushing spring and spring seat change)	97
	SB-2001-015 (synch shaft kit)	98
	SB-2002-001 (end cap/control interface seal)	99-100
	SB-2004-004 (end cap gasket)	101
	SB-2005-012 (DIN flange/lip seal)	102
	SB-2009-006 (bearing housing redesign)	103



General information

Service parts identification

The following information and procedure is used to identify the module group, item number, manufacture date, part number, and part name of the parts included in the Series 51 60cc variable displacement motors.

The parts listed include all parts which may be used when performing either "Minor Repairs", "Major Repairs" or "Conversions" on the Series 51 60cc motors.

Nameplate

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

Model Code

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

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). "N" indicates the unit was originally assembled in Neumuenster, Germany.

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

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

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



General information

Date code

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

EXAMPLE: The service part desired is Item L035.

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Usage
C	L035	00-25		515752	Bearing housing (SB-2000-049)	1
	L035	92-07	00-24	743831	Bearing housing	1

All units using this order code with a date code of 92-07 and up to and including 00-24, must use part number "743831". All units with a date code of 00-25 and newer must use part number "515752".

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 51 motors result 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 motors.)

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: 664524 (9005110-9000), customers would order 9005110-9000 if ordering the part in the United States.)

Example of a part identification

The nameplate on a Series 51 motor has an Order Code of 51V060 R S1 N HZ B1 A N C2 NNN 026 AA E4 03 00. Use the following procedures to determine the part number of the drive shaft used on this motor.

1) Referring to the shaft module in the Order Code (see page 7), the shaft option for this motor is identified by the code "S1". (51V060 R **S1** N HZ B1 A N C2 NNN 026 AA E4 03 00)

2) Referring to the Service Parts List, find the shaft group. Next find the order code that relates to this unit, which is "S1". The shaft is found to be item QL10 and part number 11100478 if a speed ring is not required. The shaft is found to be item QL11 and part number 11100479 if a speed ring is required.

**Notes**

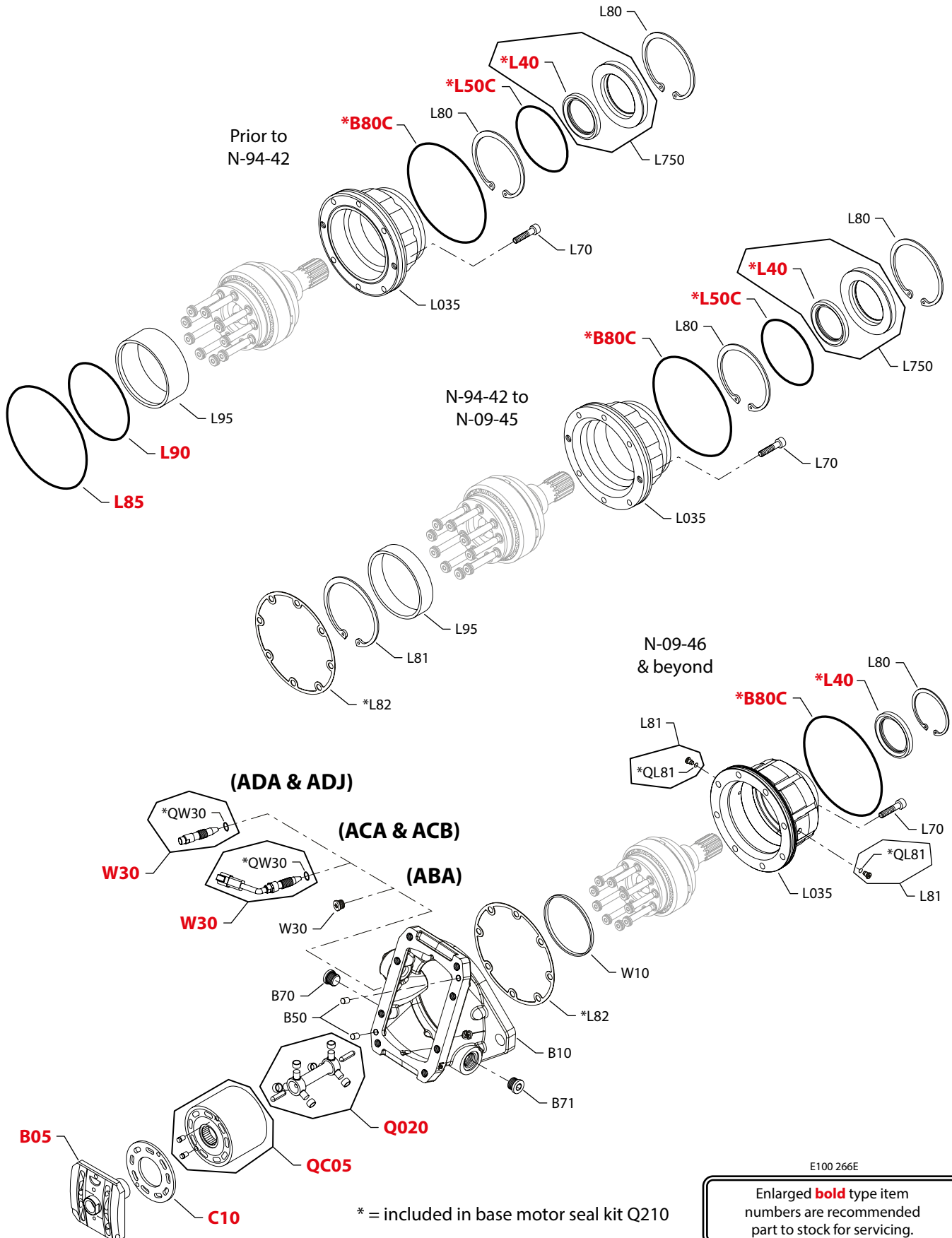
Order code

	5	1	V	0	6	0	G	L	F	M	N	J	S	T	W	Y	P	K	V	Z	
Product	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Flange	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Frame size	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
End cap	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Shaft	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Maximum displacement	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Control	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Servo pressure supply	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Threshold/range	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Control ramp	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Orifice	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Special hardware	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Minimum displacement	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Loop flushing	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Charge relief	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
Threshold setting	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N
PCOR setting	5	1	V	0	6	0	R	S	1	N	H	Z	B	1	A	N	C	2	N	N	N

P100 542E



Variable Displacement Motor



E100 266E

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Cartridge flange common parts

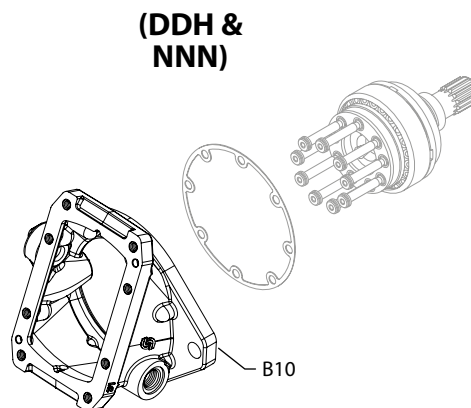
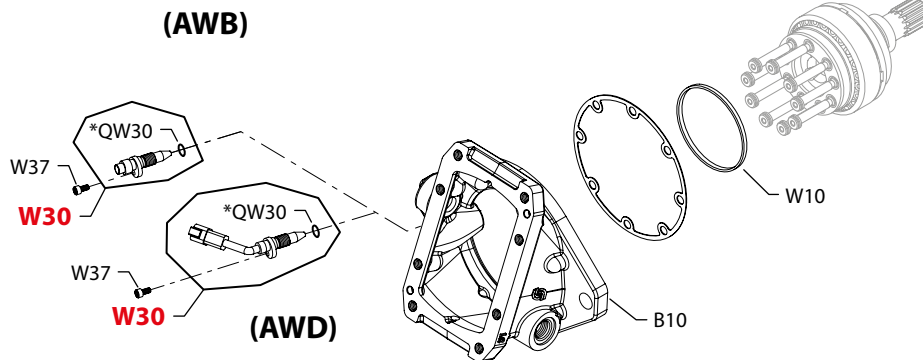
Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
C	B05	92-07		508197	Valve segment (SB-1996-005 & SB-1997-030)	1
	B50	92-07		9004800-3708	Pin	2
	B70	92-07		664524 (9005110-9000)	Plug assembly	1
	B71	92-07		664524 (9005110-9000)	Plug assembly	1
	B80C	92-07		726927	O-ring	1
	C10	92-07		515366	Bearing plate	1
	L035	09-46		11038245	Bearing housing (SB-2009-006)	1
	L035	94-42	09-45	11009204	Bearing housing (SB-1998-035)	1
	L40	09-46		519021	Lip seal (SB-2009-006)	1
	L40	92-07	09-45	673525 (9008000-0114)	Lip seal	1
	L50C	92-07	09-45	501879	O-ring (SB-2009-006)	1
	L70	92-07		710855	Screw	8
	L80	09-46		915280	Retaining ring (SB-2009-006)	1
	L80	92-07	09-45	392456	Retaining ring	2
	L81	09-46		11056747	Shaft log (SB-2009-006)	2
	L81	94-42	09-45	501120	Retaining ring (SB-1998-035)	1
	L82	94-42		501019	Gasket	1
	L85	92-07	94-41	916759	O-ring (SB-1998-035)	1
	L90	92-07	94-41	279570	O-ring (SB-1998-035)	1
	L95	94-42	09-45	501116	Distance ring (SB-1998-035 & SB-2009-006)	1
	L95	92-07	94-41	741702	Distance ring	1
	L750	92-07	09-45	510482	Seal carrier assembly (SB-2009-006)	1
	Q020	92-07		517308	Synch shaft kit (SB-2001-015)	1
	QC05	92-07		732719	Cylinder block assembly	1
	QL81	09-46		039297 (9004201-1200)	O-ring	2

Special hardware

ABA	B10	92-07		501103	Housing with speed sensor port	1
	W10	92-07		11132980	Speed ring	1
	W30	92-07		140644	Plug assembly	1
ACA	B10	08-26		501103	Housing with speed sensor port	1
	QW30	08-26		085043 (9004201-3700)	O-ring	1
	W10	08-26		11132980	Speed ring	1
	W30	08-26		KPPG23408	Speed sensor	1
ACB	B10	07-08		501103	Housing with speed sensor port	1
	QW30	07-08		085043 (9004201-3700)	O-ring	1
	W10	07-08		11132980	Speed ring	1
	W30	07-08		KPPG26408	Speed sensor	1
ADA	B10	95-40		501103	Housing with speed sensor port (SB-1998-035)	1
	QW30	95-40		085043 (9004201-3700)	O-ring	1
	W10	95-40		11132980	Speed ring	1
	W30	95-40		KPPG256	Speed sensor	1
ADJ	B10	95-40		501103	Housing with speed sensor port (SB-1998-035)	1
	QW30	95-40		085043 (9004201-3700)	O-ring	1
	W10	95-40		11132980	Speed ring	1
	W30	95-40		KPPG256	Speed sensor	1



Variable Displacement Motor



E103 121E

* = included in base motor seal kit Q210

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

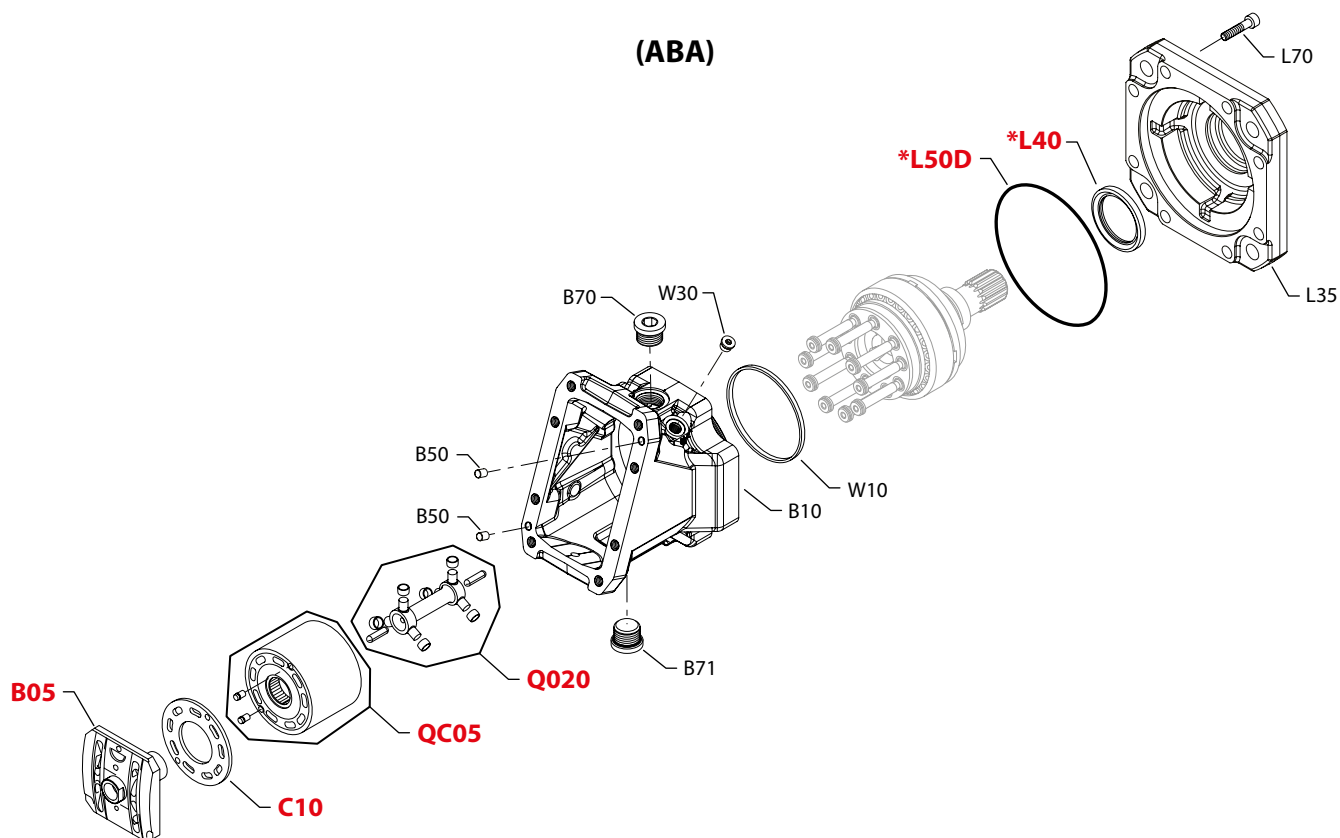

Variable Displacement Motor
Special hardware, cartridge flange

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
AWB	B10	95-40		519235	Housing with speed sensor port	1
	QW30	95-40		085043 (9004201-3700)	O-ring	1
	W10	95-40		11132980	Speed ring	1
	W30	95-40		KPPG356	Speed sensor	1
	W37	95-40		395822 (9007315-0603)	Screw	1
AWD	B10	04-51		519235	Housing without speed sensor port	1
	QW30	04-51		085043 (9004201-3700)	O-ring	1
	W10	04-51		11132980	Speed ring	1
	W30	04-51		KPPG36708B	Speed sensor	1
	W37	04-51		395822 (9007315-0603)	Screw	1
DDH	B10	08-04		505526	Housing without speed sensor port	1
NNN	B10	92-07		505526	Housing without speed sensor port	1

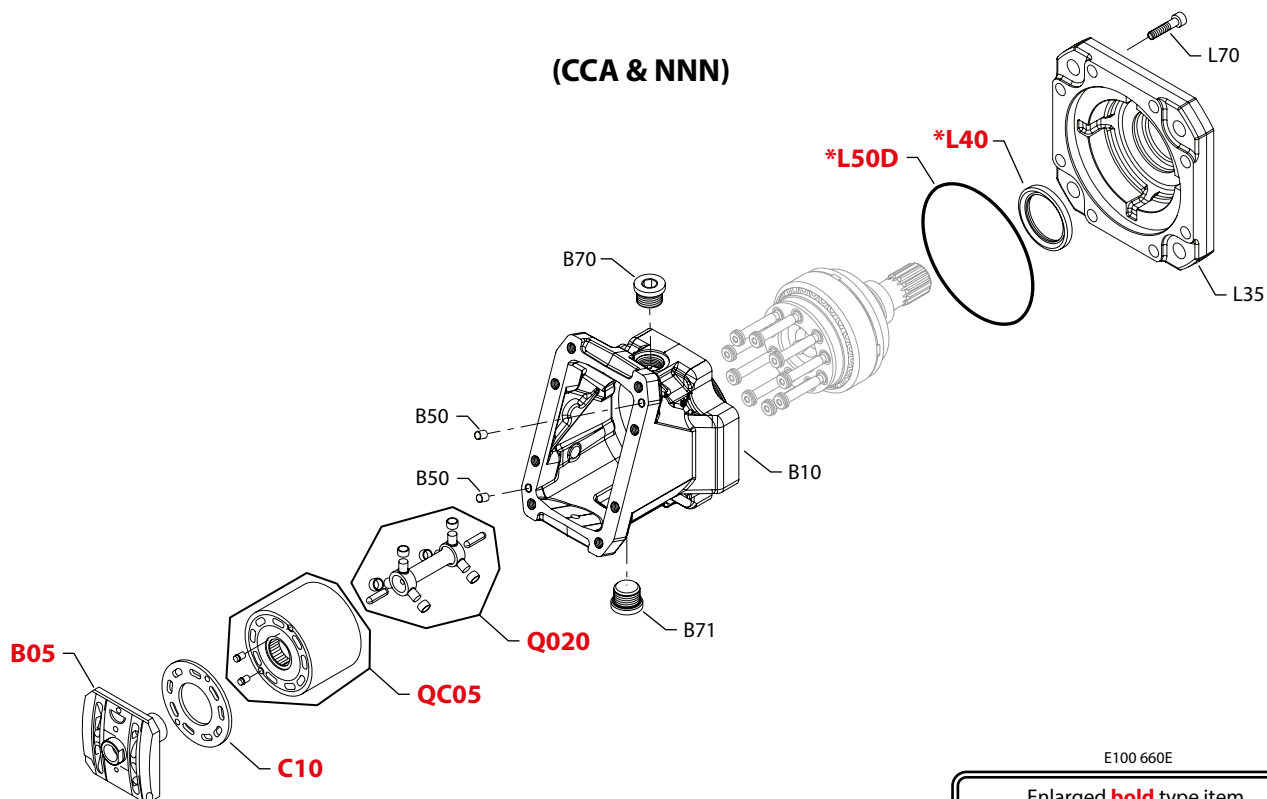


Variable Displacement Motor

(ABA)



(CCA & NNN)



* = included in base motor seal kit Q210

E100 660E

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

Variable Displacement Motor
DIN flange common parts

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
D	B05	92-01		508197	Valve segment (SB-1996-005 & SB-1997-030)	1
	B50	92-01		001289 (9004800-3708)	Pin	2
	B70	92-01		664524 (9005110-9000)	Plug assembly	1
	B71	92-01		664524 (9005110-9000)	Plug assembly	1
	C10	92-01		515366	Bearing plate	1
	L35	92-01		520314	Flange, DIN (SB-2005-012)	1
	L40	06-14		519021	Lip seal (SB-2005-012)	1
	L40	92-01	06-13	673525 (9008000-0114)	Lip seal	1
	L50D	92-01		767962	O-ring	1
	L70	92-01		506969	Screw	8
	QC05	92-01		732719	Cylinder block assembly	1
	Q020	92-01		517308	Synch shaft kit (SB-2001-015)	1

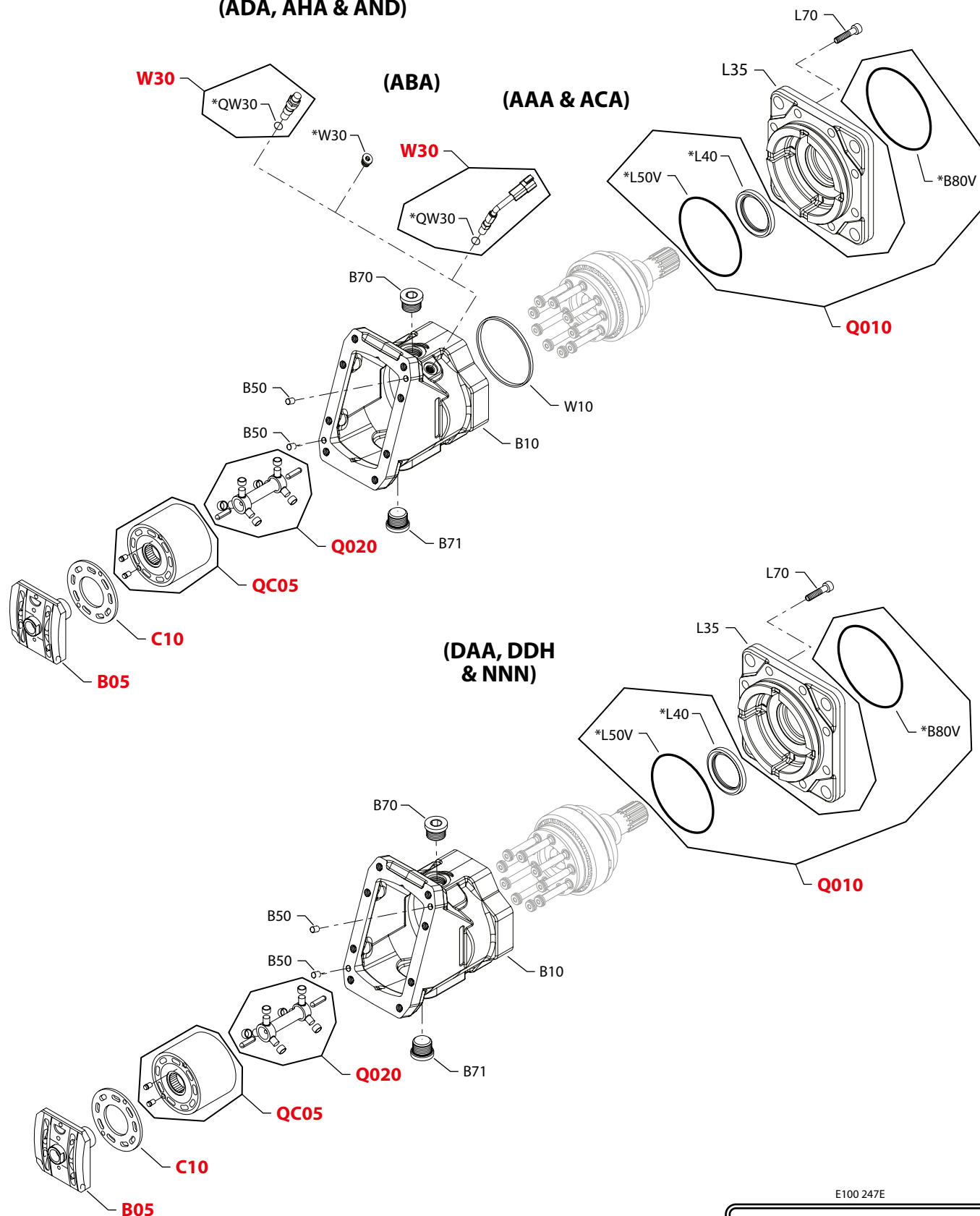
Special hardware, DIN flange

ABA	B10	92-07		504577	Housing with speed sensor port	1
	W10	92-07		11132980	Speed ring	1
	W30	92-07		140644	Plug assembly	1
CCA	B10	05-33		776013	Housing without speed sensor port	1
NNN	B10	92-07		776013	Housing without speed sensor port	1



Variable Displacement Motor

(ADA, AHA & AND)



* = included in base motor seal kit Q210

E100 247E

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

SAE flange common parts

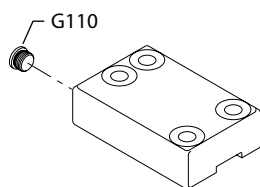
Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
V	B05	92-07		508197	Valve segment (SB-1996-005 & SB-1997-030)	1
	B50	92-07		001289 (9004800-3708)	Pin	2
	B70	92-07		664524 (9005110-9000)	Plug assembly	1
	B71	92-07		664524 (9005110-9000)	Plug assembly	1
	B80V	92-07		930511	O-ring	1
	C10	92-07		515366	Bearing plate	1
	L35	92-07		520318	Flange, SAE (SB-2005-012)	1
	L40	06-14		519021	Lip seal (SB-2005-012)	1
	L40	92-07	06-13	673525 (9008000-0114)	Lip seal	1
	L50V	92-07		917088	O-ring	1
	L70	92-07		506969	Screw	8
	QC05	92-07		732719	Cylinder block assembly	1
	Q010	92-07		771618	Shaft seal kit	1
	Q020	92-07		517308	Synch shaft kit (SB-2001-015)	1

Special hardware

AAA	B10	93-35		504575	Housing with speed sensor port	1
	QW30	93-35		085043 (9004201-3700)	O-ring	1
	W10	93.35		11132980	Speed ring	1
	W30	93-35		KPPG12508	Speed sensor assembly	1
ABA	B10	95-51		504575	Housing with speed sensor port	1
	W10	95-51		11132980	Speed ring	1
	W30	95-51		140644	Plug assembly	1
ACA	B10	94-04		504575	Housing with speed sensor port	1
	QW30	94-04		085043 (9004201-3700)	O-ring	1
	W10	94-04		11132980	Speed ring	1
	W30	94-04		KPPG13408	Speed sensor assembly	1
ADA	B10	94-12		504575	Housing with speed sensor port	1
	QW30	94-12		085043 (9004201-3700)	O-ring	1
	W10	94-12		11132980	Speed ring	1
	W30	94-12		KPPG156	Speed sensor assembly	1
AHA	B10	00-08		504575	Housing with speed sensor port	1
	QW30	00-08		085043 (9004201-3700)	O-ring	1
	W10	00-08		11132980	Speed ring	1
	W30	00-08		KPPG166	Speed sensor assembly	1
AND	B10	05-51		504575	Housing with speed sensor port	1
	QW30	05-51		085043 (9004201-3700)	O-ring	1
	W10	05-51		11132980	Speed ring	1
	W30	05-51		KPPG166	Speed sensor assembly	1
DAA	B10	04-41		503875	Housing without speed sensor port	1
DDH	B10	07-42		503875	Housing without speed sensor port	1
NNN	B10	92-07		503875	Housing without speed sensor port	1

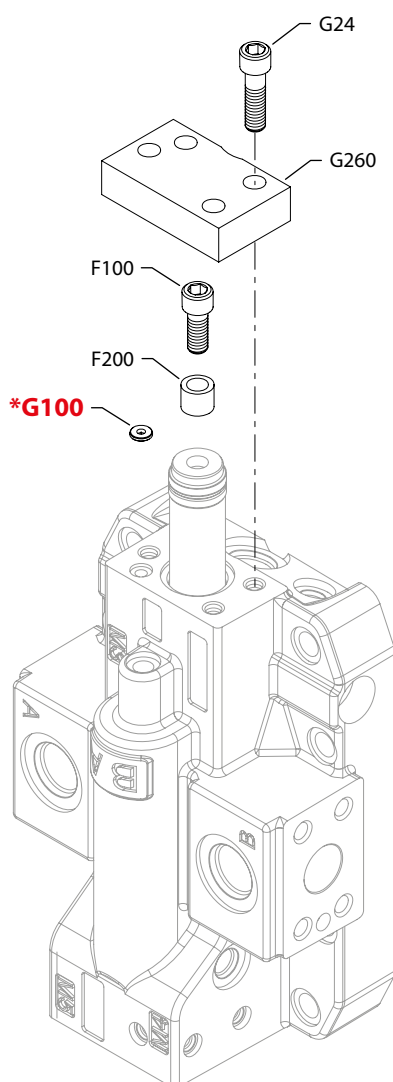


Variable Displacement Motor

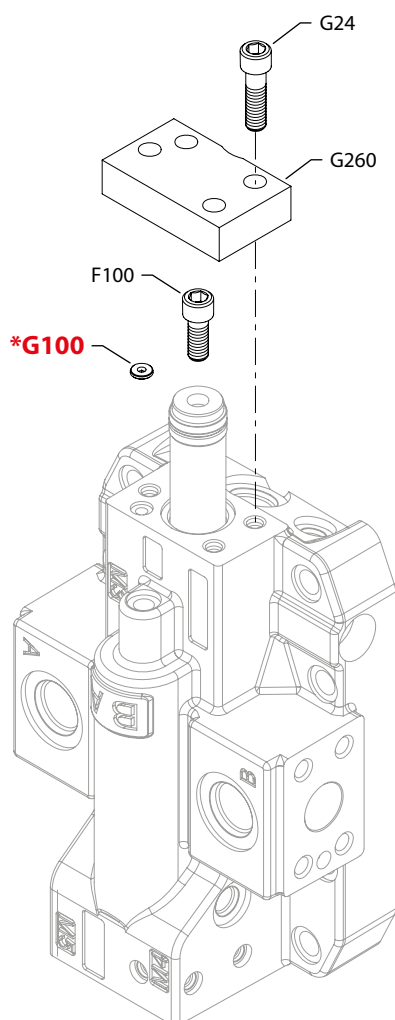


Prior to 03-39

(A, B, C, D, F & G)



(N)



E100 272E

* = included in base motor seal kit Q210

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

Variable Displacement Motor
Maximum displacement common parts

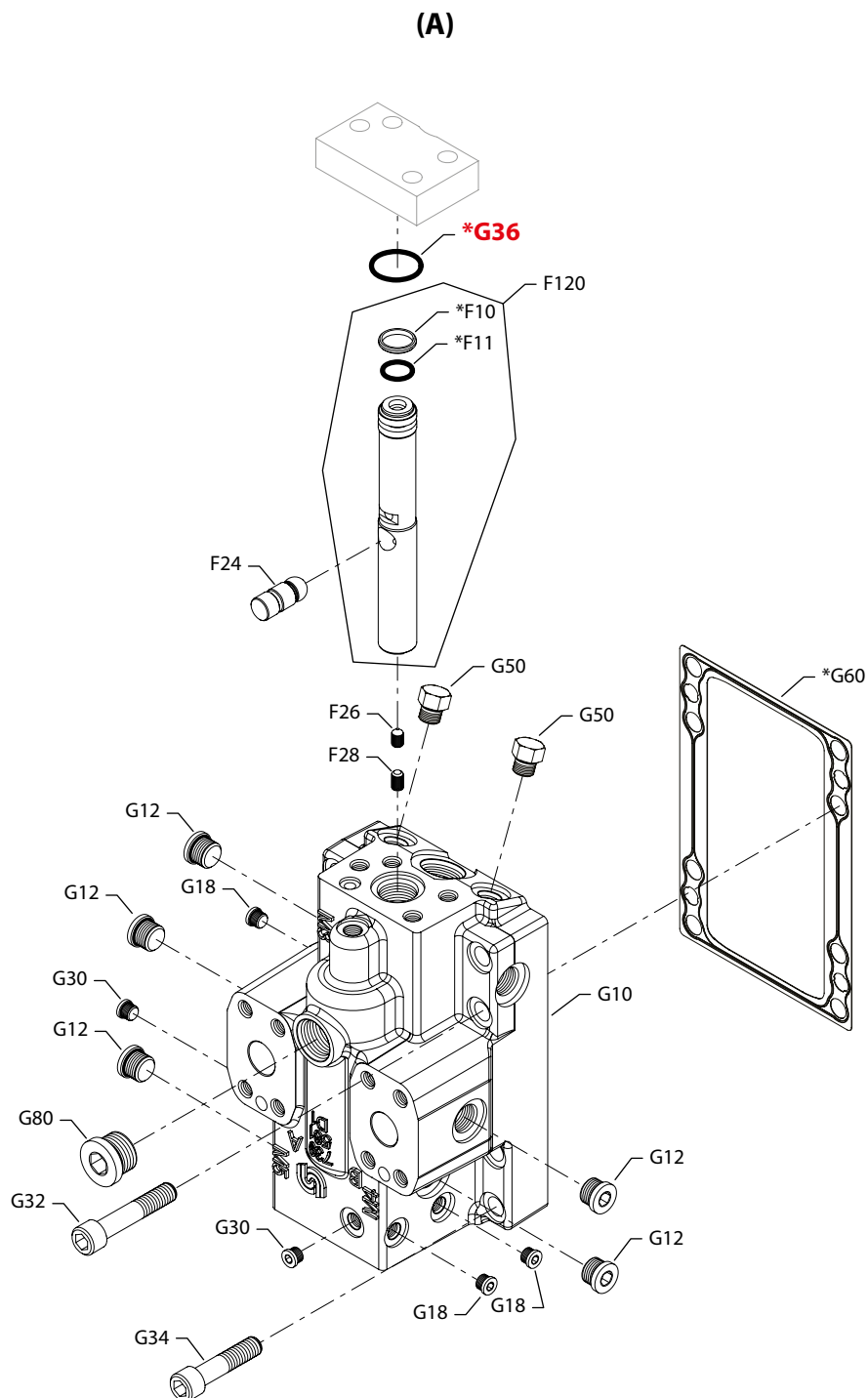
Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
	G24	92-07		727586 (9007314-1008)	Screw	4
	G100	92-07		792739	O-ring, rectangular	1
	G110	92-07	03-38	504519	Plug assembly	1
	G260	92-07		518364	Cover	1

Maximum displacement

A	F100	92-40		506969	Screw, M8 x 25 mm	1
	F200	92-40		780890	Spacer, 3.5 mm	1
B	F100	92-40		506969	Screw, M8 x 25 mm	1
	F200	92-40		781948	Spacer, 6.5 mm	1
C	F100	94-12		746594	Screw, M8 x 30 mm	1
	F200	94-12		500088	Spacer, 13 mm	1
D	F100	94-12		746594	Screw, M8 x 30 mm	1
	F200	94-12		789594	Spacer, 12.5 mm	1
F	F100	94-40		124156	Screw, M8 x 40 mm	1
	F200	94-40		781906	Spacer, 18.5 mm	1
G	F100	92-40		124156	Screw, M8 x 40 mm	1
	F200	92-40		781922	Spacer, 21.5 mm	1
N	F100	92-07		395723 (9007315-0805)	Screw, M8 x 20 mm	1



Variable Displacement Motor



E100 319E

* = included in base motor seal kit Q210

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

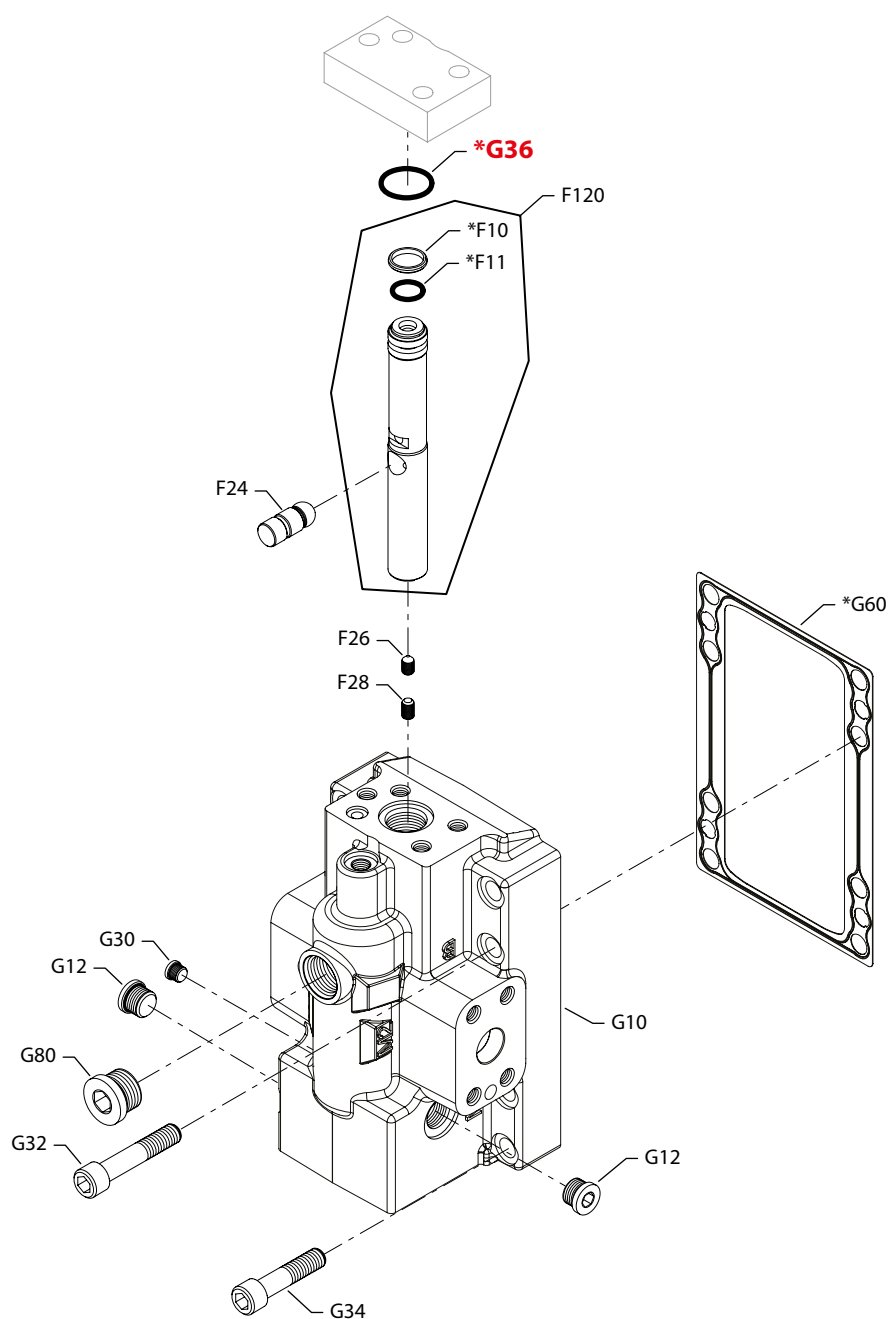
Variable Displacement Motor
End cap, axial ports

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
A	F10	92-19		508131	Servo piston seal ring (SB-1997-009)	1
	F11	92-19		015404	O-ring	1
	F24	92-19		511118	Feedback lever	1
	F26	92-19		733089	Set screw	1
	F28	92-19		010397	Set screw	1
	F120	92-19		510074	Servo piston assembly	1
	G10	92-19		515695	End cap, axial ports (SB-1996-005, SB-2002-001)	1
	G12	95-13		140644	Plug assembly	5
	G12	92-19	95-12	515965 (9005110-5600)	Plug assembly	7
	G18	95-13		11040532	Plug assembly	2
	G18	92-19	95-12	092114 (9007712-0604)	Set screw	2
	G30	92-19		11040532	Plug assembly	2
	G32	92-19		654053	Screw	4
	G34	92-19		672295	Screw	4
	G36	92-19		071878 (9004105-1190)	O-ring	1
	G50	92-19		001511 (9005100-4400)	Plug assembly	2
	G60	92-19		515733	End cap gasket (SB-1993-006 & SB-2004-004)	1
	G80	92-19		315325 (9005110-8700)	Plug assembly	1



Variable Displacement Motor

(G)



E103 122E

* = included in base motor seal kit Q210

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

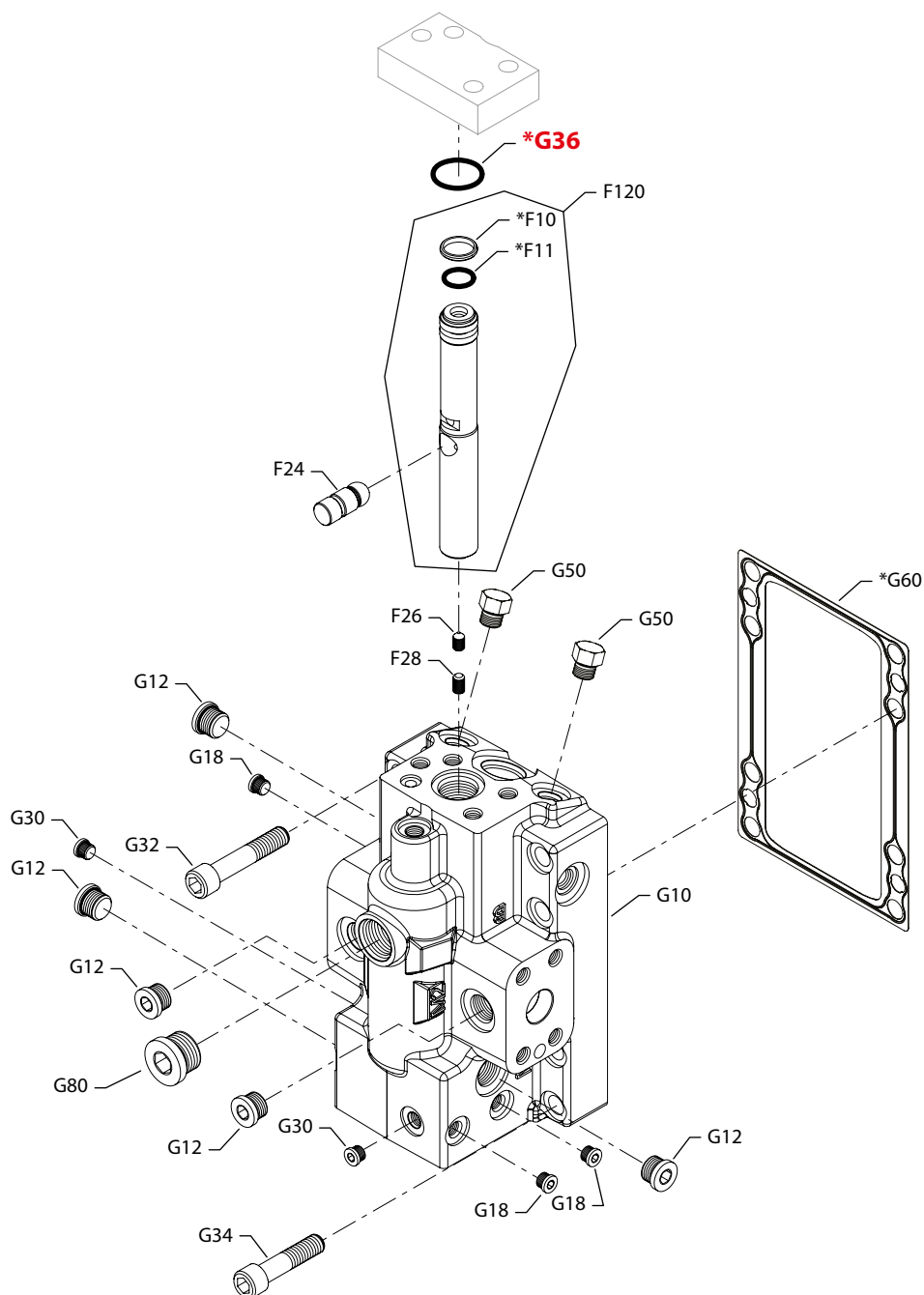

Variable Displacement Motor
End cap, side ports

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
G	F10	96-04		508131	Servo piston seal ring (SB-1997-009)	1
	F11	96-04		015404	O-ring	1
	F24	96-04		511118	Feedback lever	1
	F26	96-04		733089	Set screw	1
	F28	96-04		010397	Set screw	1
	F120	96-04		510074	Servo piston assembly	1
	G10	96-04		508159	End cap, side ports	1
	G12	96-04		140644	Plug assembly	2
	G32	96-04		654053	Screw	4
	G34	96-04		672295	Screw	4
	G36	96-04		071878 (9004105-1190)	O-ring	2
	G60	96-04		515733	End cap gasket (SB-1993-006 & SB-2004-004)	1
	G80	96-04		315325 (9005110-8700)	Plug assembly	1



Variable Displacement Motor

(R & V)



E100 321E

* = included in base motor seal kit Q210

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

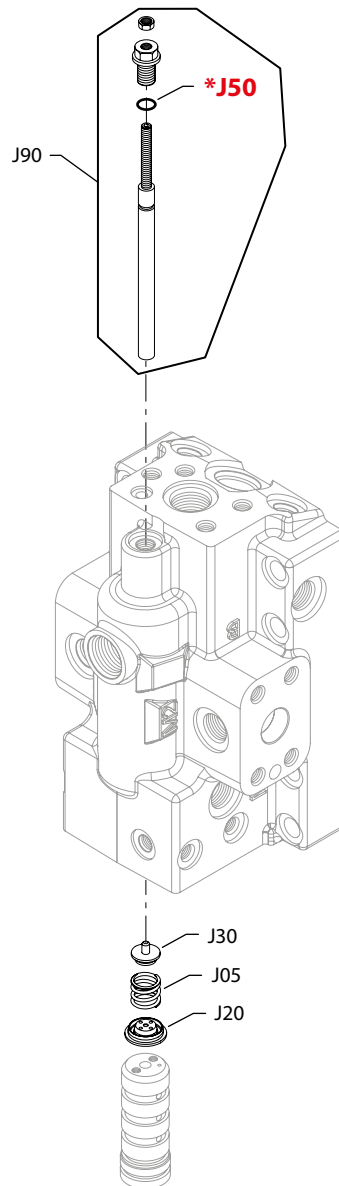
End cap, side ports

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
R	F10	92-07		508131	Servo piston seal ring (SB-1997-009)	1
	F11	92-07		015404	O-ring	1
	F12	92-07	92-18	358580	Servo piston	1
	F24	92-07		511118	Feedback lever	1
	F26	92-07		733089	Set screw	1
	F28	92-07		010397	Set screw	1
	F120	92-19		510074	Servo piston assembly	1
	G10	92-07		516057	End cap, side ports (SB-1996-005, SB-2002-001)	1
	G12	95-13		140644	Plug assembly	5
	G12	92-07	95-12	515965 (9005110-5600)	Plug assembly	7
	G18	95-13		11040532	Plug assembly	3
	G18	92-07	95-12	092114 (9007712-0604)	Set screw	2
	G30	92-07		11040532	Plug assembly	2
	G32	92-07		654053	Screw	4
	G34	92-07		672295	Screw	4
	G36	92-07		071878 (9004105-1190)	O-ring	1
	G50	92-07		001511 (9005100-4400)	Plug assembly	2
	G60	92-07		515733	End cap gasket (SB-1993-006 & SB-2004-004)	1
	G80	92-07		315325 (9005110-8700)	Plug assembly	1
V	F10	01-01		508131	Servo piston seal ring	1
	F11	01-01		015404	O-ring	1
	F24	01-01		511118	Feedback lever	1
	F26	01-01		733089	Set screw	1
	F28	01-01		010397	Set screw	1
	F120	01-01		510074	Servo piston assembly	1
	G10	01-01		519526	End cap, side ports (SB-2002-001)	1
	G12	01-01		140644	Plug assembly	5
	G18	01-01		11040532	Plug assembly	3
	G30	01-01		11040532	Plug assembly	2
	G32	01-01		654053	Screw	4
	G34	01-01		672295	Screw	4
	G36	01-01		071878 (9004105-1190)	O-ring	1
	G50	01-01		001511 (9005100-4400)	Plug assembly	2
	G60	01-01		515733	End cap gasket (SB-1993-006 & SB-2004-004)	1
	G80	01-01		315325 (9005110-8700)	Plug assembly	1



Variable Displacement Motor

(A, B, C, D, G, H, J, K, L,
P, R, S, V & W)



E100 299E

* = included in base motor seal kit Q210

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

Variable Displacement Motor
Threshold/range common parts

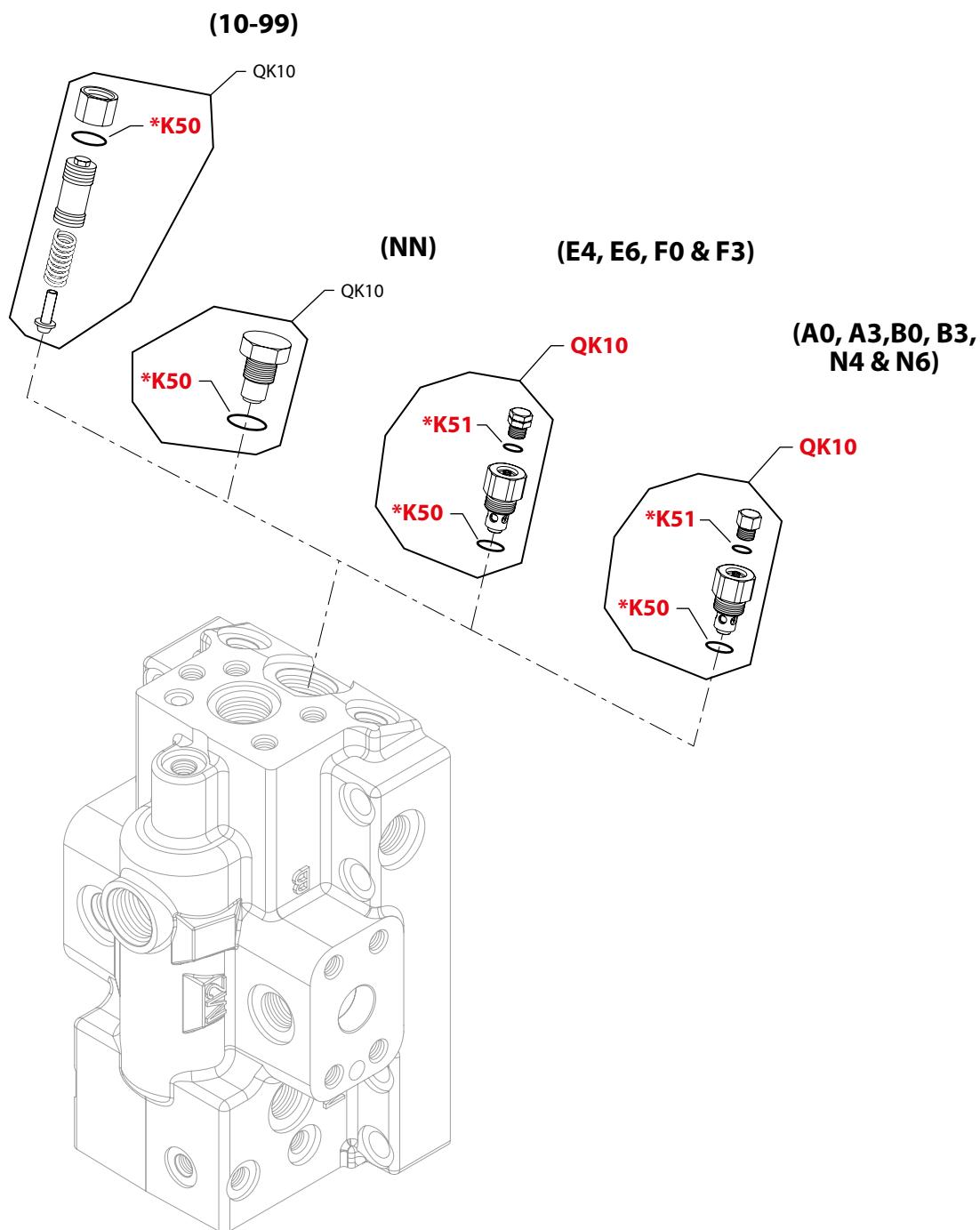
Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
	J20	92-07		11036824	Spring seat	1
	J30	96-07		507670	Spring seat (SB-1995-013)	1
	J50	92-07		732479 (9004105-0100)	O-ring	1
	J90	96-07		507675	Threshold adjustment screw assembly (SB-1995-013)	1

Threshold/range

A	J05	92-07		507638	Spring	1
(2-5 bar)						
B	J05	92-07		722215	Spring	1
(6-12 bar)						
C	J05	92-07		722207	Spring	1
(13-30 bar)						
D	J05	92-07		722207	Spring	1
(20-30 bar)						
G	J05	92-07		722207	Spring	1
(3-5 bar)						
H	J05	92-07		722207	Spring	1
(6-8 bar)						
J	J05	92-07		722215	Spring	1
(15-50 mA)						
K	J05	92-07		722207	Spring	1
(51-85 mA)						
L	J05	92-07		722215	Spring	1
(110-370 mA)						
N				No parts		
(no adjustment)						
P	J05	95-24		722215	Spring	1
(no adjustment)						
R	J05	99-35		507638	Spring	1
(320 mA)						
S	J05	99-35		507638	Spring	1
(640 mA)						
V	J05	95-35		507638	Spring	1
(220 mA)						
W	J05	97-41		507638	Spring	1
(440 mA)						



Variable Displacement Motor



E100 255E

* = included in base motor seal kit Q210

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

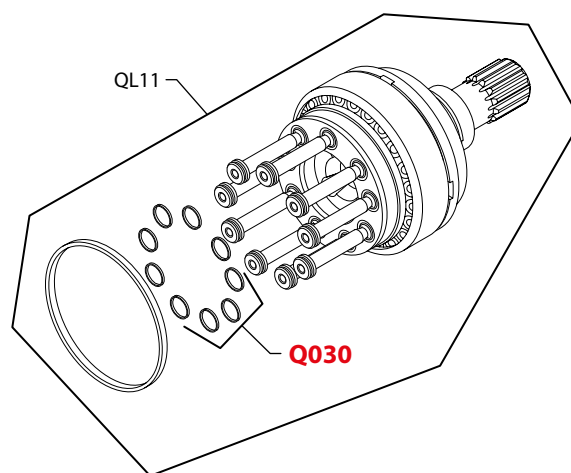
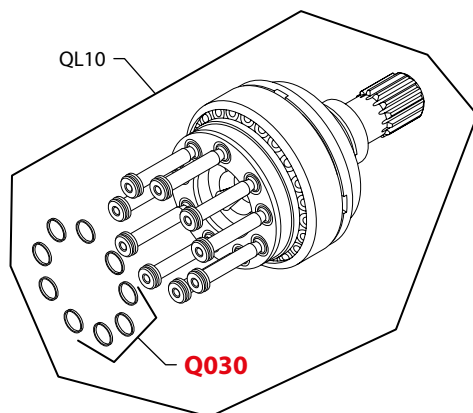
Variable Displacement Motor
Charge pressure relief

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
00		92-07	01-18	None		
10-99	K50	92-07	01-17	001149 (9004201-6200)	O-ring	1
	QK10	92-07	01-17	8510012	Charge relief valve kit	1
A0	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510253	Cartridge kit, 13 bar, 11 l/min	1
A3	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510256	Cartridge kit, 13 bar, 16 l/min	1
B0	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		11020552	Cartridge kit, 13 bar, 22 l/min	1
B3	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510243	Cartridge kit, 13 bar, 27 l/min	1
E4	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510261	Cartridge kit, 16 bar, 4 l/min	1
E6	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510252	Cartridge kit, 16 bar, 7 l/min	1
F0	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510259	Cartridge kit, 16 bar, 11 l/min	1
F3	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510262	Cartridge kit, 16 bar, 16 l/min	1
N4	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		8510255	Cartridge kit, 13 bar, 4 l/min	1
N6	K50	97-25		001149 (9004201-6200)	O-ring	1
	K51	97-25		085043 (9004201-3700)	O-ring	1
	QK10	97-25		11097072	Cartridge kit, 13 bar, 7 l/min	1
NN	K50	97-25		001149 (9004201-6200)	O-ring	1
	QK10	97-25		11097045	Loop flushing defeated kit	1



Variable Displacement Motor

(C6, D1, D2 & S1)



E100 663E

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

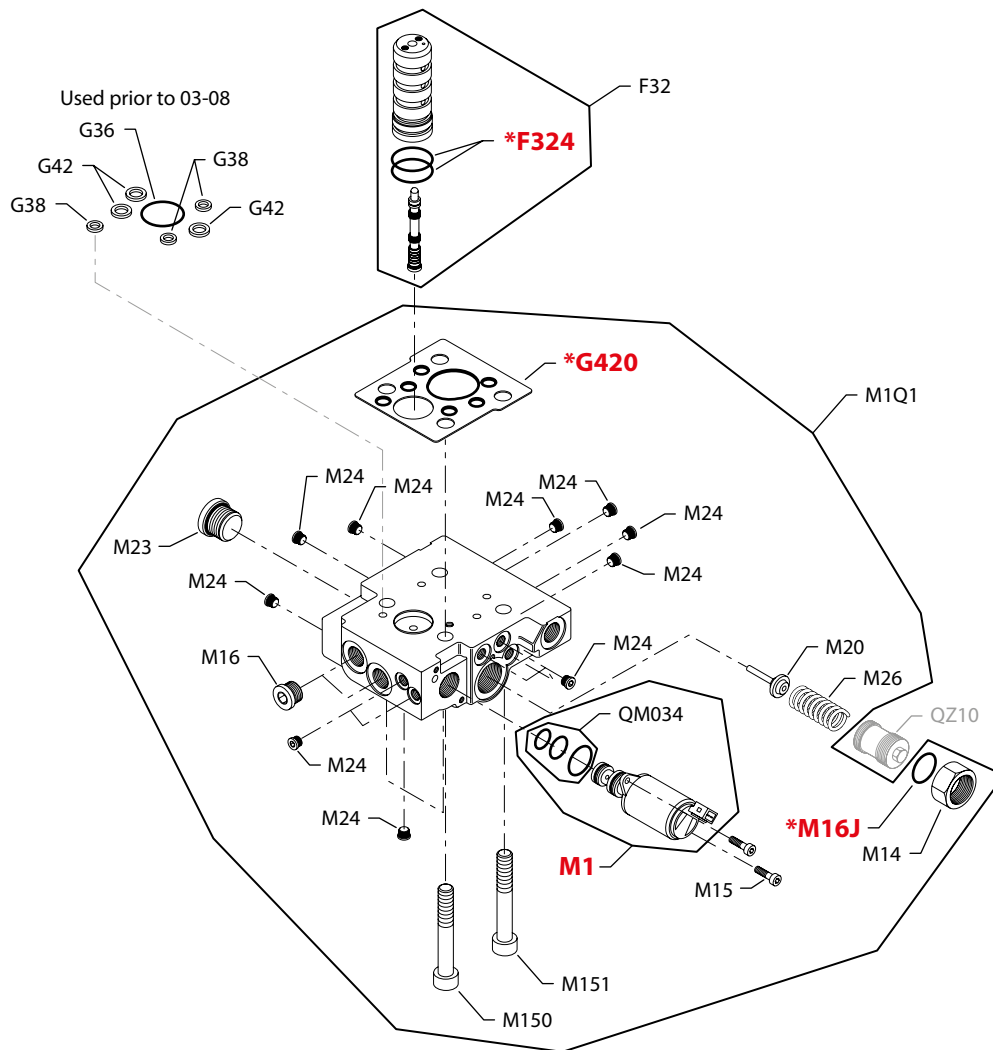

Variable Displacement Motor
Shaft

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
C6	QL10	92-07		11100425	Shaft, 21 tooth spline without speed ring	1
	QL11	92-07		11100426	Shaft, 21 tooth spline with speed ring	1
	Q030	92-07		11100632	Piston ring kit	1
D1	QL10	92-07		11100443	Shaft, 14 t. spline without speed ring (SB-1999-059)	1
	QL11	92-07		11100444	Shaft, 14 tooth spline with speed ring (SB-1999-059)	1
	Q030	92-07		11100632	Piston ring kit	1
D2	QL10	92-07		11100447	Shaft, 16 tooth without speed ring (SB-1999-059)	1
	QL11	92-07		11100448	Shaft, 16 tooth with speed ring (SB-1999-059)	1
	Q030	92-07		11100632	Piston ring kit	1
S1	QL10	92-07		11100478	Shaft, 14 tooth spline without speed ring	1
	QL11	92-07		11100479	Shaft, 14 tooth spline with speed ring	1
	Q030	92-07		11100632	Piston ring kit	1



Variable Displacement Motor

(D7 & D8)



E100 655E

* = included in base motor seal kit QZ10

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

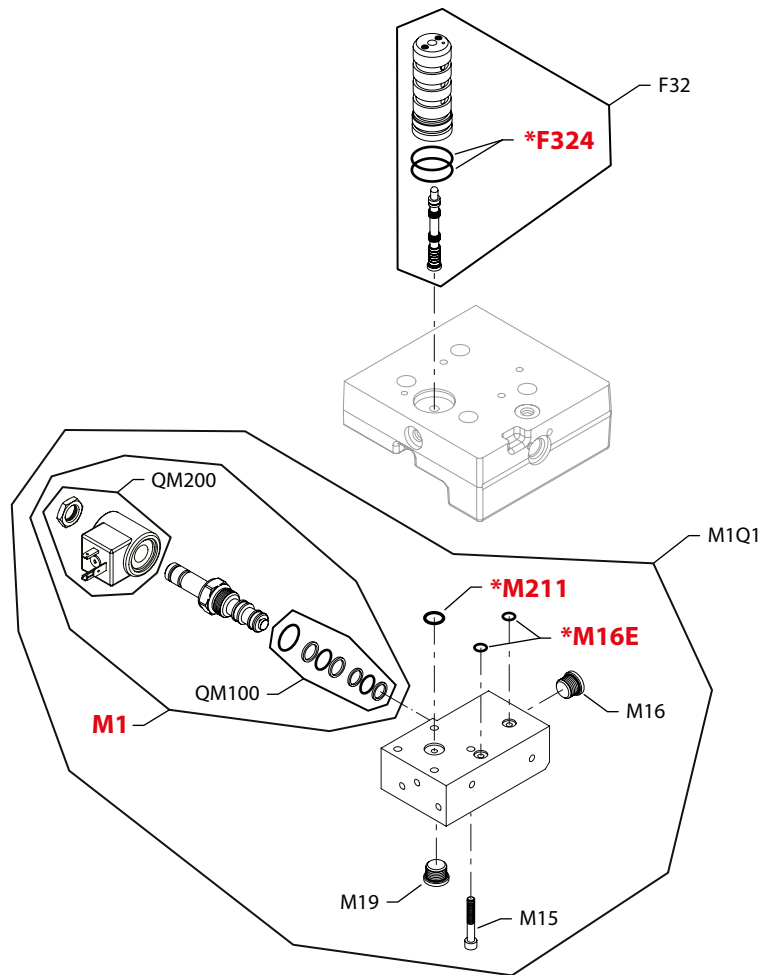
Electric proportional

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
D7	F32	99-35		727115	4-way valve assembly	1
	F324	99-35		730036	O-ring	2
	G36	99-35	03-07	364968	O-ring (SB-2002-001)	1
	G38	99-35	03-07	792739	O-ring (SB-2002-001)	3
	G42	99-35	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1	99-35		518080	Solenoid valve, 12 volt, Jet connector	1
	M1Q1	99-35		518257	Control kit, 12 volt, Jet connector	1
	M14	99-35		342709	Nut	1
	M15	99-35		067694	Screw	2
	M16	99-35		140644	Plug assembly	2
	M16J	99-35		001149 (9004201-6200)	O-ring	1
	M20	99-35		501876	PCOR spool	1
	M23	99-35		315325	Plug assembly	1
	M24	99-35		11040532	Plug	15
	M26	99-35		509152	Spring	1
	M150	99-35		739664	Screw	2
	M151	99-35		680686	Screw	2
	QM034	99-35		11099849	Solenoid valve seal kit	1
D8	F32	99-35		727115	4-way valve assembly	1
	F324	99-35		730036	O-ring	2
	G36	99-35	03-07	364968	O-ring (SB-2002-001)	1
	G38	99-35	03-07	792739	O-ring (SB-2002-001)	3
	G42	99-35	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1	99-35		518081	Solenoid valve, 24 volt, Jet connector	1
	M1Q1	99-35		518256	Control kit, 24 volt, Jet connector	1
	M14	99-35		342709	Nut	1
	M15	99-35		067694	Screw	2
	M16	99-35		140644	Plug assembly	2
	M16J	99-35		001149 (9004201-6200)	O-ring	1
	M20	99-35		501876	PCOR spool	1
	M23	99-35		315325	Plug assembly	1
	M24	99-35		11040532	Plug	15
	M26	99-35		509152	Spring	1
	M150	99-35		739664	Screw	2
	M151	99-35		680686	Screw	2
	QM034	99-35		11099849	Solenoid valve seal kit	1



Variable Displacement Motor

(E1 & E2)



E100 257E

* = included in base motor seal kit Q210

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

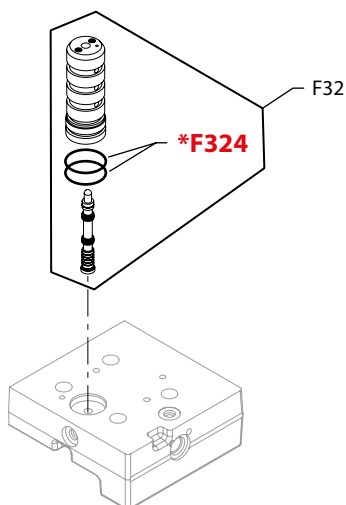
Variable Displacement Motor
Electric 2-position

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
E1	F32	92-07		727115	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1	92-07		784942	Solenoid valve, 12 volt, DIN connector	1
	M1Q1	92-07		503618	Control kit, 12 volt, DIN connector	1
	M15	92-07		329599	Screw	4
	M16	92-07		140644	Plug assembly	1
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M19	92-07		140644	Plug assembly	1
	M211	92-07		365015	O-ring	1
	QM100	92-07		11146862	Solenoid valve seal kit	1
	QM200	92-07		11146863	Coil kit, 12 volt, DIN connector	1
E2	F32	92-07		727115	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1	92-07		784934	Solenoid valve, 24, volt, DIN connector	1
	M1Q1	92-07		503617	Control kit, 24 volt, DIN connector	1
	M15	92-07		329599	Screw	4
	M16	92-07		140644	Plug assembly	1
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M19	92-07		140644	Plug assembly	1
	M211	92-07		365015	O-ring	1
	QM100	92-07		11146862	Solenoid valve seal kit	1
	QM200	92-07		11146864	Coil kit, 24 volt, DIN connector	1

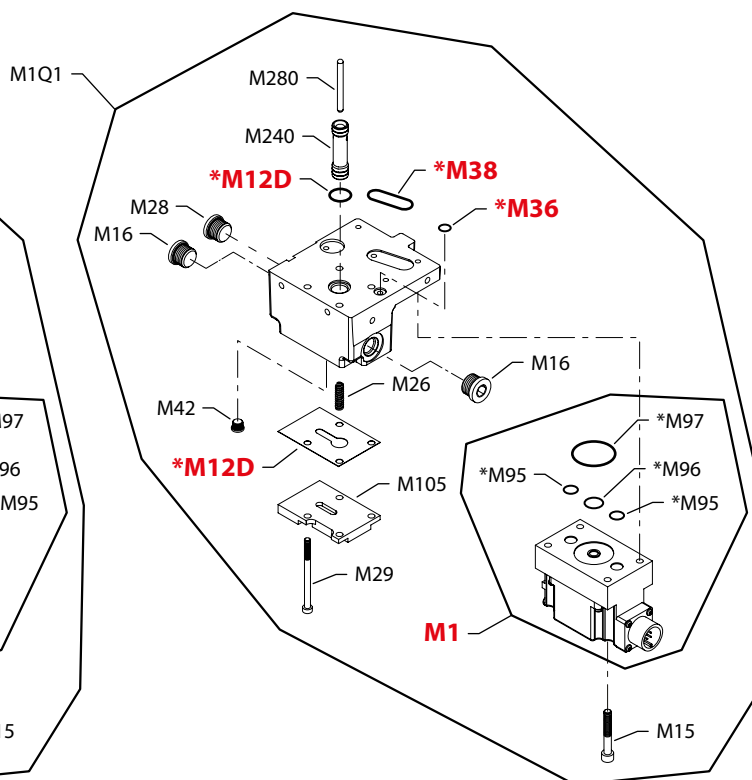
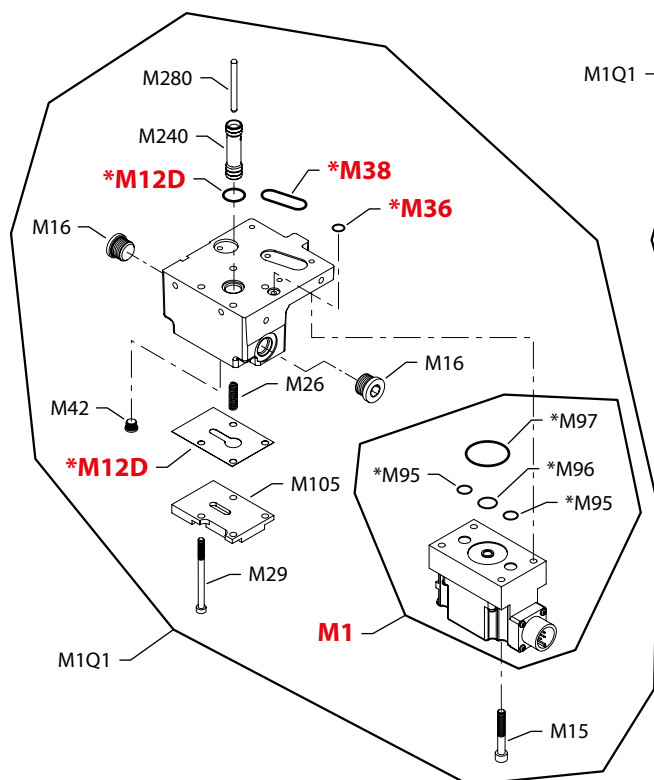
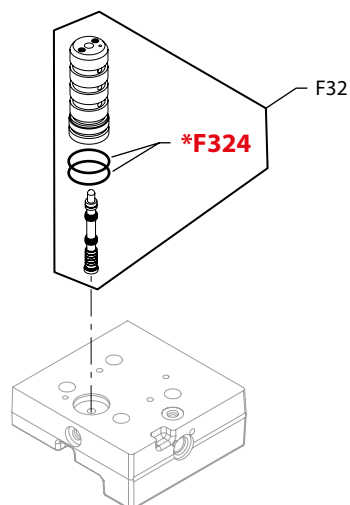


Variable Displacement Motor

(EP & EQ)



(ER & ES)



E100 258E

* = included in base motor seal kit Q210

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

Variable Displacement Motor
Electric proportional common parts

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
	F32	92-07		753186	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M12D	92-07		504358	Gasket	1
	M15	92-07		067678 (9007315-0504)	Screw	4
	M16	92-07		140644	Plug assembly	2
	M26	92-07		717454	Spring	1
	M29	92-07		771832	Screw	4
	M30	92-07		056770 (9004105-0150)	O-ring	1
	M36	92-07		732479 (9004105-0100)	O-ring	1
	M38	92-07		011395 (9004104-0230)	O-ring	1
	M42	92-07		11040532	Plug assembly	1
	M95	92-07		9004104-0120	O-ring	2
	M96	92-07		9004104-0140	O-ring	1
	M97	92-07		9004104-0240	O-ring	1
	M105	92-07		751883	Cover	1
	M240	92-07		741942	Piston	1
	M280	92-07		742320	Pin	1

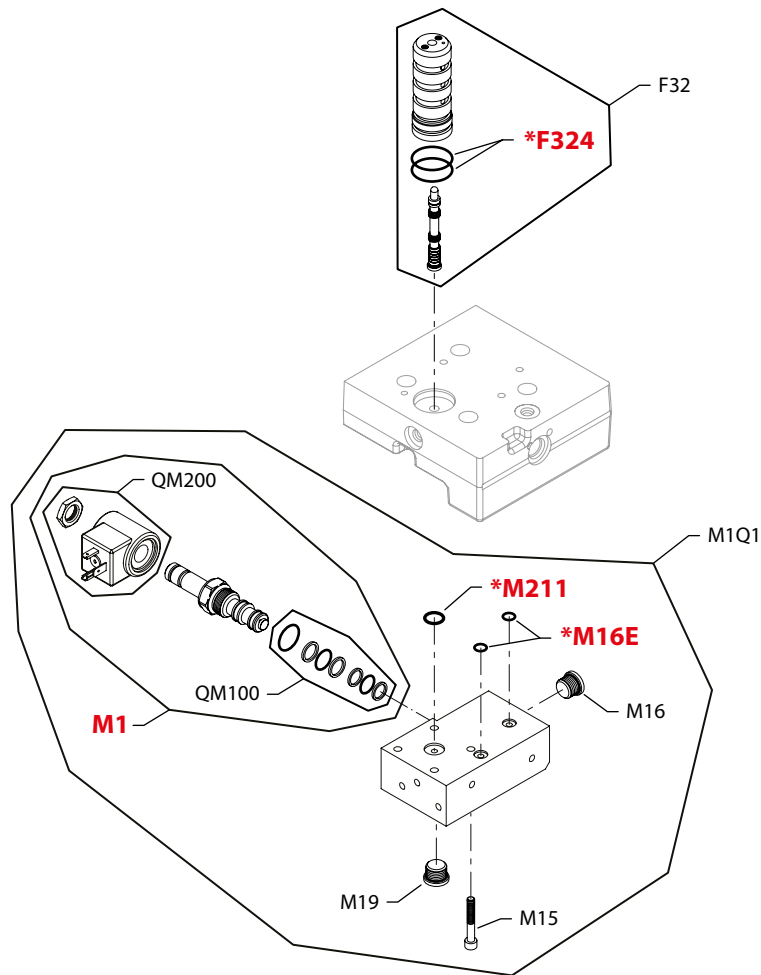
Electric proportional

EP	M1	92-07		MCV110A1058	PCP, Packard connector	1
	M16	92-07		140644	Plug assembly	2
	M1Q1	92-07		503791	Control kit, Packard connector	1
EQ	M1	92-07		MCV110A1017	PCP, MS connector	1
	M16	92-07		140644	Plug assembly	2
	M1Q1	92-07		503790	Control kit, MS connector	1
ER	M1	95-17		MCV110A1058	PCP, Packard connector	1
	M16	92-07		140644	Plug assembly	3
	M1Q1	95-17		507391	Control kit, Packard connector	1
ES	M1	95-17		MCV110A1017	PCP, MS connector	1
	M16	92-07		140644	Plug assembly	3
	M1Q1	95-17		507393	Control kit, MS connector	1



Variable Displacement Motor

(F1 & F2)



E100 257E

* = included in base motor seal kit Q210

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

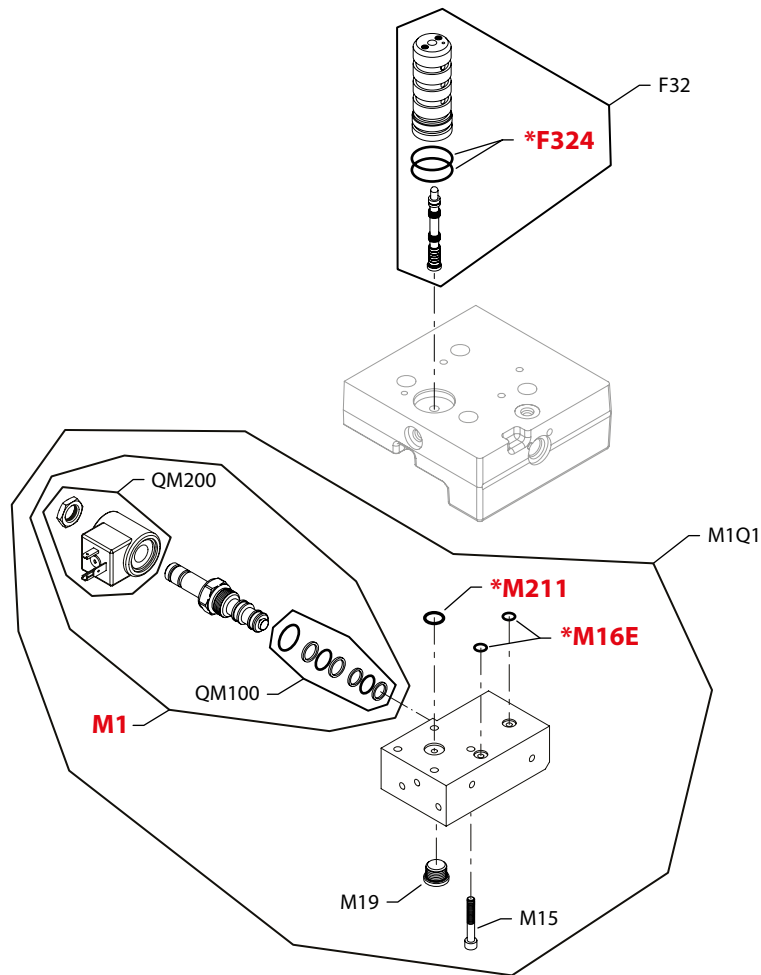
Variable Displacement Motor
Electric 2-position

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
F1	F32	92-07		500820	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1	92-07		784942	Solenoid valve, 12 volt, DIN connector	1
	M1Q1	92-07		503618	Control kit, 12 volt, DIN connector	1
	M15	92-07		329599	Screw	4
	M16	92-07		140644	Plug assembly	1
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M19	92-07		140644	Plug assembly	1
	M211	92-07		365015	O-ring	1
	QM100	92-07		11146862	Solenoid valve seal kit	1
	QM200	92-07		11146863	Coil kit, 12 volt, DIN connector	1
F2	F32	92-07		500820	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1	92-07		784934	Solenoid valve, 24, volt, DIN connector	1
	M1Q1	92-07		503617	Control kit, 24 volt, DIN connector	1
	M15	92-07		329599	Screw	4
	M16	92-07		140644	Plug assembly	1
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M19	92-07		140644	Plug assembly	1
	M211	92-07		365015	O-ring	1
	QM100	92-07		11146862	Solenoid valve seal kit	1
	QM200	92-07		11146864	Coil kit, 24 volt, DIN connector	1



Variable Displacement Motor

(H1 & H2)



E100 260E

* = included in base motor seal kit Q210

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

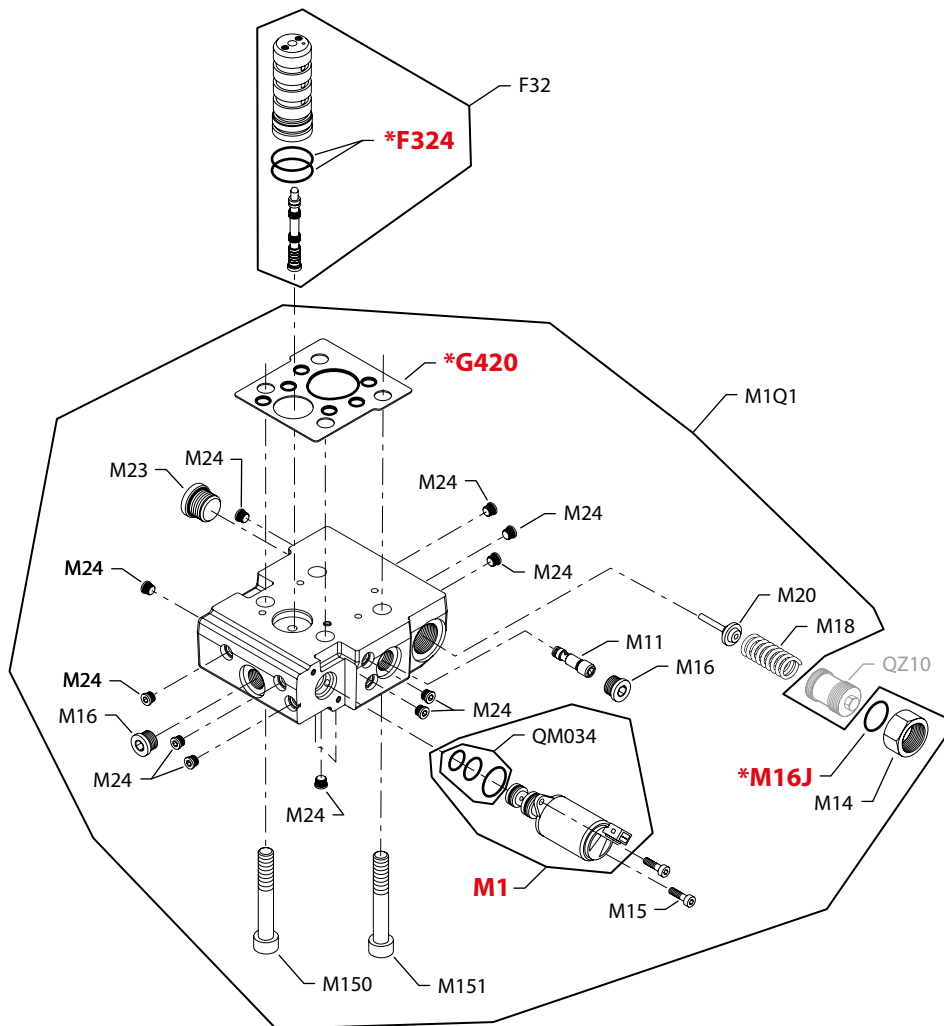

Variable Displacement Motor
Hydraulic proportional w/maximum angle override

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
H1	F32	92-07		727115	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1	92-07		784942	Solenoid valve, 12 volt, DIN connector	1
	M1Q1	92-07		503613	Control kit, 12 volt, DIN connector	1
	M15	92-07		329599	Screw	4
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M19	92-07		140644	Plug assembly	1
	M211	92-07		365015	O-ring	1
	QM100	92-07		11146862	Solenoid valve seal kit	1
	QM200	92-07		11146863	Coil kit, 12 volt, DIN connector	1
H2	F32	92-07		727115	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1	92-07		784934	Solenoid valve, 24, volt, DIN connector	1
	M1Q1	92-07		503614	Control kit, 24 volt, DIN connector	1
	M15	92-07		329599	Screw	4
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M19	92-07		140644	Plug assembly	1
	M211	92-07		365015	O-ring	1
	QM100	92-07		11146862	Solenoid valve seal kit	1
	QM200	92-07		11146864	Coil kit, 24 volt, DIN connector	1



Variable Displacement Motor

(H3 & H4)



E103 123E

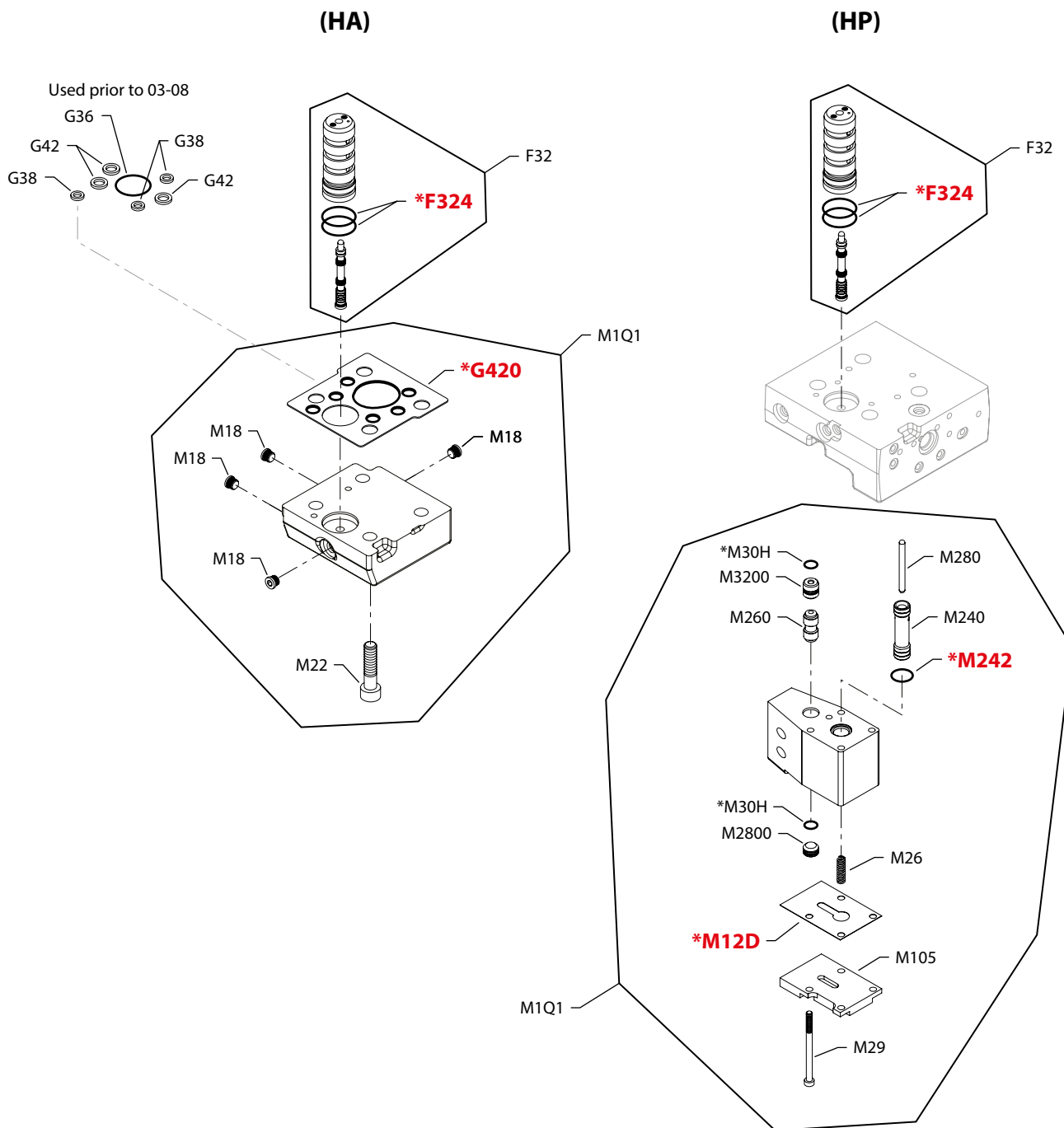
* = included in base motor seal kit QZ10

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

Variable Displacement Motor
Electric proportional w/pressure reducing

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
H3	F32	07-21		727115	4-way valve assembly	1
	F324	07-21		730036	O-ring	2
	G420	07-21		511810	Gasket/O-ring seal	1
	M1	07-21		518080	Solenoid valve, 12 volt, 25 bar, Jet connector	1
	M1Q1	07-21		11097916	Control kit, 12 volt, 25 bar, Jet connector	1
	M11	07-21		11000893	Shuttle valve	1
	M14	07-21		342709 (9003575-0101)	Nut	1
	M15	07-21		067694	Screw	2
	M16	07-21		140644	Plug assembly	2
	M16J	07-21		001149 (9004201-6200)	O-ring	1
	M20	07-21		501876	PCOR spool	1
	M23	07-21		315325 (9005110-8700)	Plug assembly	1
	M24	07-21		11040532	Plug	15
	M26	07-21		509152	Spring	1
	M150	07-21		739664	Screw	2
	M151	07-21		739664	Screw	2
	QM034	07-21		11099849	Solenoid valve seal kit	1
H4	F32	07-21		727115	4-way valve assembly	1
	F324	07-21		730036	O-ring	2
	G420	07-21		511810	Gasket/O-ring seal	1
	M1	07-21		518081	Solenoid valve, 24 volt, 25 bar, Jet connector	1
	M1Q1	07-21		11013385	Control kit, 24 volt, 25 bar, Jet connector	1
	M11	07-21		11000893	Shuttle valve	1
	M14	07-21		342709 (9003575-0101)	Nut	1
	M15	07-21		067694	Screw	2
	M16	07-21		140644	Plug assembly	2
	M16J	07-21		001149 (9004201-6200)	O-ring	1
	M20	07-21		501876	PCOR spool	1
	M23	07-21		315325 (9005110-8700)	Plug assembly	1
	M24	07-21		11040532	Plug	15
	M26	07-21		509152	Spring	1
	M150	07-21		739664	Screw	2
	M151	07-21		739664	Screw	2
	QM034	07-21		11099849	Solenoid valve seal kit	1

Variable Displacement Motor



E100 304E

* = included in base motor seal kit Q210

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

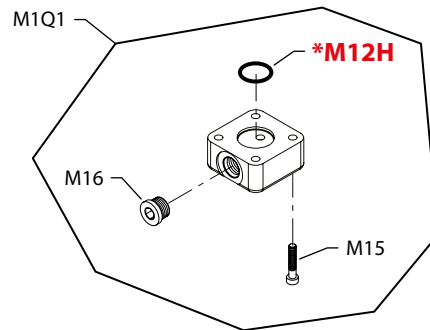
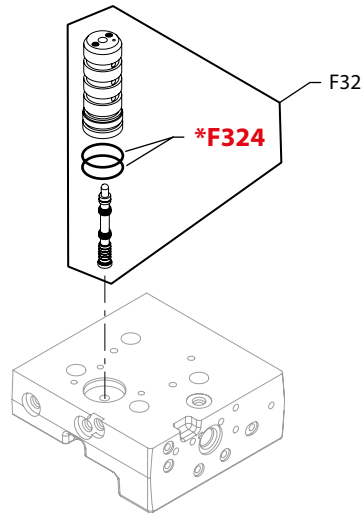
Variable Displacement Motor
Hydraulic proportional

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
HA	F32	94-12		727115	4-way valve assembly	1
	F324	94-12		730036	O-ring	2
	G36	94-12	03-07	364968	O-ring (SB-2002-001)	1
	G38	94-12	03-07	792739	O-ring (SB-2002-001)	3
	G42	94-12	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1Q1	94-12		518237	Control kit	1
	M18	94-12		11040532	Plug assembly	4
	M22	94-12		732982 (9007314-1009)	Screw	4
HP	F32	92-07		753186	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1Q1	92-07		796482	Control kit	1
	M12D	92-07		504358	Gasket	1
	M26	92-07		717454	Spring	1
	M29	92-07		771832	Screw	4
	M30H	92-07		011296 (9004105-0120)	O-ring	2
	M105	92-07		751883	Cover	1
	M240	92-07		741942	Shuttle piston	1
	M242	92-07		056770	O-ring	1
	M260	92-07		751644	Shuttle valve	1
	M280	92-07		742320	Pin	1
	M2800	92-07		342246	Sealing plug	1
	M3200	92-07		353615	Sealing plug	1



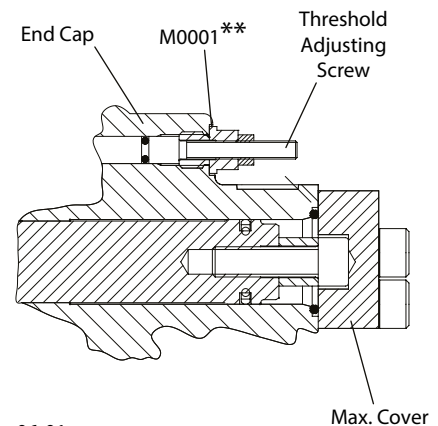
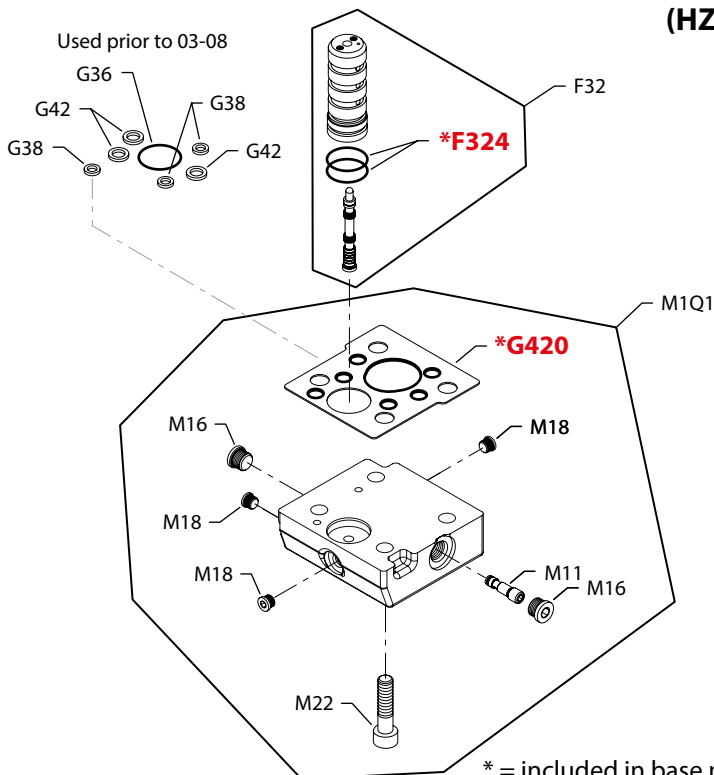
Variable Displacement Motor

(HS)

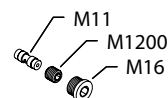


(HZ)

** The seal ring M0001 is required only if there has been a seal ring in the location previously.



Used prior to 06-01



E103 124E

* = included in base motor seal kit Q210

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

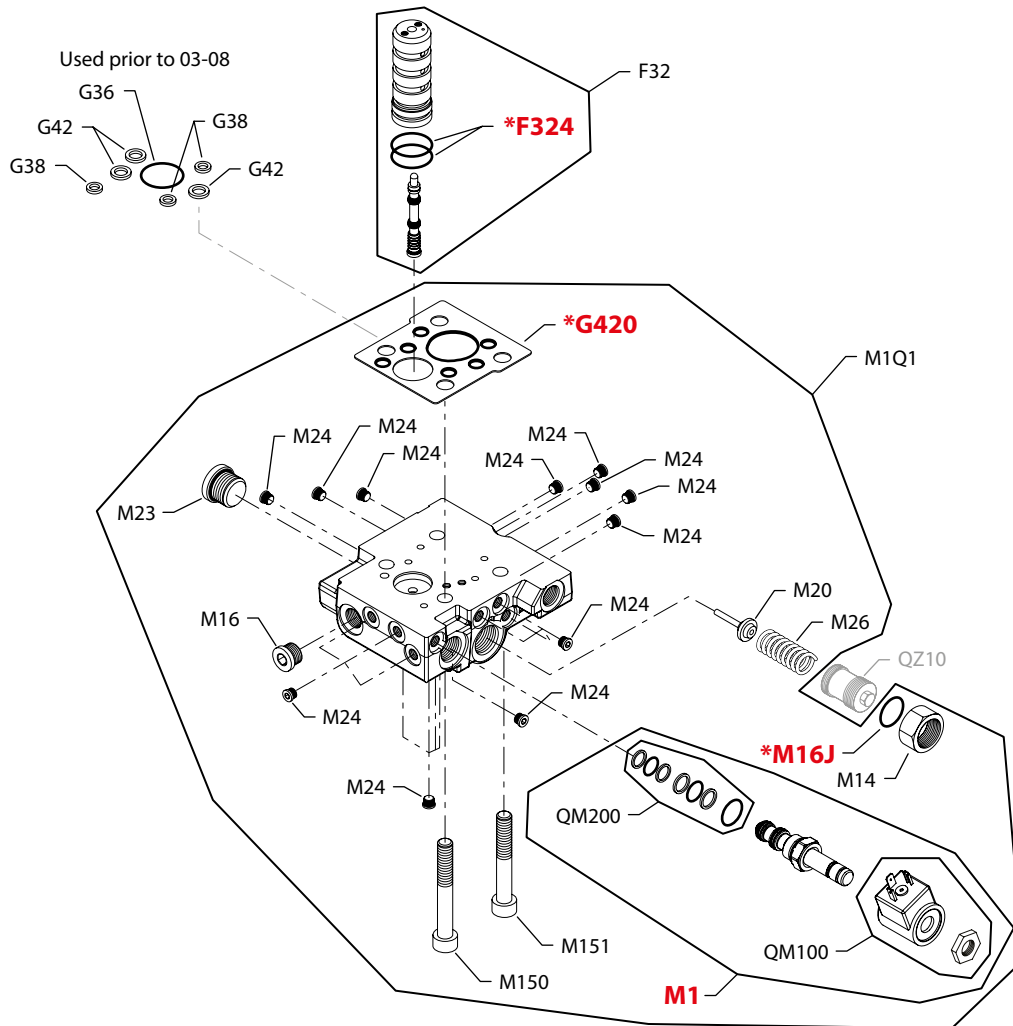

Variable Displacement Motor
Hydraulic proportional

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
HS	F32	92-07		727115	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	M1Q1	92-07		503804	Control kit	1
	M12H	92-07		364984	O-ring	1
	M15	92-07		124115	Screw	4
	M16	92-07		140644	Plug assembly	1
HZ	F32	92-07		727115	4-way valve assembly	1
	F324	92-07		730036	O-ring	2
	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1Q1	92-07		518221	Control kit (SB-2002-001)	1
	M001	07-16		084673	Seal ring	1
	M11	06-01		11000893	Shuttle valve	1
	M11	92-07	05-52	759415	Shuttle valve	1
	M16	92-07		140644	Plug assembly	2
	M18	92-07		11040532	Plug	3
	M22	92-07		732982	Screw	4
	M1200	92-07	05-52	759423	Orifice plug	1



Variable Displacement Motor

(J1)



E100 305E

* = included in base motor seal kit QZ10

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

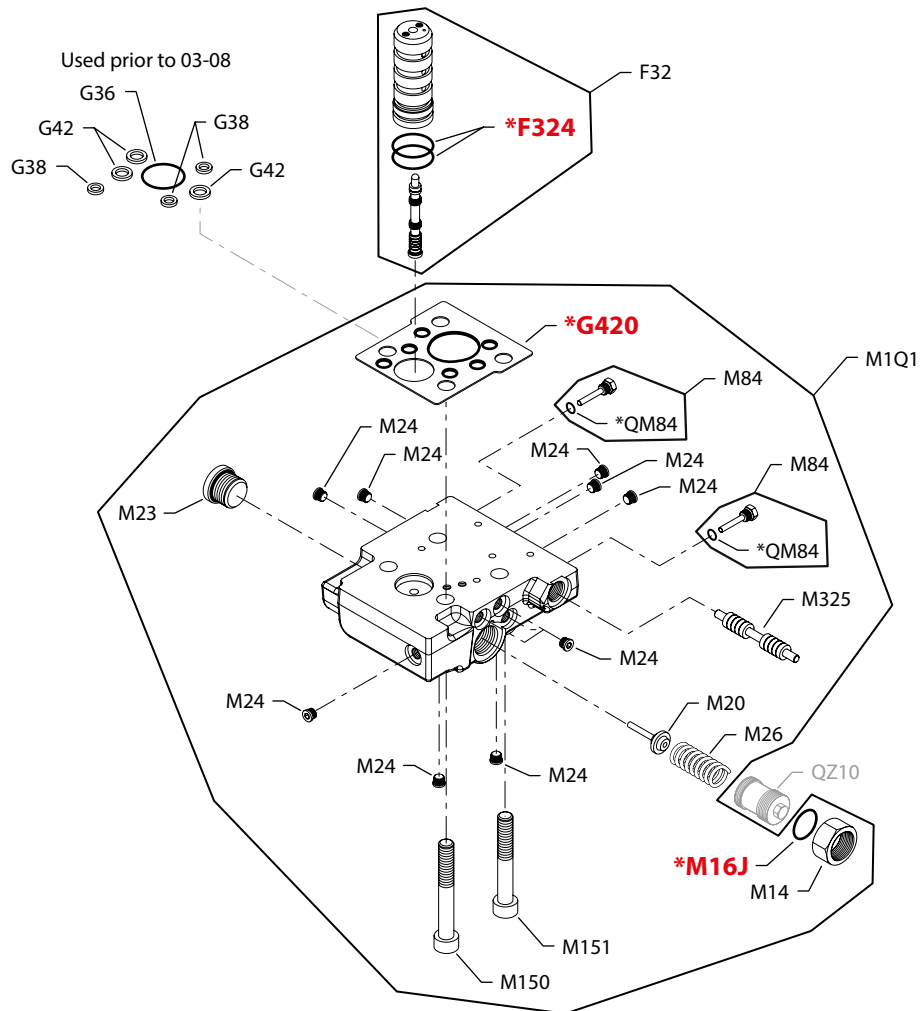

Variable Displacement Motor
Hydraulic proportional with electric override

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
J1	F32	94-47		727115	4-way valve assembly	1
	F324	94-47		730036	O-ring	2
	G36	94-47	03-07	364968	O-ring (SB-2002-001)	1
	G38	94-47	03-07	792739	O-ring (SB-2002-001)	3
	G42	94-47	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1	94-47		784942	Solenoid valve, 12 volt, DIN connector	1
	M1Q1	94-47		518230	Control kit, 12 volt, DIN connector	1
	M14	94-47		342709 (9003575-0101)	Nut	1
	M16	94-47		140644	Plug assembly	1
	M16J	94-47		001149 (9004201-6200)	O-ring	1
	M20	94-47		746016	PCOR spool assembly	1
	M23	94-47		315325 (9005110-8700)	Plug assembly	1
	M24	94-47		11040532	Plug assembly	21
	M26	94-47		509152	Spring	1
	M150	94-47		739664	Screw	2
	M151	94-47		680686	Screw	2
	QM100	94-47		11146862	Solenoid valve seal kit	1
	QM200	94-47		11146863	Coil kit, 12 volt	1



Variable Displacement Motor

(JA)



E100 306E

* = included in base motor seal kit Q210

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

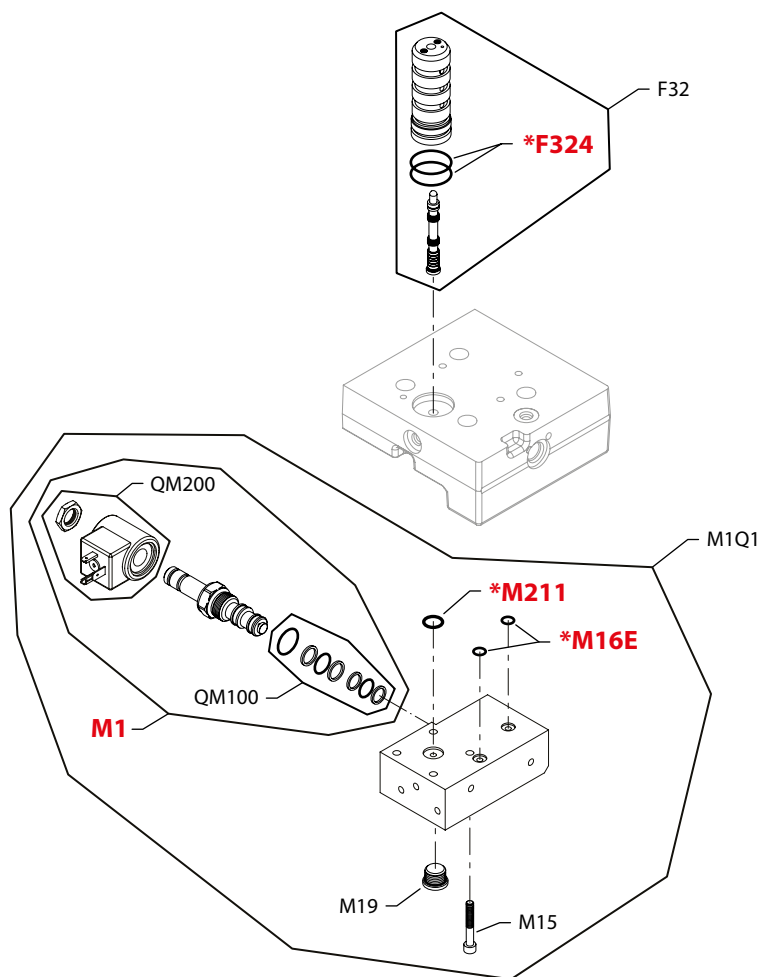

Variable Displacement Motor
Hydraulic proportional

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
JA	F32	95-50		727115	4-way valve assembly	1
	F324	95-50		730036	O-ring	2
	G36	95-50	03-07	364968	O-ring (SB-2002-001)	1
	G38	95-50	03-07	792739	O-ring (SB-2002-001)	3
	G42	95-50	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1Q1	95-50		518246	Control kit	1
	M14	95-50		342709 (9003575-0101)	Nut	1
	M16J	95-50		001149 (9004201-6200)	O-ring	1
	M20	95-50		501876	PCOR spool assembly	1
	M23	95-50		315325 (9005110-8700)	Plug assembly	1
	M24	95-50		11040532	Plug assembly	11
	M26	95-50		509152	Spring	1
	M84	95-50		735266	Plug assembly	2
	M150	95-50		739664	Screw	2
	M151	95-50		680686	Screw	2
	M325	95-50		346080	Spool	1
	QM84	95-50		039297 (9004201-1200)	O-ring	1



Variable Displacement Motor

(K1 & K2)



E103 125E

* = included in base motor seal kit Q210

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

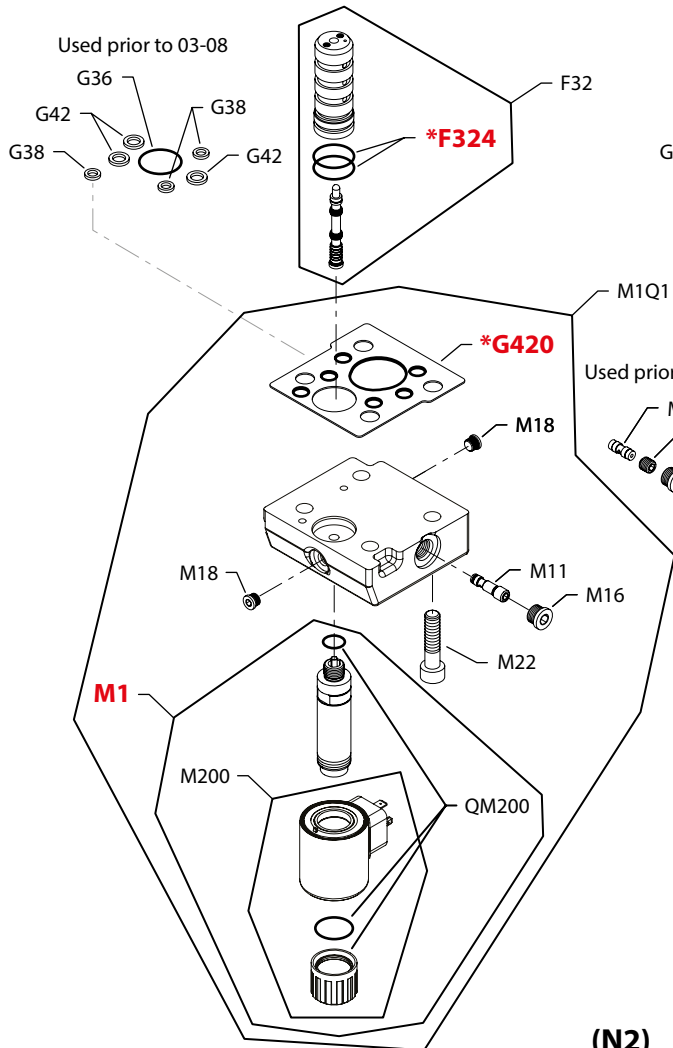

Variable Displacement Motor
Hydraulic proportional with electric override

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
K1	F32	91-35		727115	4-way valve assembly	1
	F324	91-35		730036	O-ring	2
	M1	91-35		784942	Solenoid valve, 12 volt, DIN connector	1
	M1Q1	91-35		503620	Control kit, 12 volt, DIN connector	1
	M15	91-35		329599	Screw	4
	M16E	91-35		732479 (9004105-0100)	O-ring	2
	M19	91-35		140644	Plug assembly	1
	M211	91-35		365015	O-ring	1
K2	F32	91-35		727115	4-way valve assembly	1
	F324	91-35		730036	O-ring	2
	M1	91-35		784934	Solenoid valve, 24 volt, DIN connector	1
	M1Q1	91-35		503806	Control kit, 24 volt, DIN connector	1
	M15	91-35		329599	Screw	4
	M16E	91-35		732479 (9004105-0100)	O-ring	2
	M19	91-35		140644	Plug assembly	1
	M211	91-35		365015	O-ring	1

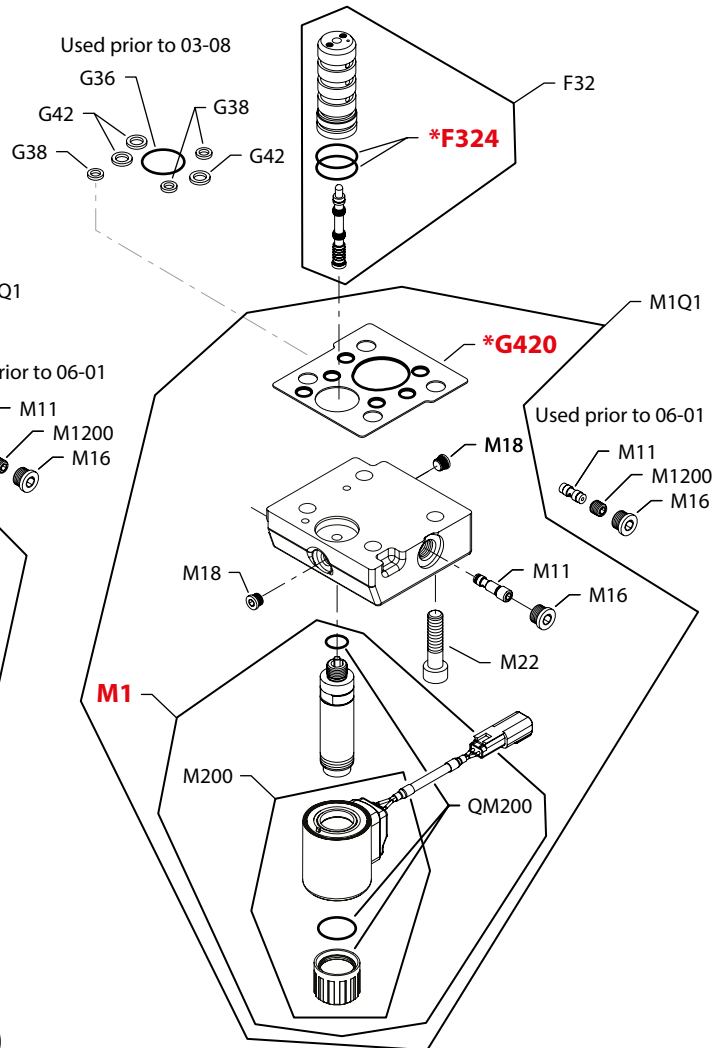


Variable Displacement Motor

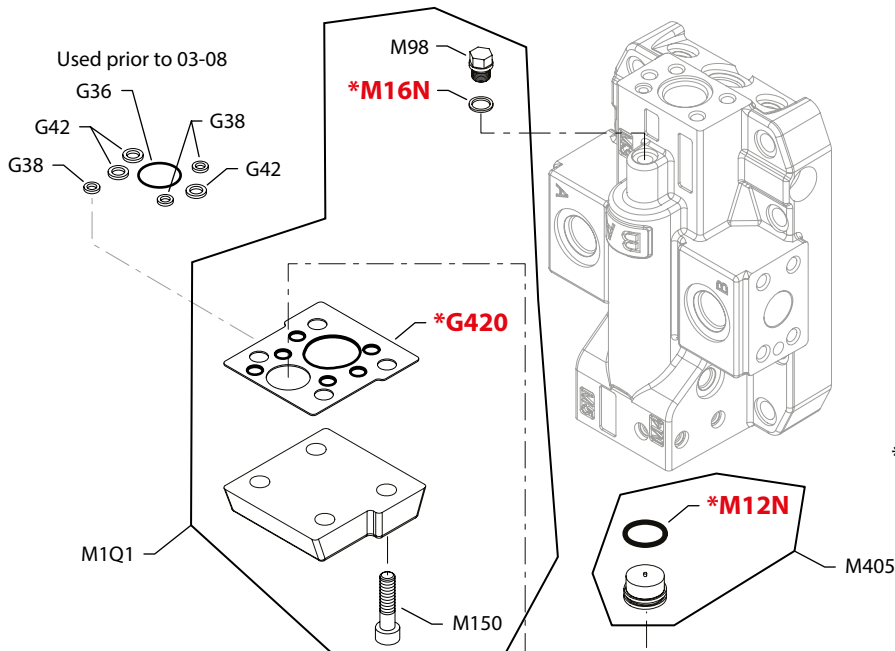
(L1, L2 & L7)



(L3 & L4)



(N2)



* = included in base motor seal kit Q210

E100 307E

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Electric proportional common parts

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
	F32	95-35		509845	4-way valve assembly	1
	F324	95-35		730036	O-ring	2
	G36	95-35	03-07	364968	O-ring (SB-2002-001)	1
	G38	95-35	03-07	792739	O-ring (SB-2002-001)	3
	G42	95-35	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M11	06-01		11000893	Shuttle valve	1
	M11	95-35	05-52	759415	Shuttle valve	1
	M16	95-35		140644	Plug assembly	1
	M18	95-35		11040532	Plug	2
	M22	95-35		727586	Screw	4
	M1200	95-35	05-52	759423	Orifice plug	1

Electric proportional

L1	M1	95-35		11026442	Solenoid valve, 12 volt, DIN connector	1
	M1Q1	95-35		518247	Control kit, 12 volt, DIN connector	1
	M200	95-35		11026452	Coil kit, 12 volt, DIN connector	1
	QM200	95-35		11121251	Coil nut kit	1
L2	M1	95-35		11026443	Solenoid valve, 24 volt, DIN connector	1
	M1Q1	95-35		518243	Control kit, 24 volt, DIN connector	1
	M200	95-35		11026453	Coil kit, 24 volt, DIN connector	1
	QM200	95-35		11121251	Coil nut kit	1
L3	M1	01-19		11026447	Solenoid, 12 volt, Deutsch connector	1
	M1Q1	01-19		518259	Control kit, 12 volt, Deutsch connector	1
	M200	01-19		11026454	Coil kit, 12 volt, Deutsch connector	1
	QM200	01-19		11121272	Coil nut kit	1
L4	M1	96-24		11048359	Solenoid, 24 volt, Jet connector	1
	M1Q1	96-24		11048356	Control kit, 24 volt, Jet connector	1
	M200	96-24		11048358	Coil kit, 24 volt, Jet connector	1
	QM200	96-24		11121272	Coil nut kit	1
L7	M1	96-24		11026438	Solenoid, 12 volt, Jet connector	1
	M1Q1	96-24		518249	Control kit, 12 volt, Jet connector	1
	M200	96-24		11026450	Coil kit, 12 volt, Jet connector	1
	QM200	96-24		11121251	Coil nut kit	1

Hydraulic 2-position

N2	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1Q1	92-07		518226	Control kit	1
	M12N	92-07		730036	O-ring	1
	M16N	92-07		084673	Sealing ring	2
	M98	92-07		745331	Plug assembly	1
	M150	92-07		727586	Screw	4
	M405	92-07		510415	Sleeve assembly	1

(PC)



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


Variable Displacement Motor
Pressure compensator

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
PC	F32	92-07	13-24	510416	4-way valve assembly	1
	F324	92-07	13-24	730036	O-ring	2
	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08	13-24	511810	Gasket/O-ring seal (SB-2002-001)	1
	M1Q1	92-07	13-24	518223	Control kit, PC	1
	M14	92-07	13-24	342709 (9003575-0101)	Nut	1
	M16	92-07	13-24	140644	Plug assembly	2
	M16J	92-07	13-24	001149 (9004201-6200)	O-ring	1
	M20	92-07	13-24	746016	Relief valve	1
	M23	92-07	13-24	315325 (9005110-8700)	Plug assembly	1
	M24P	92-07	13-24	732479 (9004105-0100)	O-ring	4
	M26	92-07	13-24	509152	Spring	1
	M27	92-07	13-24	11040532	Plug assembly	16
	M29	92-07	13-24	713719 (9007314-0610)	Screw	4
	M58	92-07	13-24	732982 (9007314-1009)	Screw	4
	M82	92-07	13-24	732479 (9004105-0100)	O-ring	1
	M96	92-07	13-24	084673	Sealing ring	1
	M98	92-07	13-24	745331	Plug	1
	M321	92-07	13-24	519114	Shuttle valve assembly	1
	M360	92-07	13-24	092114 (9007712-0604)	Set screw	4

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Electric 2-position with solenoid valve

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
T9	F32	08-51		503380	4-way valve assembly	1
	F324	08-51		730036	O-ring	2
	G420	08-51		511810	Gasket/O-ring seal (SB-2002-001)	1
	M12	08-51		11082448	Sensing piston	1
	M16	08-51		140644	Plug assembly	1
	M18	08-51		11040532	Plug assembly	1
	M22	08-51		732982 (9007314-1009)	Screw	4
	M1	08-51		11047613	Solenoid valve, 12 volt, Deutsch connector	1
	M200	08-51		11047612	Coil kit, 12 volt, Deutsch connector	1
	QM200	08-51		11121272	Coil nut kit	1

Pressure compensator

TA	F32	97-02		503380	4-way valve assembly	1
	F324	97-02		730036	O-ring	2
	G36	97-02	03-07	364968	O-ring (SB-2002-001)	1
	G38	97-02	03-07	792739	O-ring (SB-2002-001)	3
	G42	97-02	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1TA	97-02		140644	Plug assembly	1
	M12	97-02		11082448	Sensing piston	1
	M16	97-02		140644	Plug assembly	1
	M18	97-02		11040532	Plug assembly	1
	M22	97-02		732982	Screw	4

Hydraulic 2-position

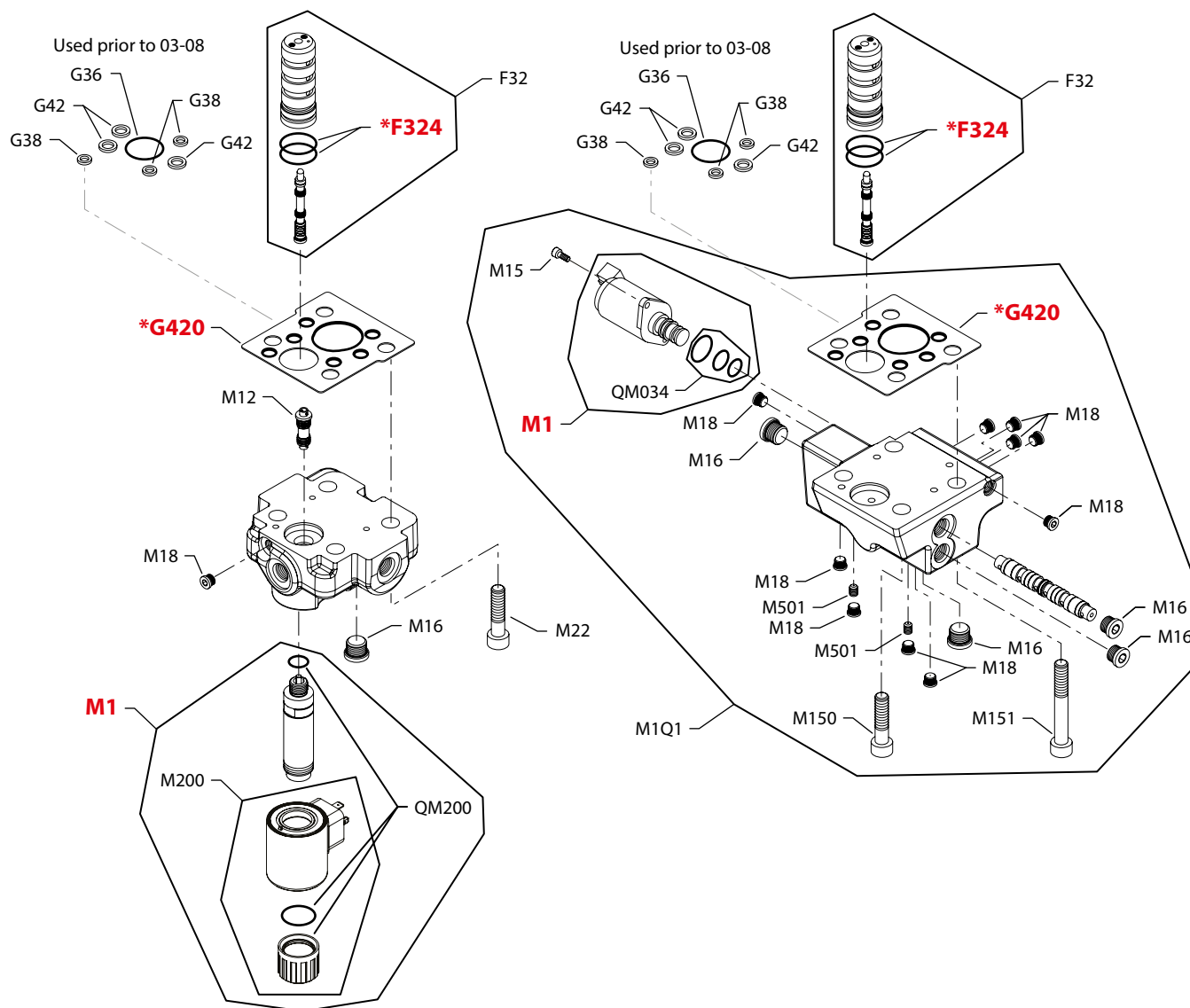
TH	F32	97-02		503380	4-way valve assembly	1
	F324	97-02		730036	O-ring	2
	G36	97-02	03-07	364968	O-ring (SB-2002-001)	1
	G38	97-02	03-07	792739	O-ring (SB-2002-001)	3
	G42	97-02	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M12	97-02		11083129	Sensing piston	1
	M16	97-02		140644	Plug assembly	1
	M18	97-02		11040532	Plug assembly	1
	M22	97-02		732982	Screw	4



Variable Displacement Motor

(U1 & U2)

(Y7)



E100 271E

* = included in base motor seal kit Q210

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Electric 2-position

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
U1	F32	99-30		503925	4-way valve assembly	1
	F324	99-30		730036	O-ring	2
	G36	99-30	03-07	364968	O-ring (SB-2002-001)	1
	G38	99-30	03-07	792739	O-ring (SB-2002-001)	3
	G42	99-30	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1	99-30		11026435	Solenoid valve, 12 volt, DIN connector	1
	M12	99-30		507292	Piston	1
	M16	99-30		140644	Plug assembly	1
	M18	99-30		11040532	Plug assembly	1
	M22	99-30		732982 (9007314-1009)	Screw	4
	M200	99-30		11026448	Coil kit, 12 volt, Din connector	1
	QM200	99-30		11121273	Coil nut kit	1
U2	F32	99-30		503925	4-way valve assembly	1
	F324	99-30		730036	O-ring	2
	G36	99-30	03-07	364968	O-ring (SB-2002-001)	1
	G38	99-30	03-07	792739	O-ring (SB-2002-001)	3
	G42	99-30	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1	99-30		11026436	Solenoid valve, 24 volt, DIN connector	1
	M12	99-30		507292	Piston	1
	M16	99-30		140644	Plug assembly	1
	M18	99-30		11040532	Plug assembly	1
	M22	99-30		732982 (9007314-1009)	Screw	4
	M200	99-30		11026449	Coil kit, 24 volt, Din connector	1
	QM200	99-30		11121273	Coil nut kit	1

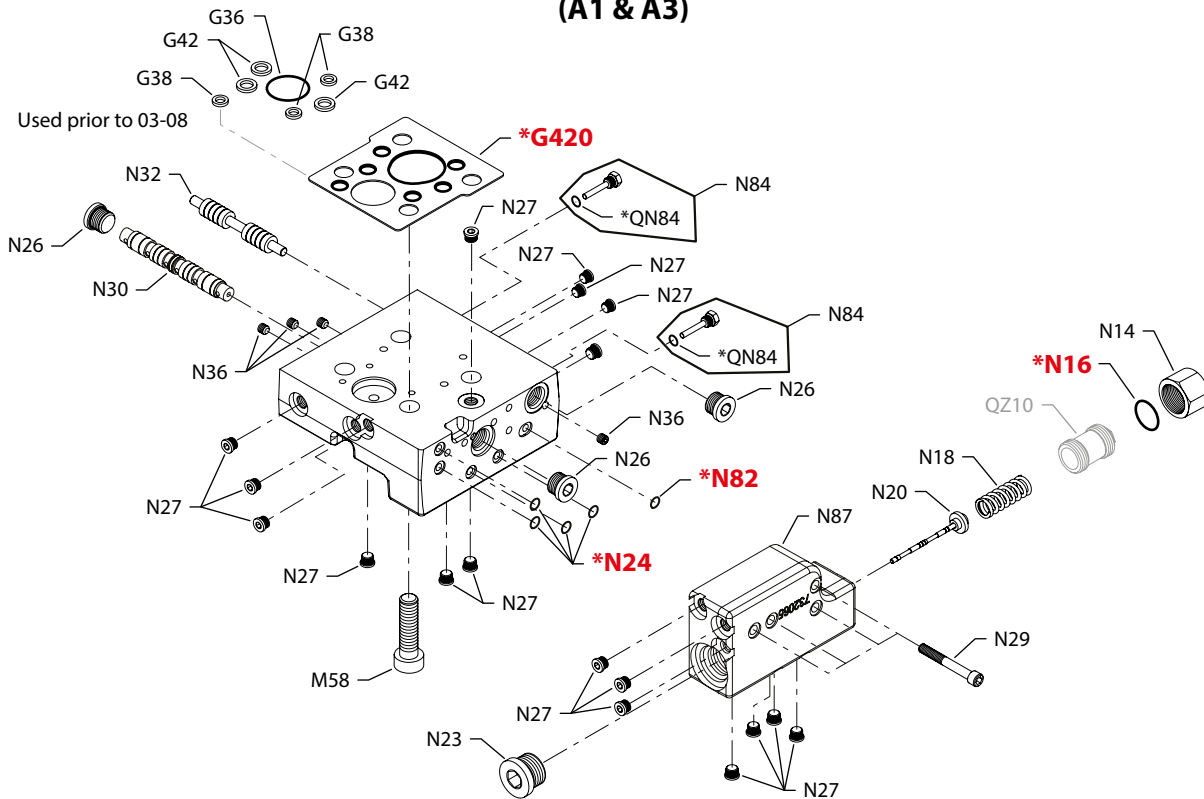
Electric proportional

Y7	F32	01-01		727115	4-way valve assembly	1
	F324	01-01		730036	O-ring	2
	G36	01-01	03-07	364968	O-ring (SB-2002-001)	1
	G38	01-01	03-07	792739	O-ring (SB-2002-001)	3
	G42	01-01	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	M1	01-01		518080	Solenoid valve, 12 volt, Jet connector	1
	M1Q1	01-01		519577	Control kit	1
	M15	01-01		067694	Screw	2
	M16	01-01		140644	Plug assembly	4
	M18	01-01		11040532	Plug assembly	10
	M150	01-01		672295	Screw	2
	M151	01-01		502580	Screw	2
	M321	01-01		519114	Spool	1
	M501	01-01		578542	Orifice, 0.8, M6 x 8	2
	QM034	01-01		11099849	Solenoid valve seal kit	1

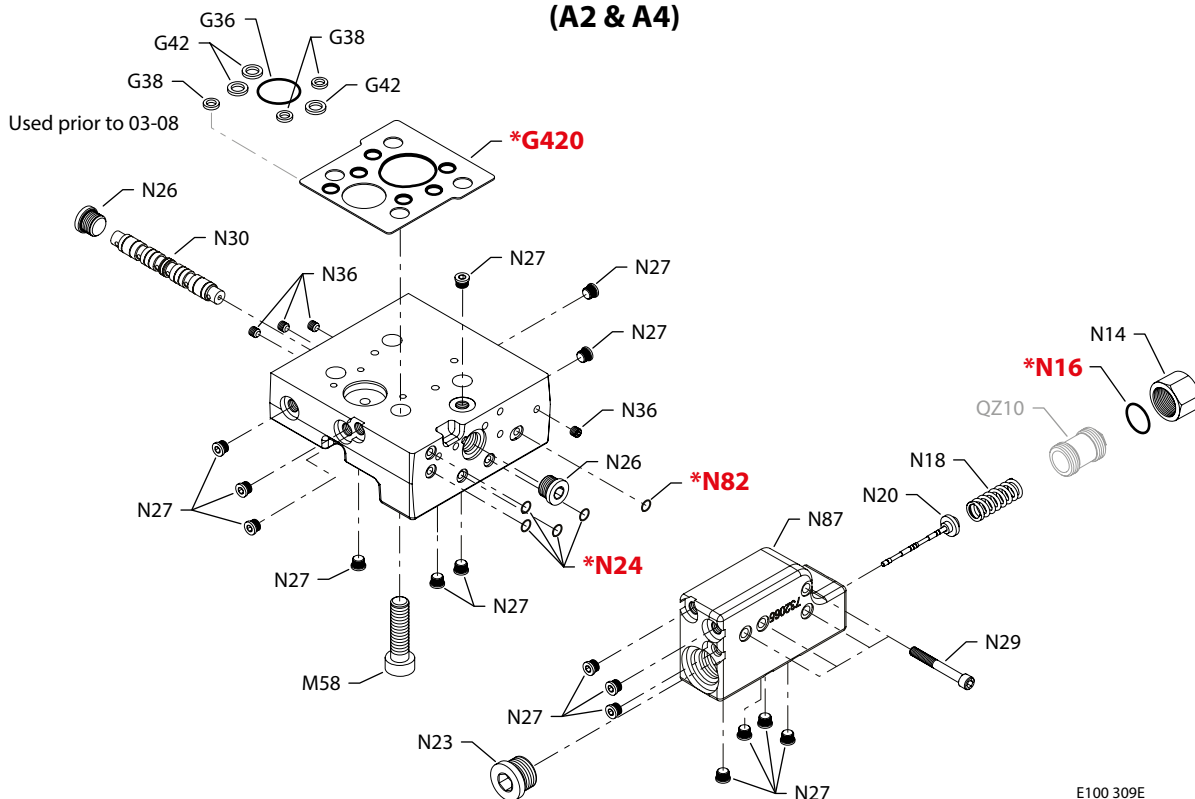


Variable Displacement Motor

(A1 & A3)



(A2 & A4)



* = included in base motor seal kit Q210

E100 309E

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

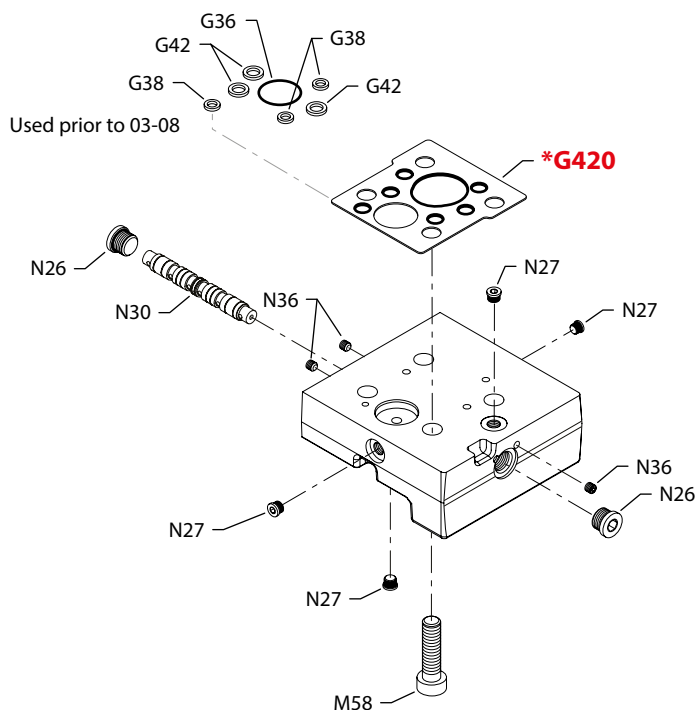
Servo pressure supply

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
A1 & A3	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	N14	92-07		342709 (9003575-0101)	Nut	1
	N16	92-07		001149 (9004201-6200)	O-ring	1
	N18	92-07		509152	Spring	1
	N20	92-07		746016	Relief valve	1
	N23	92-07		315325 (9005110-8700)	Plug assembly	1
	N24	92-07		732479 (9004105-0100)	O-ring	4
	N26	92-07		140644	Plug assembly	3
	N27	92-07		11040532	Plug assembly	18
	N29	92-07		713719 (9007314-0610)	Screw	4
	N30	92-07		519114	Shuttle valve assembly	1
	N32	92-07		346080	Spool	1
	N36	92-07		092114 (9007712-0604)	Set screw	4
	N58	92-07		732982	Screw	4
	N82	92-07		732479 (9004105-0100)	O-ring	1
	N84	92-07		735266	Stop assembly	2
	QN84	92-07		039297 (9004201-1200)	O-ring	2
	N87	92-07		503887	PCOR housing assembly	1
A2 & A4	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	N14	92-07		342709 (9003575-0101)	Nut	1
	N16	92-07		001149 (9004201-6200)	O-ring	1
	N18	92-07		509152	Spring	1
	N20	92-07		746016	Relief valve	1
	N23	92-07		315325 (9005110-8700)	Plug assembly	1
	N24	92-07		732479 (9004105-0100)	O-ring	4
	N26	92-07		140644	Plug assembly	2
	N27	92-07		11040532	Plug assembly	16
	N29	92-07		713719 (9007314-0610)	Screw	4
	N30	92-07		519114	Shuttle valve assembly	1
	N36	92-07		092114 (9007712-0604)	Set screw	4
	N58	92-07		732982	Screw	4
	N82	92-07		732479 (9004105-0100)	O-ring	1
	N87	92-07		503887	PCOR housing assembly	1

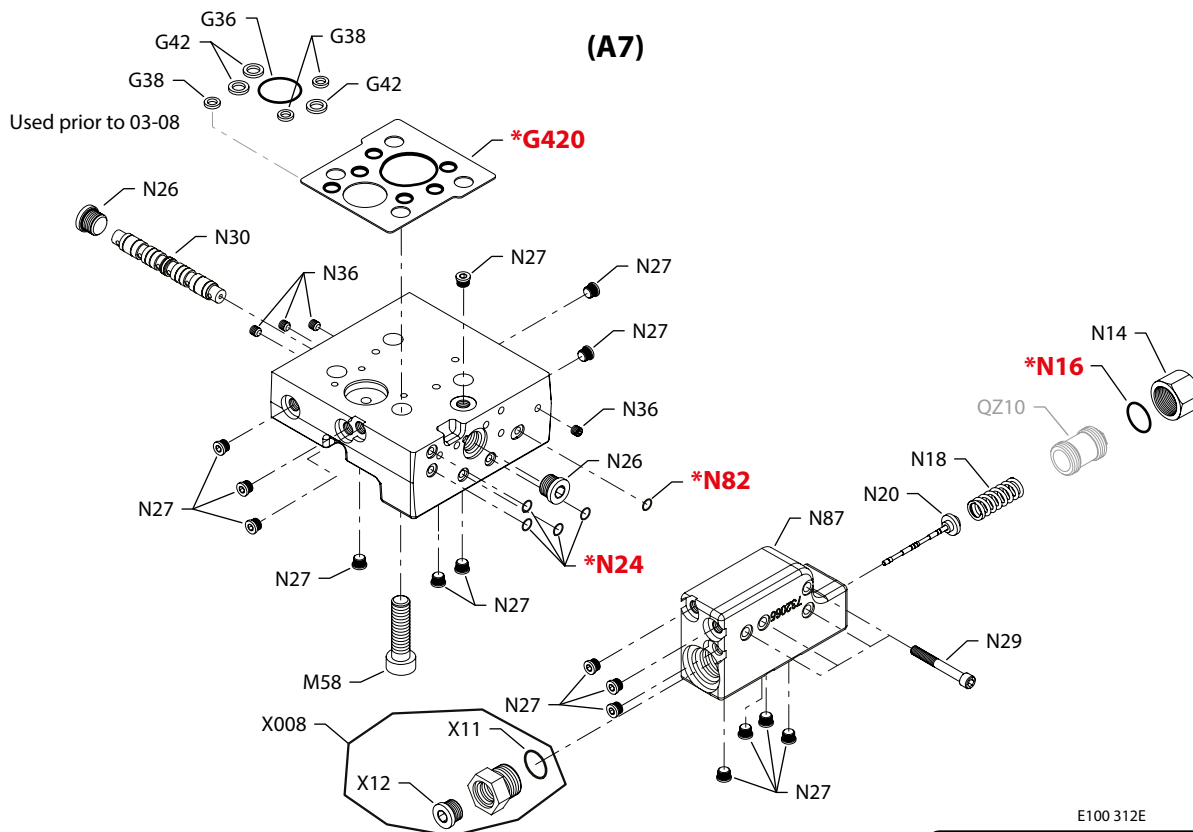


Variable Displacement Motor

(A5 & A6)



(A7)



* = included in base motor seal kit Q210

E100 312E

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

Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

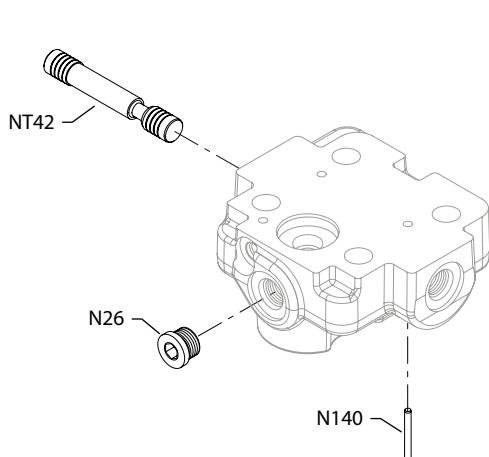
Servo pressure supply

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
A5 & A6	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	N26	92-07		140644	Plug assembly	2
	N27	92-07		11040532	Plug assembly	4
	N30	92-07		519114	Shuttle valve assembly	1
	N36	92-07		092114 (9007712-0604)	Set screw	4
	N58	92-07		732982	Screw	4
A7	G36	01-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	01-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	01-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	N14	01-07		342709 (9003575-0101)	Nut	1
	N16	01-07		001149 (9004201-6200)	O-ring	1
	N18	01-07		509152	Spring	1
	N20	01-07		746016	Relief valve	1
	N24	01-07		732479 (9004105-0100)	O-ring	4
	N26	01-07		140644	Plug assembly	2
	N27	01-07		11040532	Plug assembly	16
	N29	01-07		713719 (9007314-0610)	Screw	4
	N30	01-07		519114	Shuttle valve assembly	1
	N36	01-07		092114 (9007712-0604)	Set screw	4
	N58	01-07		732982	Screw	4
	N82	01-07		732479 (9004105-0100)	O-ring	1
	N87	01-07		503887	PCOR housing assembly	1
	X008	01-07		779587	Adapter plug assembly	1
	X11	01-07		001149 (9004201-6200)	O-ring	1
	X12	01-07		140644	Plug assembly	1

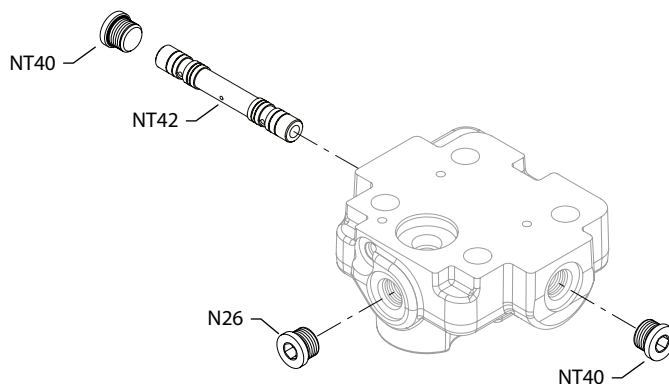


Variable Displacement Motor

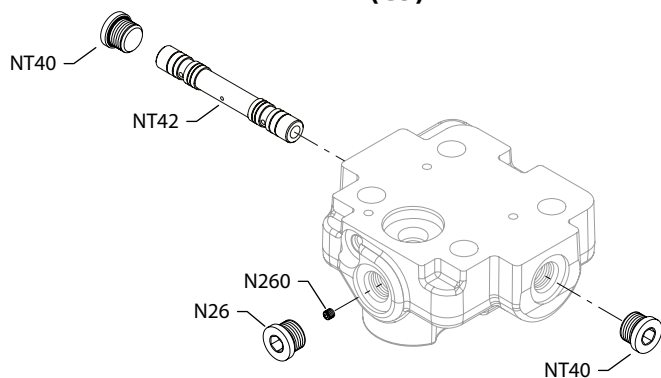
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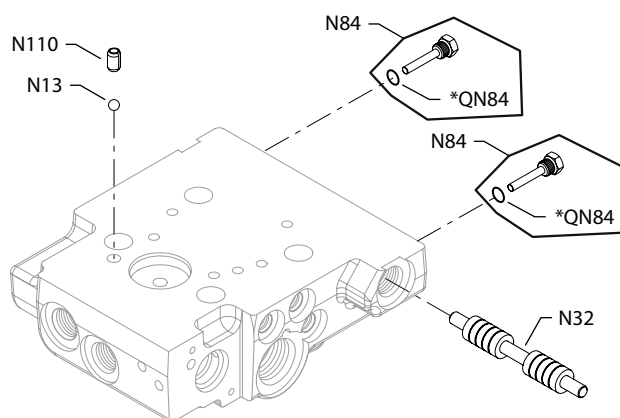
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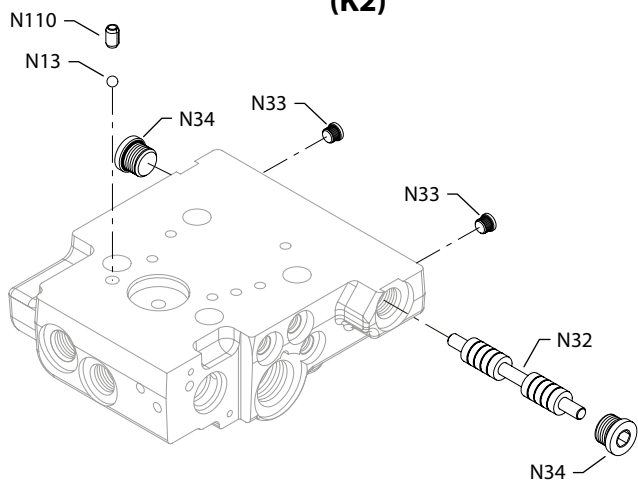
(C5)



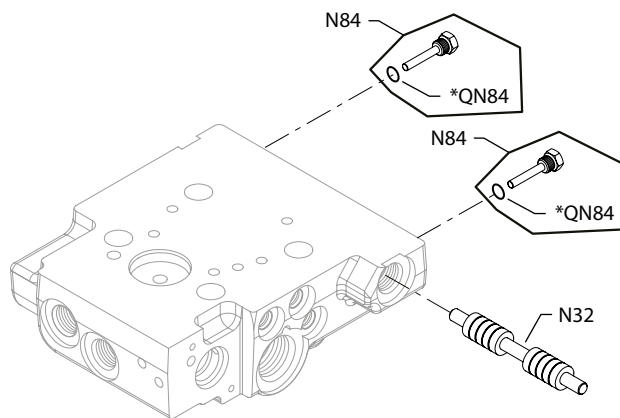
(K1)



(K2)



(K5)



E100 656E

* = included in base pump seal kit Q210

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

Parts Manual

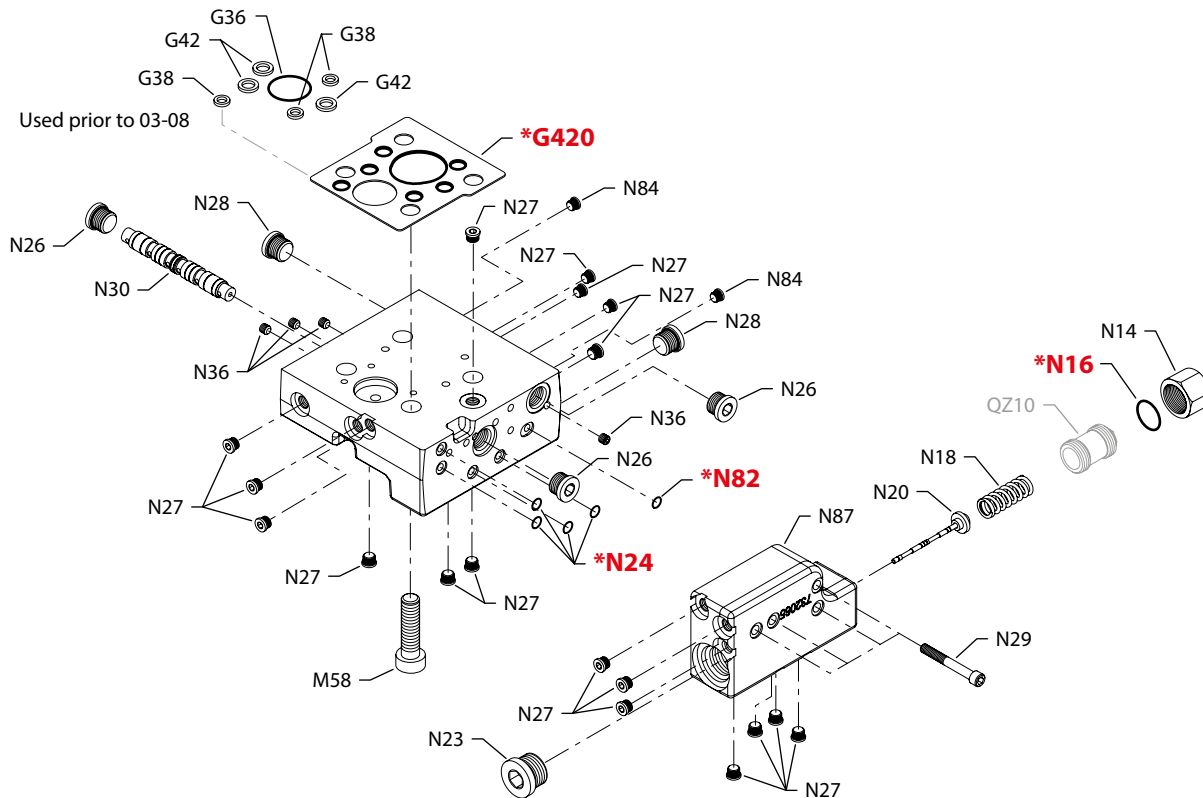
Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Servo pressure supply

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
B1, B2 & B3				No parts		
C0	N26	96-10		140644	Plug assembly	1
	N140	96-10		503503	Pin	1
	NT42	96-10		508175	Spool	1
C2	N26	95-15		140644	Plug assembly	1
	NT40	95-15		140644	Plug assembly	2
	NT42	95-15		508156	Spool	1
C5	N26	95-15		140644	Plug assembly	1
	N260	96-31		913897 (9007712-0605)	Set screw	1
	NT40	95-15		140644	Plug assembly	2
	NT42	95-15		508156	Spool	1
K1	N13	95-24		915967	Ball	1
	N32	95-24		346080	Spool	1
	N84	95-24		735266	Stop assembly	2
	N110	95-24		505522	Slotted pin	1
	QN84	95-24		039297 (9004201-1200)	O-ring	2
K2	N110	95-24		505522	Slotted pin	1
	N13	95-24		915967	Ball	1
	N32	95-24		505462	Spool	1
	N33	95-24		11040532	Plug assembly	2
	N34	95-15		140644	Plug assembly	2
K5	N32	95-24		346080	Piston	1
	N84	95-24		735266	Stop assembly	2
	QN84	95-24		039297 (9004201-1200)	O-ring	2

(L2, L4, R2 & R4)



This diagram illustrates the installation of screws into the rear of the unit. Two callouts show the N84 screws being inserted into the top and bottom rear panels, with the label '*QN84' indicating the screw type. A third callout shows the N32 screw being inserted into the bottom rear panel, with the label 'N32' indicating the screw type.

E100 313E

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

Parts Manual

Series 51 60cc Variable Displacement Motor

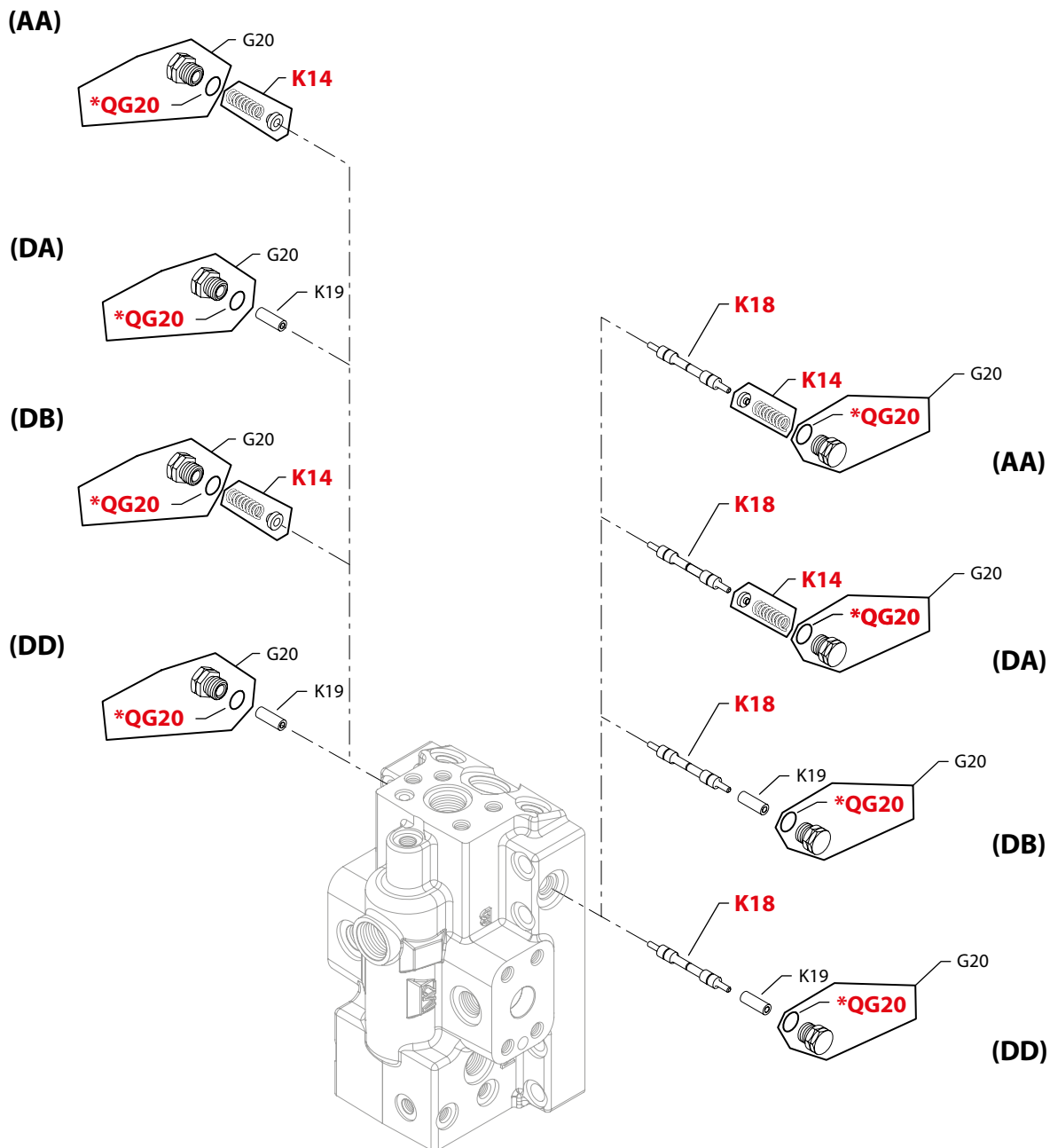
Variable Displacement Motor

Servo pressure supply

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
L2 & L4	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	N14	92-07		342709 (9003575-0101)	Nut	1
	N16	92-07		001149 (9004201-6200)	O-ring	1
	N18	92-07		509152	Spring	1
	N20	92-07		746016	Relief valve	1
	N23	92-07		315325 (9005110-8700)	Plug assembly	1
	N24	92-07		732479 (9004105-0100)	O-ring	4
	N26	92-07		140644	Plug assembly	3
	N27	92-07		11040532	Plug assembly	18
	N28	92-07		140644	Plug assembly	2
	N29	92-07		713719 (9007314-0610)	Screw	4
	N30	92-07		519114	Shuttle valve assembly	1
	N36	92-07		092114 (9007712-0604)	Set screw	4
	N58	92-07		732982	Screw	4
	N82	92-07		732479 (9004105-0100)	O-ring	1
	N84	92-07		11040532	Plug assembly	2
	N87	92-07		503887	PCOR housing assembly	1
M1	N32	95-24		346080	Piston	1
	N84	95-24		735266	Stop assembly	2
	QN84	95-24		039297 (9004201-1200)	O-ring	2
NN		No parts				
R2 & R4	G36	92-07	03-07	364968	O-ring (SB-2002-001)	1
	G38	92-07	03-07	792739	O-ring (SB-2002-001)	3
	G42	92-07	03-07	754580	O-ring (SB-2002-001)	3
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	N14	92-07		342709 (9003575-0101)	Nut	1
	N16	92-07		001149 (9004201-6200)	O-ring	1
	N18	92-07		509152	Spring	1
	N20	92-07		746016	Relief valve	1
	N23	92-07		315325 (9005110-8700)	Plug assembly	1
	N24	92-07		732479 (9004105-0100)	O-ring	4
	N26	92-07		140644	Plug assembly	3
	N27	92-07		11040532	Plug assembly	18
	N28	92-07		140644	Plug assembly	2
	N29	92-07		713719 (9007314-0610)	Screw	4
	N30	92-07		519114	Shuttle valve assembly	1
	N36	92-07		092114 (9007712-0604)	Set screw	4
	N58	92-07		732982	Screw	4
	N82	92-07		732479 (9004105-0100)	O-ring	1
	N84	92-07		11040532	Plug assembly	2
	N87	92-07		503887	PCOR housing assembly	1



Variable Displacement Motor



E103 131E

* = included in base motor seal kit Q210

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

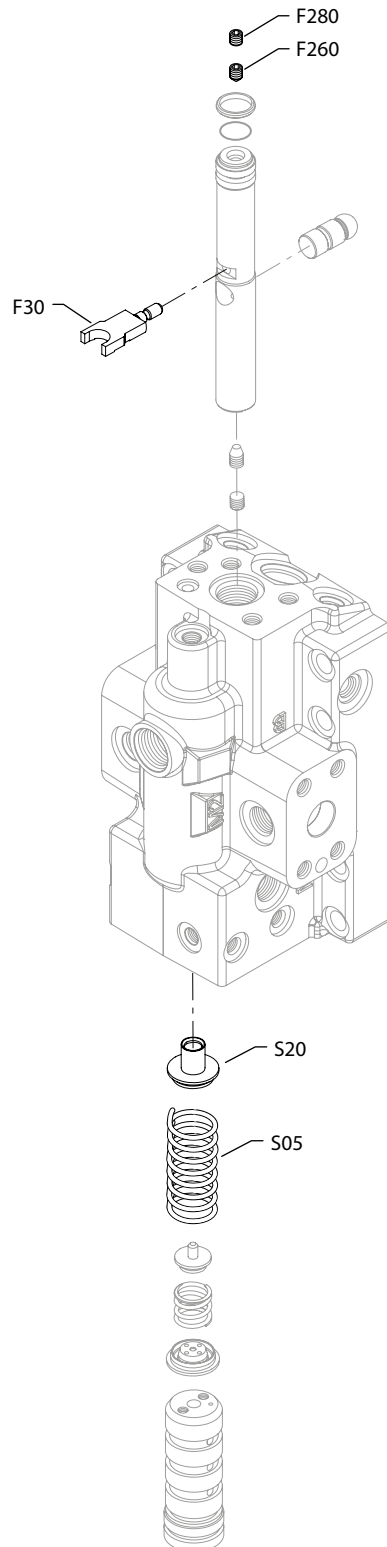

Variable Displacement Motor
Loop flushing

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
AA	G20	92-07		518016	Plug assembly	2
	K14	92-07		513596	Spring seat assembly SB-2000-044)	2
	K18	92-07		367789	Loop flushing spool	1
	QG20	92-07		085043 (9004201-3700)	O-ring	2
DA	G20	11-15		518016	Plug assembly	2
	K14	11-15		513596	Spring seat assembly	1
	K18	11-15		367789	Loop flushing spool	1
	K19	11-15		11020889	Spacer	1
	QG20	11-15		085043 (9004201-3700)	O-ring	2
DB	G20	11-15		518016	Plug assembly	2
	K14	11-15		513596	Spring seat assembly	1
	K18	11-15		367789	Loop flushing spool	1
	K19	11-15		11020889	Spacer	1
	QG20	11-15		085043 (9004201-3700)	O-ring	2
DD	G20	11-15		518016	Plug assembly	2
	K18	11-15		367789	Loop flushing spool	1
	K19	11-15		11020889	Spacer	2
	QG20	11-15		085043 (9004201-3700)	O-ring	2
NN				No parts		



Variable Displacement Motor

(A, B, D, E, H, J, K,
L, U, Y & Z)



Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Control ramp common parts

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
	F30	92-07		733105	Servo piston link	1
	F260	92-07		733089	Set screw	1
	F280	92-07		010397 (9007712-0606)	Set screw	1

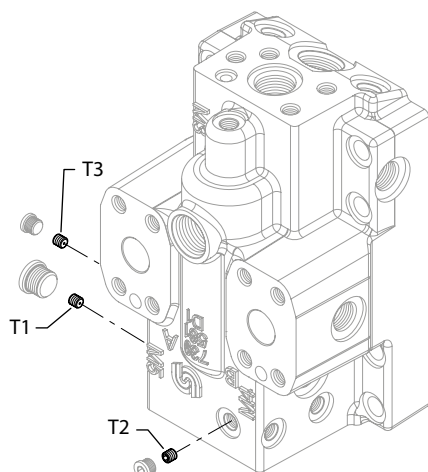
Control ramp

A & B	S05	95-36		729145	Spring	1
	S20	95-36		722256	Spring guide	1
D	S05	92-07		729160	Spring	1
	S20	92-07		722256	Spring guide	1
E	S05	92-07		729145	Spring	1
	S20	92-07		722256	Spring guide	1
H	S05	92-07		729186	Spring	1
	S20	92-07		722256	Spring guide	1
J	S05	99-35		729186	Spring	1
	S20	99-35		722256	Spring guide	1
K	S05	99-35		729186	Spring	1
	S20	99-35		722256	Spring guide	1
L	S05	92-07		729145	Spring	1
	S20	92-07		722256	Spring guide	1
N No parts						
U	S05	92-07		729178	Spring	1
	S20	92-07		722256	Spring guide	1
Y	S05	92-07		729186	Spring	1
	S20	92-07		722256	Spring guide	1
Z	S05	92-07		729194	Spring	1
	S20	92-07		722256	Spring guide	1

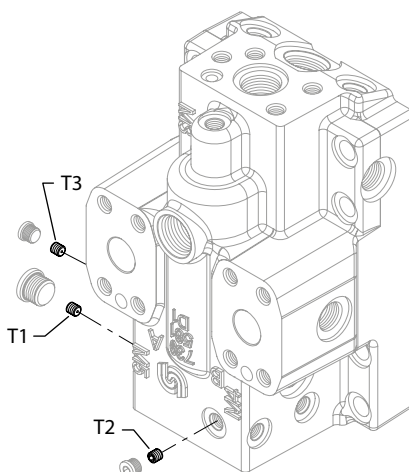


Variable Displacement Motor

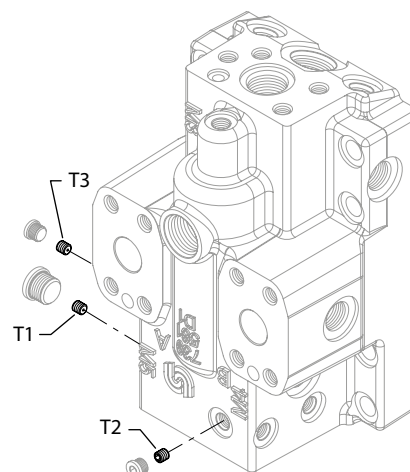
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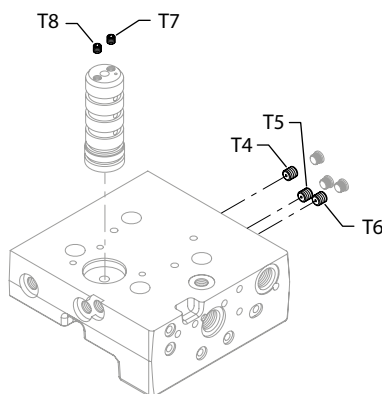
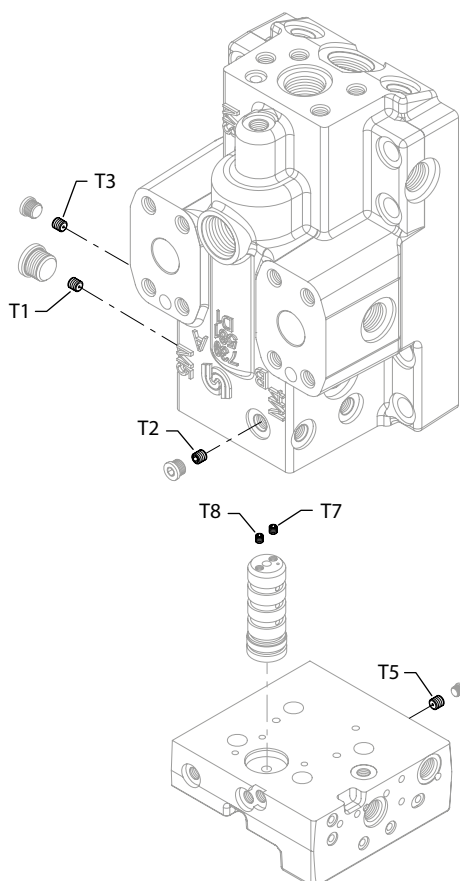
(A2, A8 & B6)



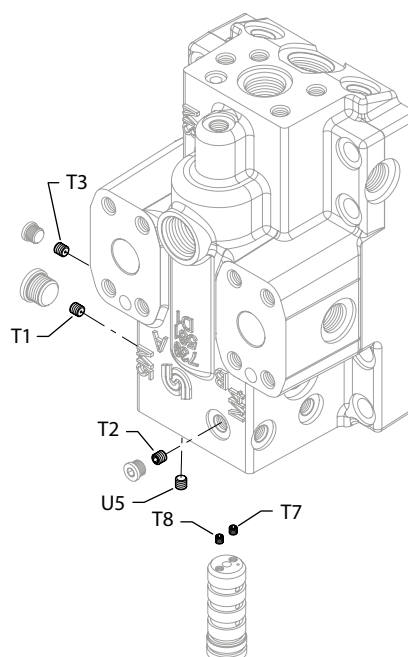
(A6)



(A7)



(A9)



Parts Manual

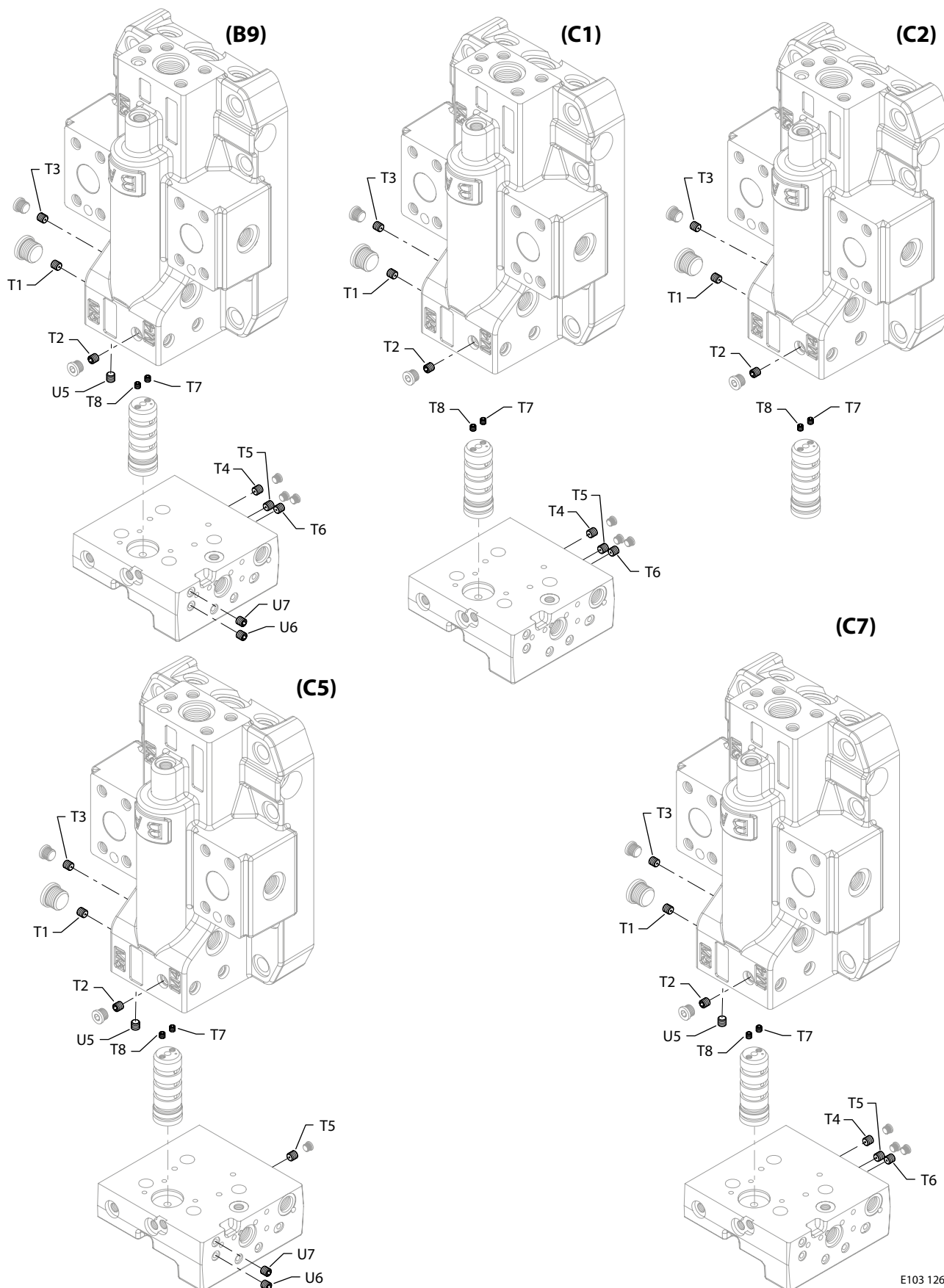
Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
A0	T1	92.38		913897 (9007712-0605)	Set screw	1
	T2	92.38		913897 (9007712-0605)	Set screw	1
	T3	92.38		913897 (9007712-0605)	Set screw	1
A2	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
A6	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
A7	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
A8	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		913897 (9007712-0605)	Set screw	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
A9	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
B6	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		913897 (9007712-0605)	Set screw	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1

Variable Displacement Motor



Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

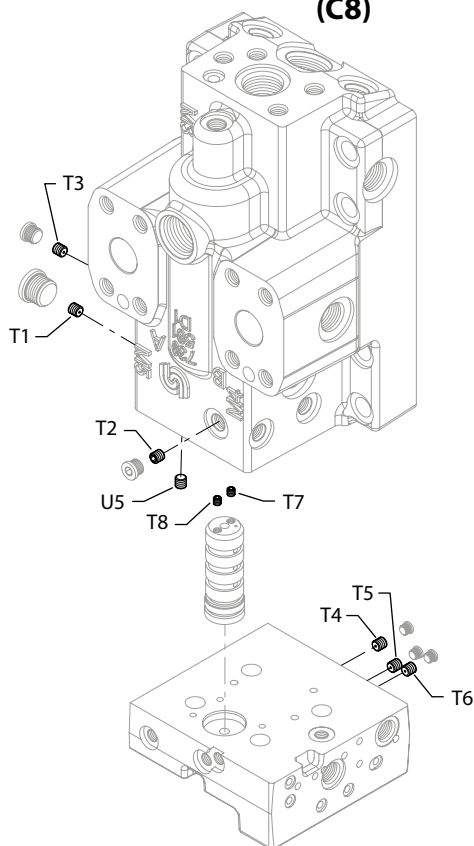
Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
B9	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		679316	Orifice. 0.5, M6 x 8	1
	T3	92-07		679316	Orifice. 0.5, M6 x 8	1
	T4	92-07		578542	Orifice. 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		511825	Orifice. 0.6, M6 x 8	1
	U7	92-07		511825	Orifice. 0.6, M6 x 8	1
C0			No parts			
C1	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T4	92-07		913897 (9007712-0605)	Set screw	1
	T5	92-07		578542	Orifice. 0.8, M6 x 8	1
	T6	92-07		913897 (9007712-0605)	Set screw	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
C2	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
C5	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T5	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		511825	Orifice. 0.6, M6 x 8	1
	U7	92-07		511825	Orifice. 0.6, M6 x 8	1
C7	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T4	92-07		578542	Orifice. 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		913897 (9007712-0605)	Set screw	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1

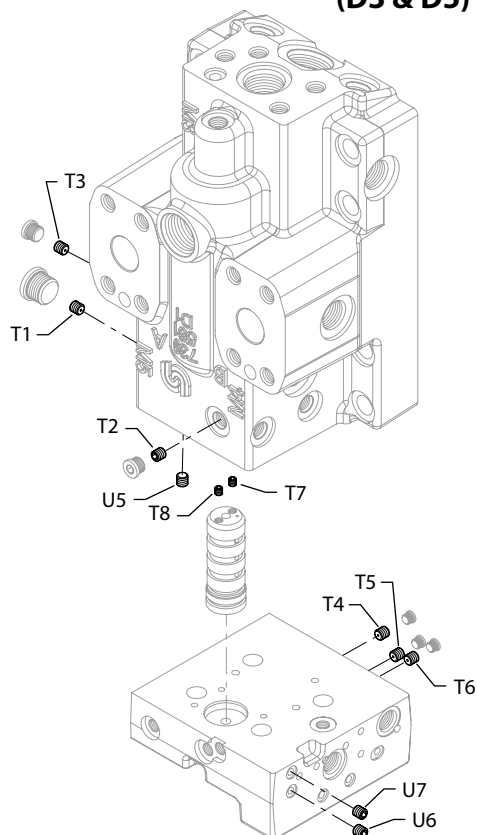


Variable Displacement Motor

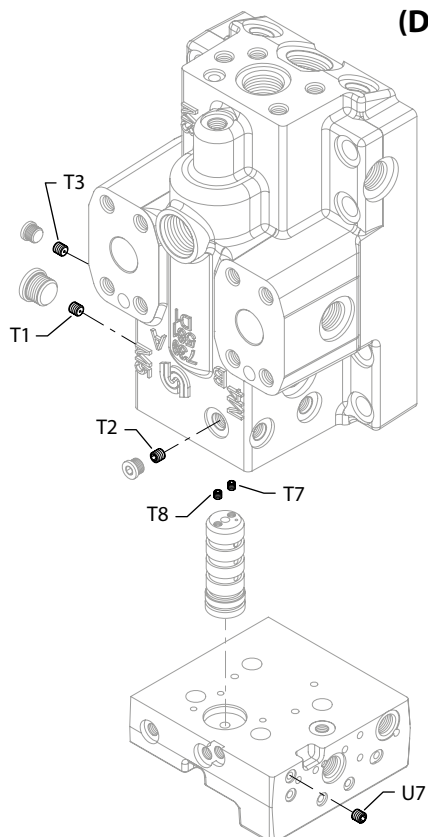
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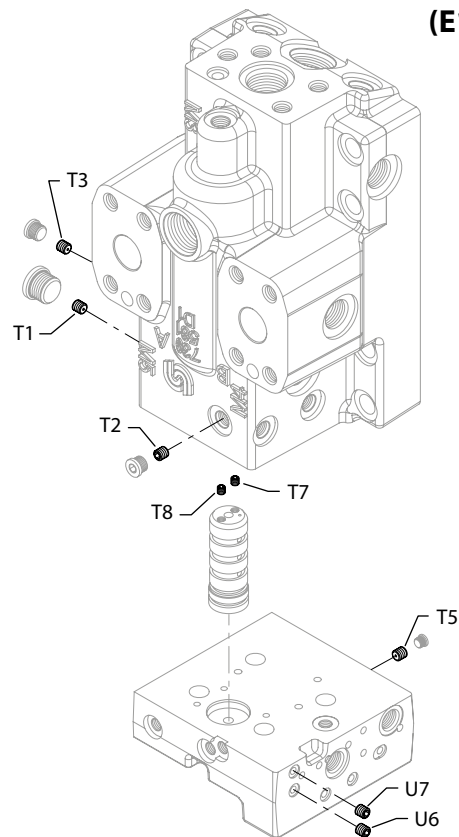
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(D7)



(E1)



E103 127E

Parts Manual

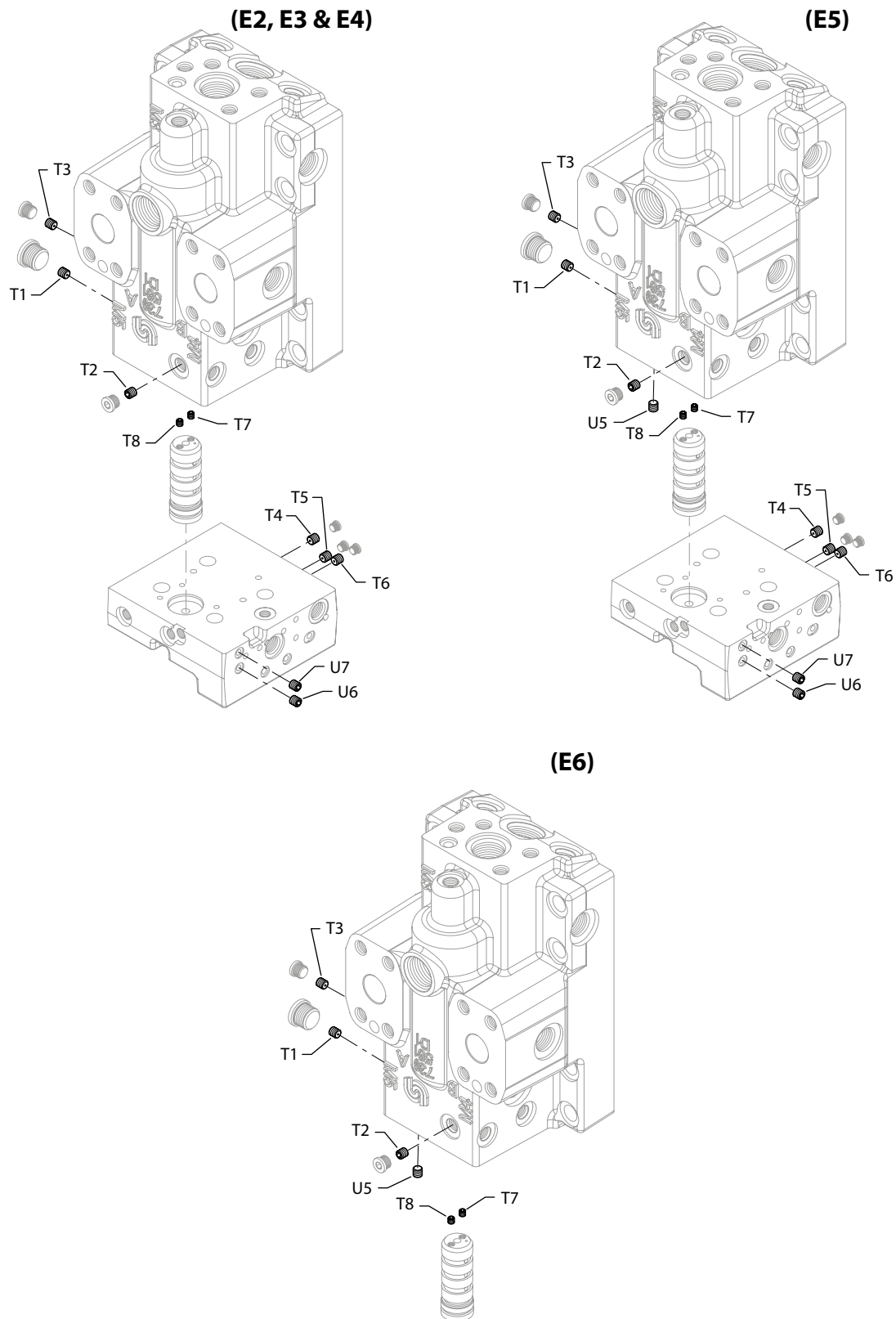
Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
C8	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T4	92-07		913897 (9007712-0605)	Set screw	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
D3	T1	92-07		578542	Orifice. 0.8, M6 x 8	1
	T2	92-07		511825	Orifice. 0.6, M6 x 8	1
	T3	92-07		511825	Orifice. 0.6, M6 x 8	1
	T4	92-07		913897 (9007712-0605)	Set screw	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
D5	T1	92-07		578542	Orifice. 0.8, M6 x 8	1
	T2	92-07		511825	Orifice. 0.6, M6 x 8	1
	T3	92-07		511825	Orifice. 0.6, M6 x 8	1
	T4	92-07		578542	Orifice. 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		913897 (9007712-0605)	Set screw	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
D7	T1	92-07		578542	Orifice. 0.8, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		511825	Orifice. 0.6, M6 x 8	1
	T8	92-07		511825	Orifice. 0.6, M6 x 8	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1
E1	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	T5	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U6	92-07		044081	Orifice. 0.7, M6 x 8	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1

Variable Displacement Motor



Parts Manual

Series 51 60cc Variable Displacement Motor

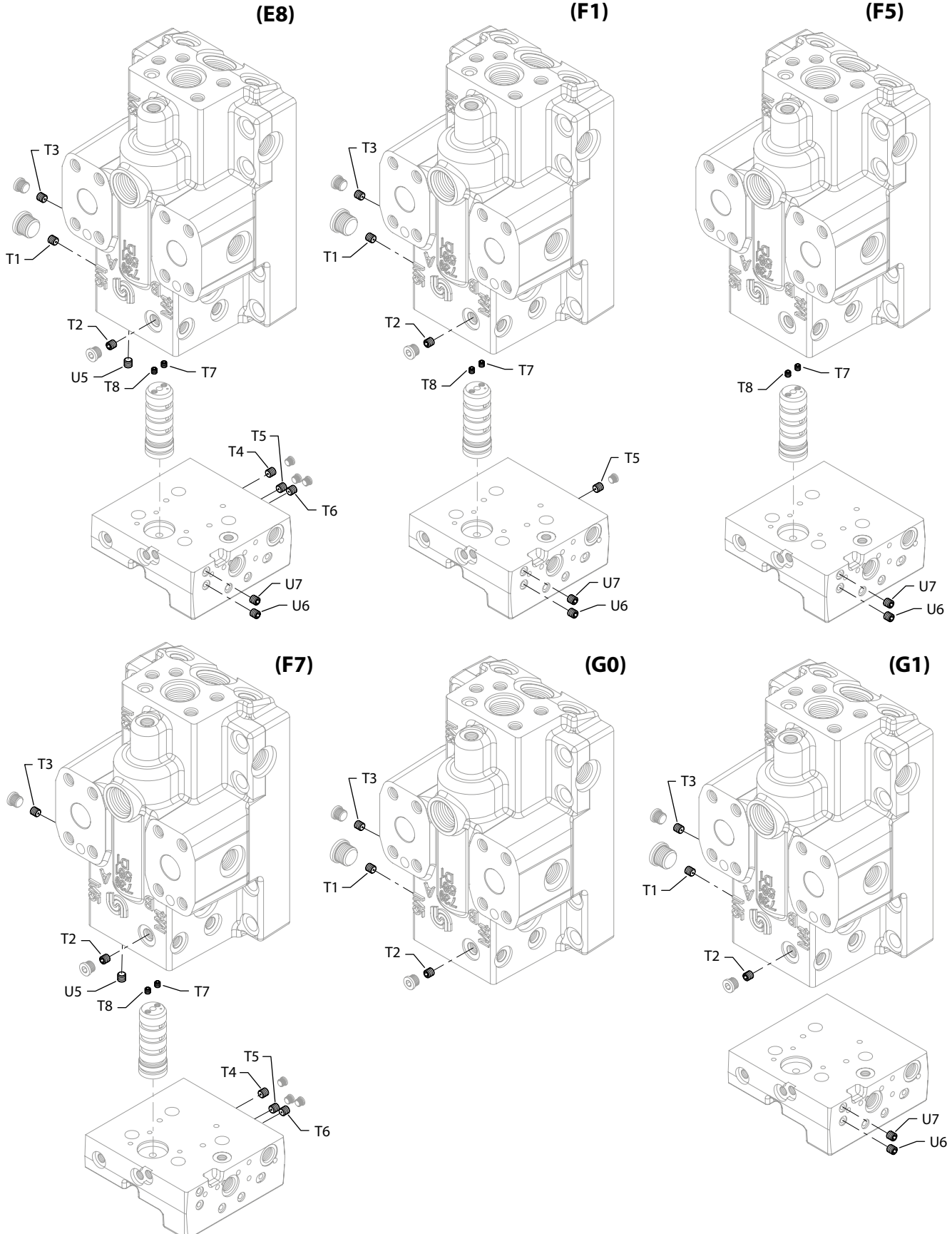
Variable Displacement Motor

Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
E2	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U6	92-07		044081	Orifice. 0.7, M6 x 8	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1
E3	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		913897 (9007712-0605)	Set screw	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U6	92-07		044081	Orifice. 0.7, M6 x 8	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1
E4	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		913897 (9007712-0605)	Set screw	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U6	92-07		044081	Orifice. 0.7, M6 x 8	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1
E5	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		511825	Orifice. 0.6, M6 x 8	1
E6	U7	92-07		511825	Orifice. 0.6, M6 x 8	1
	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1



Variable Displacement Motor



Parts Manual

Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

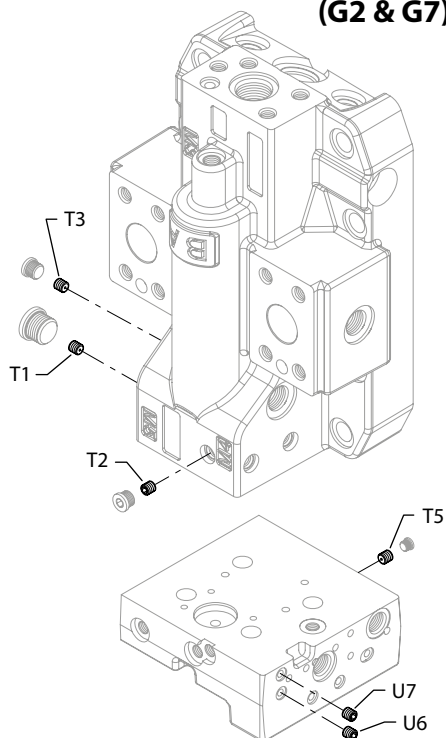
Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
E8	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		913897 (9007712-0605)	Set screw	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		511825	Orifice. 0.6, M6 x 8	1
	U7	92-07		511825	Orifice. 0.6, M6 x 8	1
F1	T1	92-07		679316	Orifice. 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U6	92-07		578542	Orifice, 0.8, M6 x 8	1
	U7	92-07		578542	Orifice, 0.8, M6 x 8	1
F5	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U6	92-07		913897 (9007712-0605)	Set screw	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1
F7	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
G0	T1	92-07		578542	Orifice, 0.8, M6 x 8	1
	T2	92-07		679316	Orifice. 0.5, M6 x 8	1
	T3	92-07		679316	Orifice. 0.5, M6 x 8	1
G1	T1	92-07		578542	Orifice, 0.8, M6 x 8	1
	T2	92-07		679316	Orifice. 0.5, M6 x 8	1
	T3	92-07		679316	Orifice. 0.5, M6 x 8	1
	U6	92-07		578542	Orifice, 0.8, M6 x 8	1
	U7	92-07		578542	Orifice, 0.8, M6 x 8	1

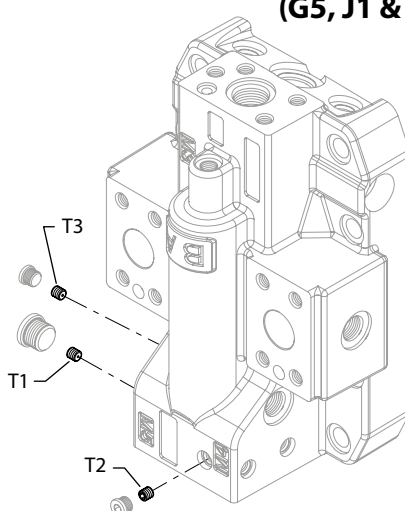


Variable Displacement Motor

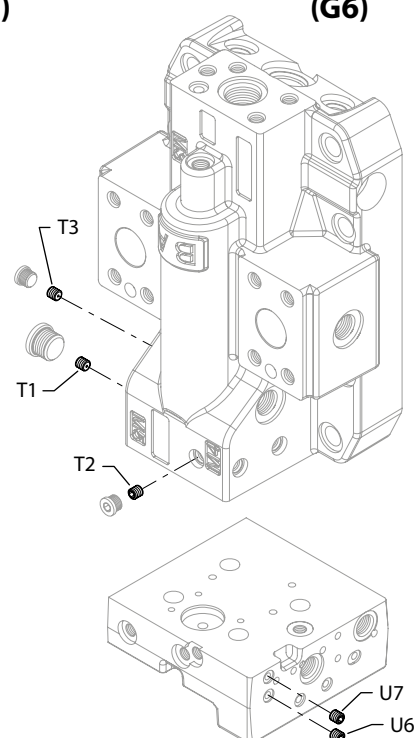
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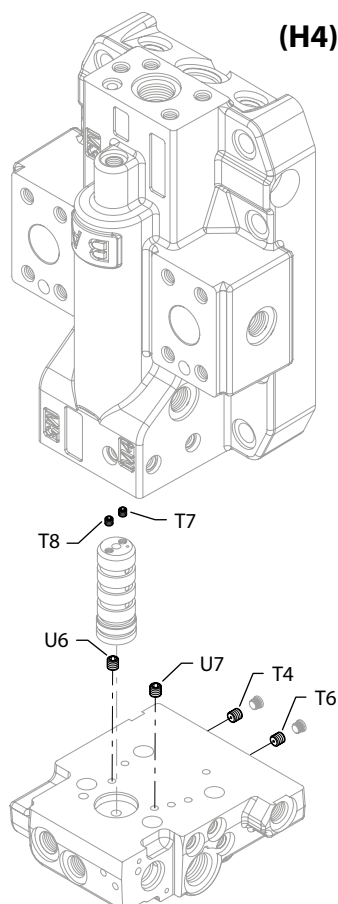
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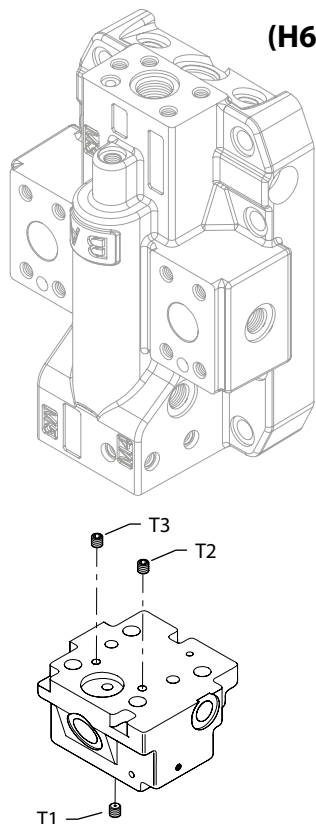
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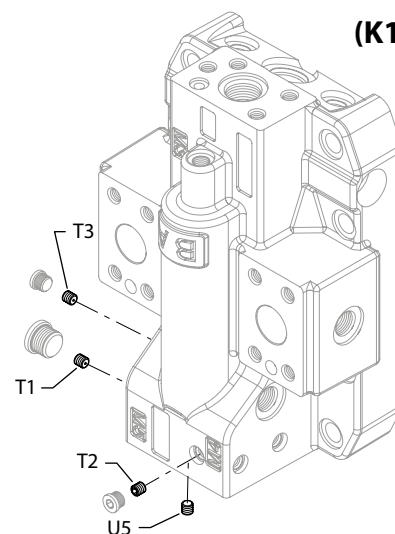
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(H6)



(K1)



Parts Manual

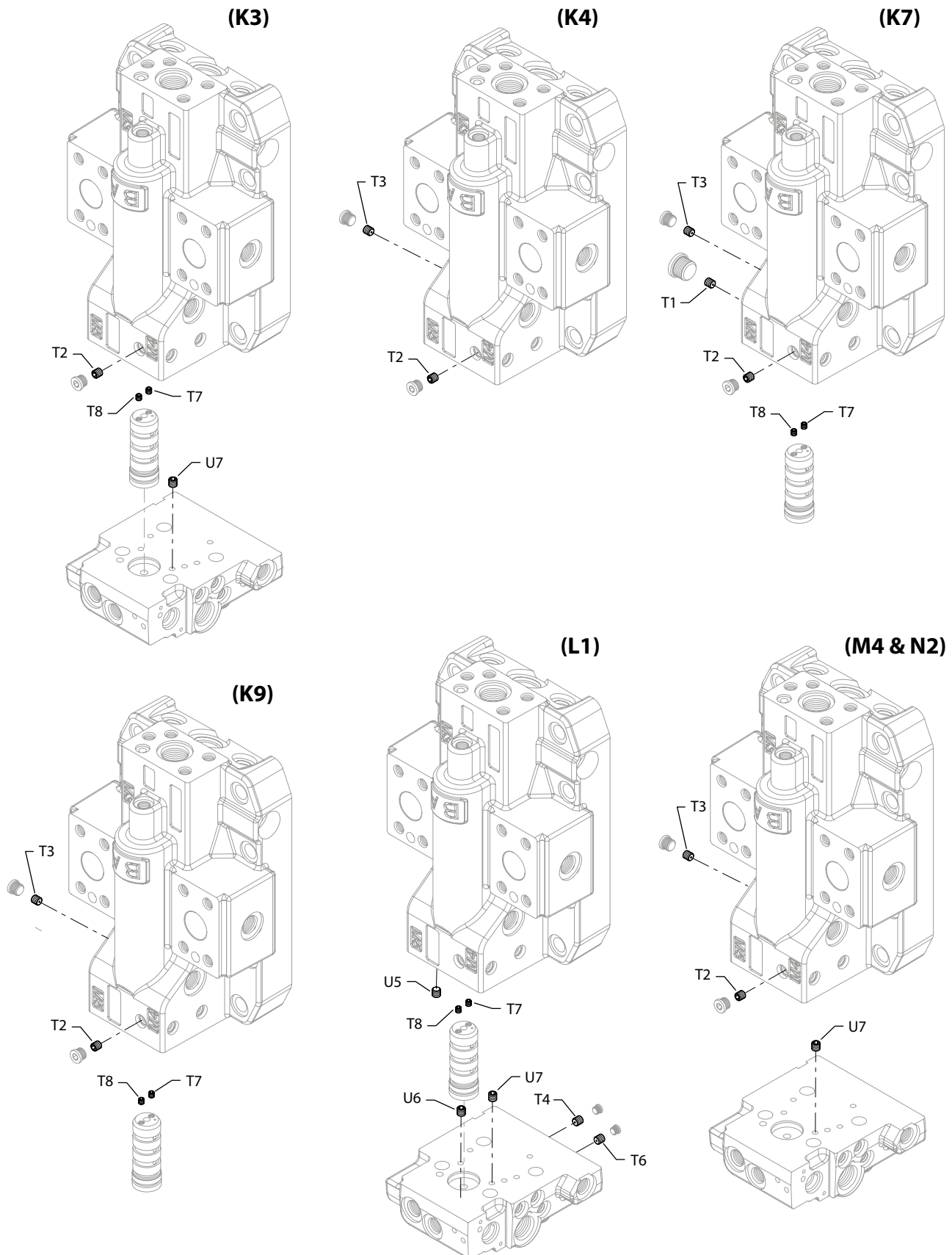
Series 51 60cc Variable Displacement Motor

Variable Displacement Motor

Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
G2	T1	92-07		578542	Orifice, 0.8, M6 x 8	1
	T2	92-07		679316	Orifice, 0.5, M6 x 8	1
	T3	92-07		679316	Orifice, 0.5, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		578542	Orifice, 0.8, M6 x 8	1
	U7	92-07		578542	Orifice, 0.8, M6 x 8	1
G5	T1	92-07		679316	Orifice, 0.5, M6 x 8	1
	T2	92-07		679316	Orifice, 0.5, M6 x 8	1
	T3	92-07		679316	Orifice, 0.5, M6 x 8	1
G6	T1	92-07		679316	Orifice, 0.5, M6 x 8	1
	T2	92-07		679316	Orifice, 0.5, M6 x 8	1
	T3	92-07		679316	Orifice, 0.5, M6 x 8	1
	U6	92-07		578542	Orifice, 0.8, M6 x 8	1
	U7	92-07		578542	Orifice, 0.8, M6 x 8	1
G7	T1	92-07		679316	Orifice, 0.5, M6 x 8	1
	T2	92-07		679316	Orifice, 0.5, M6 x 8	1
	T3	92-07		679316	Orifice, 0.5, M6 x 8	1
	T5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		578542	Orifice, 0.8, M6 x 8	1
	U7	92-07		578542	Orifice, 0.8, M6 x 8	1
H4	T4	92-07		578542	Orifice, 0.8, M6 x 8	1
	T6	92-07		578542	Orifice, 0.8, M6 x 8	1
	T7	92-07		639096	Orifice, 0.6, M5 x 6	1
	T8	92-07		639096	Orifice, 0.6, M5 x 6	1
	U6	92-07		044081	Orifice, 0.7, M6 x 8	1
	U7	92-07		044081	Orifice, 0.7, M6 x 8	1
H6	T1	92-07		679316	Orifice, 0.5, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
J1	T1	92-07		578542	Orifice, 0.8, M6 x 8	1
	T2	92-07		578542	Orifice, 0.8, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
J2	T1	92-07		511825	Orifice, 0.6, M6 x 8	1
	T2	92-07		511825	Orifice, 0.6, M6 x 8	1
	T3	92-07		511825	Orifice, 0.6, M6 x 8	1
K1	T1	92-07		679316	Orifice, 0.5, M6 x 8	1
	T2	92-07		679316	Orifice, 0.5, M6 x 8	1
	T3	92-07		679316	Orifice, 0.5, M6 x 8	1
	U5	92-07		913897 (9007712-0605)	Set screw	1

Variable Displacement Motor



Parts Manual

Series 51 60cc Variable Displacement Motor

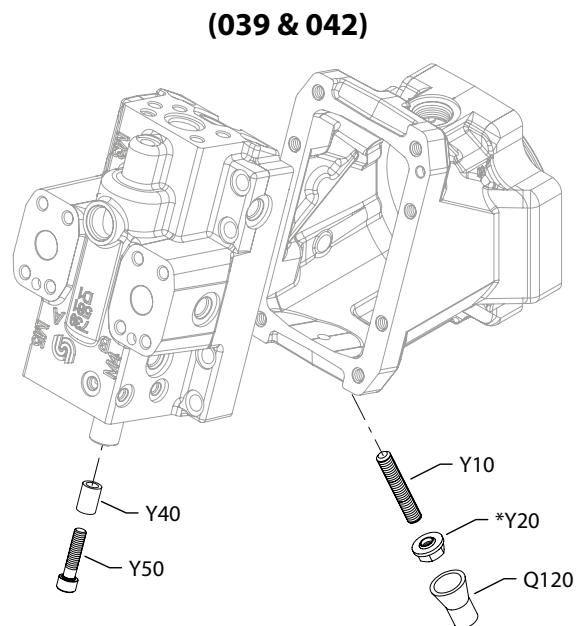
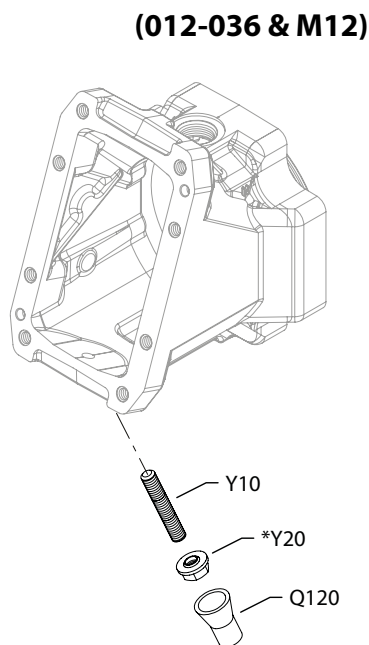
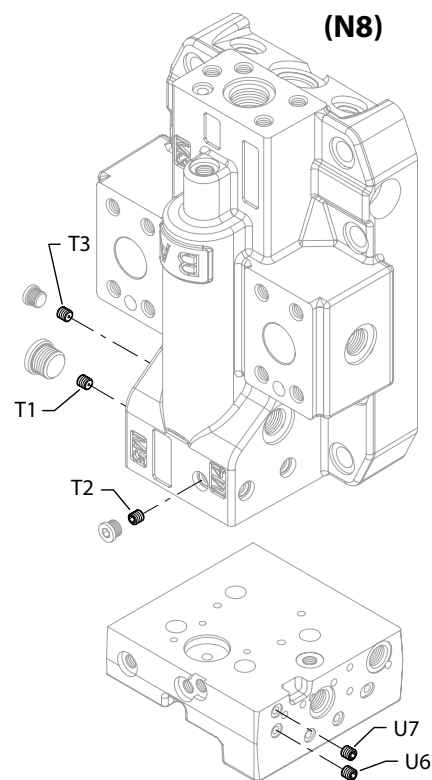
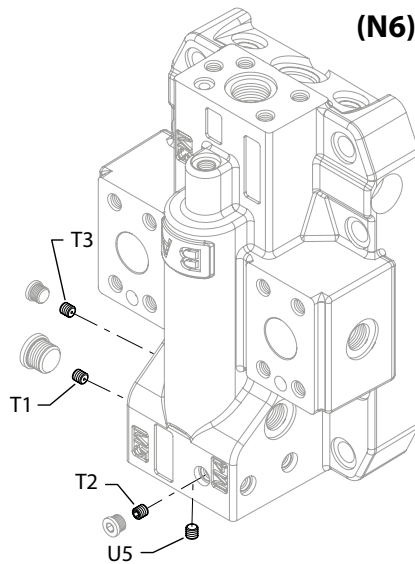
Variable Displacement Motor

Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
K3	T2	92-07		511825	Orifice. 0.6, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U7	92-07		511825	Orifice. 0.6, M6 x 8	1
K4	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
K7	T1	92-07		578542	Orifice. 0.8, M6 x 8	1
	T2	92-07		679316	Orifice. 0.5, M6 x 8	1
	T3	92-07		679316	Orifice. 0.5, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
K9	T2	92-07		679316	Orifice. 0.5, M6 x 8	1
	T3	92-07		679316	Orifice. 0.5, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
L1	T4	92-07		578542	Orifice. 0.8, M6 x 8	1
	T6	92-07		578542	Orifice. 0.8, M6 x 8	1
	T7	92-07		639096	Orifice. 0.6, M5 x 6	1
	T8	92-07		639096	Orifice. 0.6, M5 x 6	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
	U6	92-07		044081	Orifice. 0.7, M6 x 8	1
	U7	92-07		044081	Orifice. 0.7, M6 x 8	1
M4	T2	92-07		578542	Orifice. 0.8, M6 x 8	1
	T3	92-07		578542	Orifice. 0.8, M6 x 8	1
	U7	92-07		511825	Orifice. 0.6, M6 x 8	1
N2	T2	92-07		511825	Orifice. 0.6, M6 x 8	1
	T3	92-07		511825	Orifice. 0.6, M6 x 8	1
	U7	92-07		511825	Orifice. 0.6, M6 x 8	1

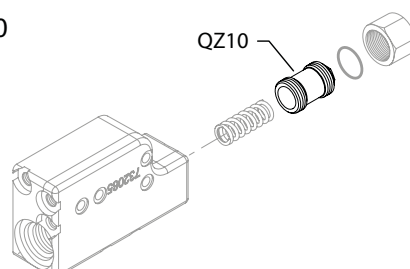


Variable Displacement Motor



(11-37)

* = included in base motor seal kit Q210



Variable Displacement Motor
Orifice

Order code	Item	Date begin	Date end	Part number	Part name	Qty. per model/kit
N6	T1	92-07		511825	Orifice. 0.6, M6 x 8	1
	T2	92-07		511825	Orifice. 0.6, M6 x 8	1
	T3	92-07		511825	Orifice. 0.6, M6 x 8	1
	U5	92-07		913897 (9007712-0605)	Set screw	1
N8	T1	92-07		578542	Orifice, 0.8, M6 x 8	1
	T2	92-07		679316	Orifice, 0.5, M6 x 8	1
	T3	92-07		578542	Orifice, 0.8, M6 x 8	1
	U6	92-07		578542	Orifice, 0.8, M6 x 8	1
	U7	92-07		578542	Orifice, 0.8, M6 x 8	1

Minimum displacement

012-029	Q120	92-07		770834	Safety cap	1
	Y10	92-07		750638	Set screw, M10 x 65	1
	Y20	92-07		042432	Seal nut, M10	1
030-040	Q120	92-07		770834	Safety cap	1
	Y10	92-07		749556	Set screw, M10 x 80	1
	Y20	92-07		042432	Seal nut, M10	1
039	Q120	92-07		770834	Safety cap	1
	Y10	92-07		041103	Set screw, M10 x 40	1
	Y20	92-07		042432	Seal nut, M10	1
	Y40	92-07		781906	Spacer, 18.5 mm	1
	Y50	92-07		710855	Screw, M8 x 35	1
042	Q120	92-07		770834	Safety cap	1
	Y10	92-07		041103	Set screw, M10 x 40	1
	Y20	92-07		042432	Seal nut, M10	1
	Y40	92-07		11001123	Spacer, 20.5 mm	1
	Y50	92-07		710855	Screw, M8 x 35	1
M12	Q120	92-07		770834	Safety cap	1
	Y10	92-07		041103	Set screw, M10 x 40	1
	Y20	92-07		042432	Seal nut, M10	1

PCOR adjuster

00		No parts				
11-26	QZ10	92-07		11112452	Adjuster, 70-260 bar	1
27-37	QZ10	92-07		11112453	Adjuster, 270-420 bar	1
A1-C7		No parts				


Variable Displacement Motor
Overhaul seal kit

Order Code	Item	Date Begin	Date End	Part Number	Part Name	Qty. per Model/Kit
	Q210	92-07		11122311	Overhaul seal kit, S51 60cc	1
	B80C	92-07		726927	O-ring	1
	B80V	92-07		930511	O-ring	1
	F10	92-07		508131	Seal ring	1
	F11	92-07		015404	O-ring	1
	F324	92-07		730036	O-ring	2
	G100	92-07		792739	O-ring	1
	G36	92-07		071878 (9004105-1190)	O-ring	1
	G420	03-08		511810	Gasket/O-ring seal (SB-2002-001)	1
	G60	92-07		515733	End cap gasket	1
	J50	92-07		732479 (9004105-0100)	O-ring	1
	K50	92-07		001149 (9004201-6200)	O-ring	1
	K51	92-07		085043 (9004201-3700)	O-ring	1
	L40	92-07		519021	Lip seal	1
	L40	92-07		9008000-0114	Lip seal	1
	L50C	92-07		501879	O-ring	1
	L50D	92-07		767962	O-ring	1
	L50V	92-07		917088	O-ring	1
	L82	92-07		501019	Gasket, 51C060	1
	M12D	92-07		504358	Gasket	1
	M12H	92-07		364984	O-ring	1
	M12N	92-07		730036	O-ring	1
	M16E	92-07		732479 (9004105-0100)	O-ring	2
	M16J	92-07		001149 (9004201-6200)	O-ring	1
	M16N	92-07		084673	Seal ring	1
	M211	92-07		365015	O-ring	1
	M242	92-07		056770	O-ring	1
	M24P	92-07		732479 (9004105-0100)	O-ring	4
	M30	92-07		056770	O-ring	1
	M30H	92-07		011296 (9004105-0120)	O-ring	2
	M36	92-07		732479 (9004105-0100)	O-ring	1
	M38	92-07		011395	O-ring	1
	M82	92-07		732479 (9004105-0100)	O-ring	1
	M95	92-07		9004104-0120	O-ring	2
	M96	92-07		9004104-0140	O-ring	1
	M97	92-07		9004104-0240	O-ring	1
	N16	92-07		001149 (9004201-6200)	O-ring	1
	N24	92-07		732479 (9004105-0100)	O-ring	4
	N82	92-07		732479 (9004105-0100)	O-ring	1
	QG20	92-07		085043 (9004201-3700)	O-ring	2
	QL81	92-07		039297 (9004201-1200)	O-ring	2
	QM84	92-07		039297 (9004201-1200)	O-ring	2
	QN84	92-07		039297 (9004201-1200)	O-ring	2
	QW30	92-07		085043 (9004201-3700)	O-ring	1
	X11	92-07		001149 (9004201-6200)	O-ring	1
	Y20	92-07		042432	Seal nut	1

Service Bulletin: SB-1993-006

Products affected All Series 51 motors

Subject End cap gasket change.

Description Effective immediately, a new end cap gasket has been incorporated on all Series 51 motors. It is a direct replacement for the current gasket. The visible differences between the two gaskets are:

1. The new gasket is thicker. It measures .040" versus .030".
2. The new gasket has a red tint to the surface.

The new gasket is a stand alone gasket which should not be used with any sealing aid. The current torque values stay the same.

The new gaskets are now available and **MUST** be used in any repair or conversion.

Models affected All series 51 motors

Serial numbers N/A

Part numbers affected

Frame size	Old part number	New part number
60cc	729228	501198
80cc	734368	501199
110cc	734376	501200
160cc	734384	501201
250cc	734392	501202

Parts disposition

- Interchangeable
- Scrap used parts
- Order replacement parts
- Revise existing part orders



Service Bulletin: SB-1995-013

Products affected

Series 51: 60cc-250cc motors

Subject

Threshold adjustment screw.

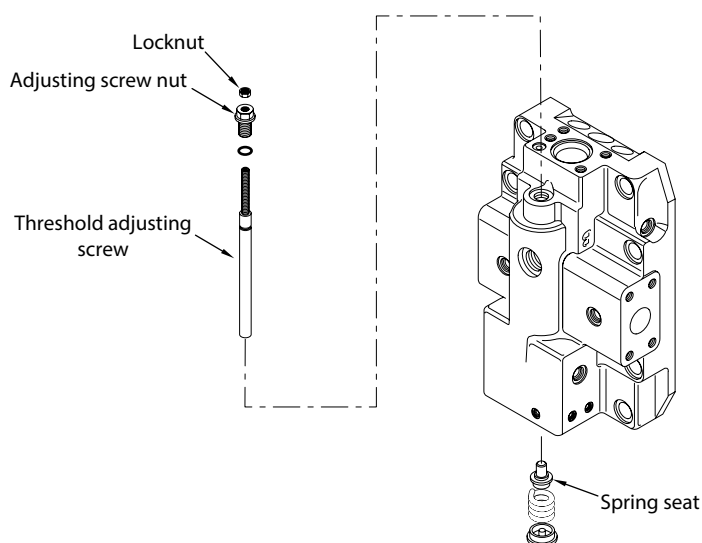
Description

To improve the sensitivity of the threshold adjustment on Series 51 motors, the threads on the adjusting screw are being changed from standard pitch thread to fine pitch thread. The adjusting screw nut and lock nut will also change. At the same time, the bore diameter in the end of the adjusting screw and the pin diameter on the end of the spring seat will decrease.

The old style parts will be obsoleted and no longer available as service parts. A service kit containing the adjusting assembly and the spring seat has been created.

Piece parts are not interchangeable.

All noted parts must be replaced.



Models affected

All series 51: 60cc - 250cc motors

Serial numbers

This change became effective at serial number N-96-07-xxxxx.

Part numbers affected

Frame size	Old hardware				New kits
	Spring seat	Adjusting screw nut	Lock nut	Theshold adjusting screw	Threshold adjusting kit
60cc	722264	732487	69393	729251	507691
80cc	722264	732487	69393	732503	507692
80cc	722264	732487	69393	737353	507672
110cc	722264	732487	69393	732511	507693
110cc	722264	732487	69393	732503	507677
160cc	722264	732487	69393	792051	507694
250cc	722264	732487	69393	792069	507695

Parts disposition

■ Interchangeable - Piece part are not interchangeable

Service Bulletin: SB-1996-005

Products affected

Series 51: 60cc - 250cc motors

Subject

Change to balanced areas between end cap and valve segment.

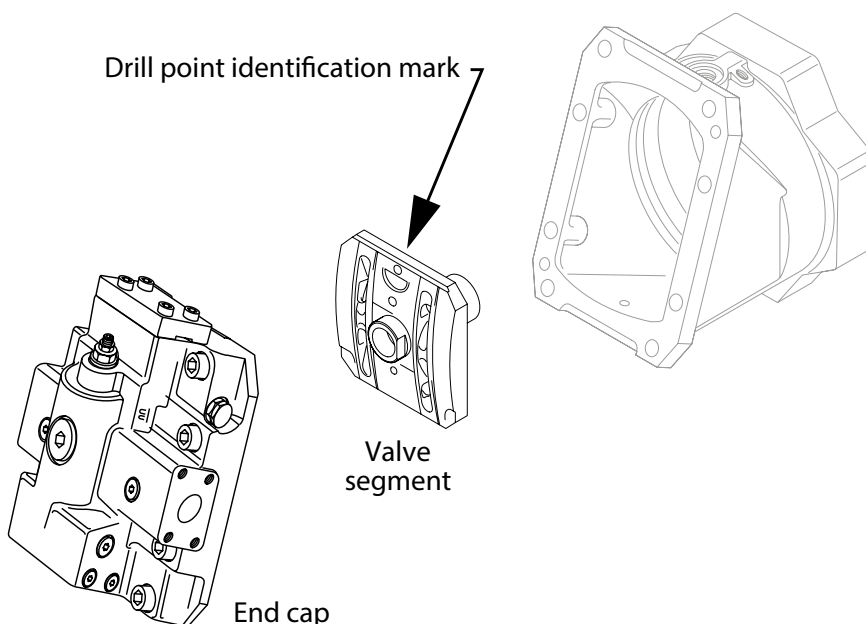
Description

As part of the continuing Series 51 product improvement program, the balance lands on the end cap and valve segment have been changed. The valve segment now defines the balance. The contact surface of the end cap has been made larger while the contact surface of the valve segment has been reduced. The change was implemented in three steps:

1. Change the valve segment so it defines the balance between the valve segment and the end cap. This change was implemented May 1994.
2. Change the end cap to allow a larger contact surface to keep the load area constant. This change was implemented January 1995
3. Change the valve segment to allow a smaller contact surface and reduce the balance. This change was implemented February 1996.

Do not use a new end cap with an old valve segment. However a new valve segment will work with an old end cap. The new valve segment (3rd step) is marked with a drill point on the cylinder block interface side next to the outer drain hole.

The old end cap and valve segment part numbers are obsolete. They are no longer available as genuine service parts.



Parts Manual Series 51 60cc Variable Displacement Motor



Service Bulletin: SB-1996-005

Models affected All Series 51 motors

Serial numbers N-96-12-xxxxx and later

Part numbers affected

End caps	Radial ports		Radial ports		Axial ports		Axial ports	
	w/LF		w/o LF		w/LF		w/o LF	
	Old	New	Old	New	Old	New	Old	New
60cc	729210	504226	779793	504227	-	-	-	-
80cc	731794	504230	731794	504231	739615	504232	739615	504234
110cc	731802	504236	731802	504236	739631	504237	739631	504238
160cc	731810	504239	731810	504240	731828	504242	731828	504243
250cc	731836	504244	783282	504245	731844	504246	731844	504247

Valve segment	Standard spindle		Retained spindle	
	Old	New	Old	New
60cc	732701	504718	-	-
80cc	360354	503939	-	-
110cc	349076	504715	501349	507758
160cc	356139	507242	500341	507759
250cc	367896	508202	502561	508202

Parts disposition ■ Interchangeable - except where noted

Service Bulletin: SB-1997-009

Products affected

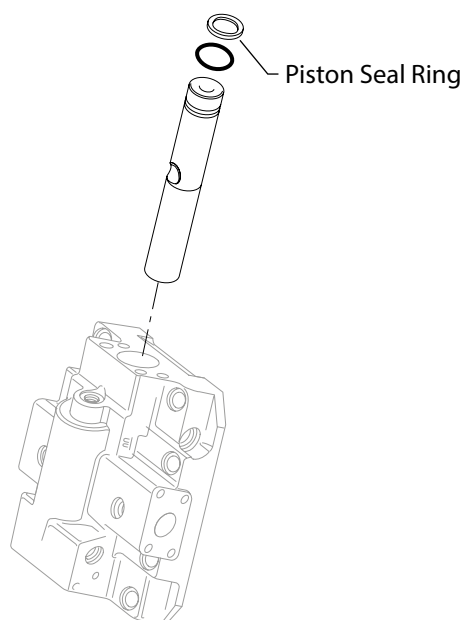
Series 51: 60 thru 250cc variable motors

Subject

Servo piston seal ring change

Description

As a product improvement, Sauer-Danfoss is changing the vendor for the servo piston seal ring used in the Series 51 variable motors. As a result, the old piston seal ring will become obsolete and no longer available as a service part.



Models affected

All Series 51 motors

Serial numbers

N-96-08-xxxxx and after

Part numbers affected

Frame size	Old part number	New part number
60cc	504202	508131
80cc	504203	508132
110cc	504204	508133
160cc	504205	508134
250cc	687277	504136

Parts disposition

■ Interchangeable



Service Bulletin: SB-1997-030

Products affected

Series 51: 60 thru 250cc variable motors

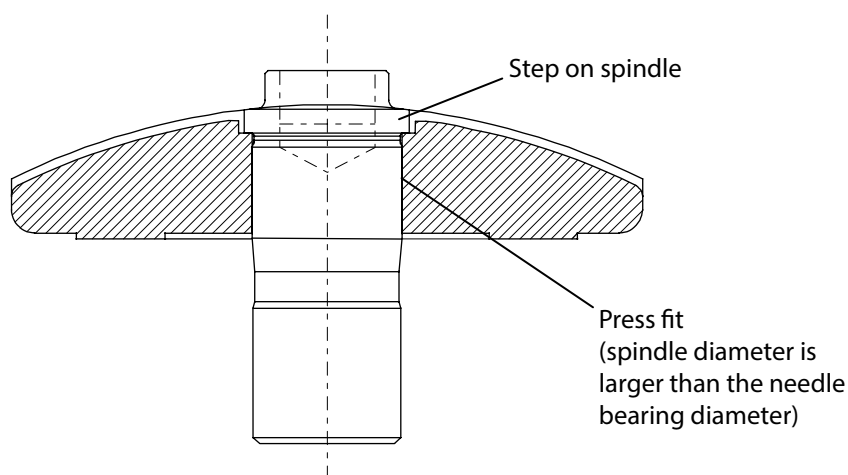
Subject

Change to stepped spindle in valve segment

Description

As part of the continuing Series 51 product improvement, the valve segment spindle design has been changed. The new design spindle has a step that stops against a recess in the valve segment. The new stepped spindle valve segment assembly replaces the valve segment assemblies with the straight spindle and the retained spindle.

The old segment valve assemblies will become obsolete. The stepped spindle valve segment assembly will be the standard for all models.



Models affected

All Series 51 motors

Serial numbers

N-96-08-xxxxx and after

Part numbers affected

Frame size	Obsolete Straight spindle valve segment	Obsolete Retained spindle valve segment	New Stepped spindle valve segment
60cc	504718	-	508197
80cc	503939	-	508198
110cc	504715	507758	508199
160cc	507252	507759	508201
250cc	507757	507760	508202

Parts disposition

■ Interchangeable - except where noted

Service Bulletin: SB-1998-035A

Products affected

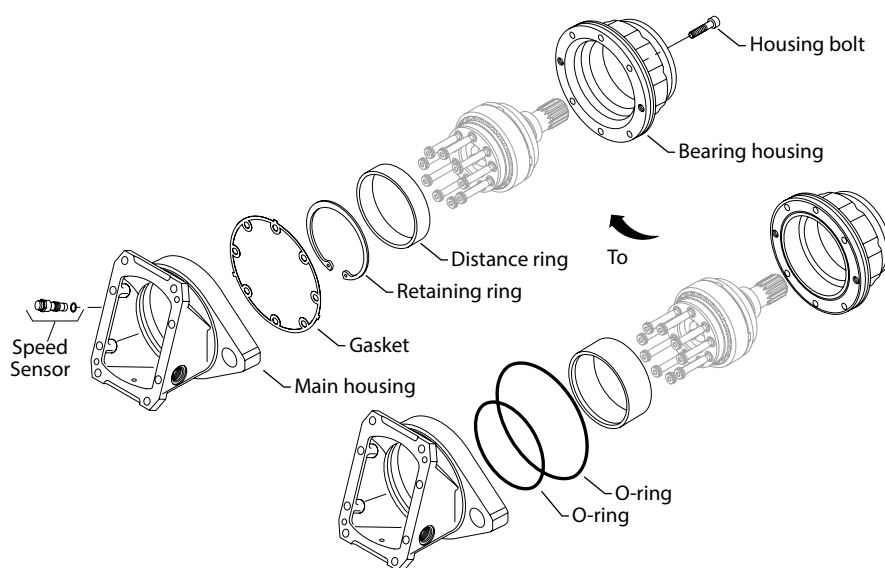
Series 51 cartridge motors

Subject

Incorporation of speed sensor into cartridge motors.

Description

In order to incorporate a speed sensor into the Series 51 cartridge motors, some changes have been made to the main housing and bearing housing. These changes included: adding a boss to the side of the main housing for the speed sensor, changing from O-ring seals between housings to a gasket seal, shortening the distance ring to allow clearance for the speed sensor, and adding a retaining ring to locate the distance ring. These parts are non-interchangeable as both housings have changed. The old housings and distance ring are obsolete and no longer available as service parts. Refer to Service Bulletin SB-1998-021 for housing bolt torque and sequence.



Models affected

51C060, 51C080, and 51C110 cartridge motors

Serial numbers

51C060 motors = N-94-42-xxxxx and after

51C080 motors = N-94-42-xxxxx thru N-98-32-xxxxx. After N98-32-xxxxx see SB-1998-086

51C110 motors = N-96-24-xxxxx and after

Part numbers affected

	From	To	From	To	From	To
Description	60cc	60cc	80cc	80cc	110cc	110cc
Main housing	741652	501103	734855	501104	738997	501105
Bearing housing	763756	501108	734632	501109	738971	501110
Retaining ring	--	501120	--	371625	--	504732
Gasket	--	501019	--	507259	--	501113
O-ring	792319	--	916759	--	502206	--
O-ring	502204	--	279570	--	502207	--
Distance ring	741702	501116	734913	501117	739045	501118

Parts disposition

■ Non-interchangeable



Service Bulletin: SB-1999-059

Products affected

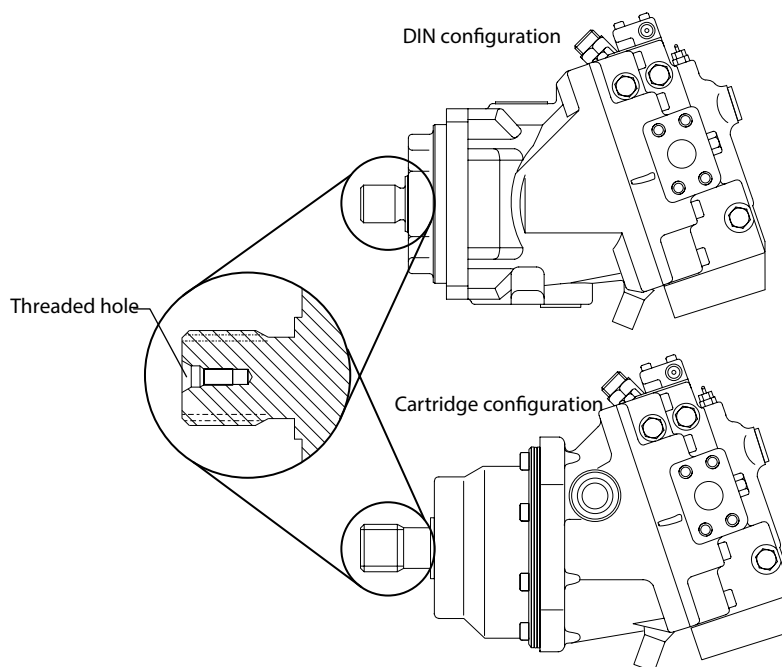
Series 51: 60cc, 80cc, 110cc, and 160cc motors

Subject

Thread change at customer end of DIN shaft assemblies.

Description

As a product improvement, Sauer-Danfoss has changed the threaded hole at the customer end of DIN shaft assemblies to metric threads. Metric shaft assemblies will now have a metric threaded hole. To aid in identifying this change, new shaft assembly part numbers have been released. The new shaft assemblies are interchangeable with the previous shaft assemblies. The previous shaft assembly part numbers will become obsolete.



Models affected

All 60, 80, 110, and 160cc motors (Series 51 and 51-1) with DIN shaft assemblies

Serial numbers

See table below

Part numbers affected

Frame size	Shaft code	Previous p/n	New p/n	Bolt size FROM	Bolt size TO	Effective after serial number
60cc	D1	747931	513034	7/16 - 14	M10 x 1.5	N-99-17-xxxxx
60cc	D2	787622	513033	7/16 - 14	M10 x 1.5	N-99-52-xxxxx
80cc	D2	742213	513037	7/16 - 14	M10 x 1.5	N-99-13-xxxxx
80cc	D3	783399	513035	7/16 - 14	M10 x 1.5	N-99-12-xxxxx
110cc	D3	787663	513039	5/8 - 11	M12 x 1.75	N-99-16-xxxxx
110cc	D4	749192	513038	5/8 - 11	M12 x 1.75	N-99-17-xxxxx
160cc	D4	787689	513041	5/8 - 11	M12 x 1.75	N-99-16-xxxxx
160cc	D5	749226	513040	5/8 - 11	M12 x 1.75	N-99-39-xxxxx

Parts disposition

■ Interchangeable

Service Bulletin: SB-2000-044

Products affected

All Series 51 & 51-1 motors

Subject

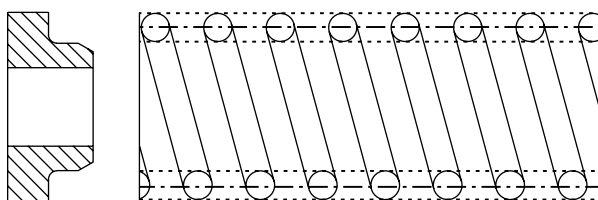
Change to spring and spring seat at ends of loop flushing shuttle spool.

Description

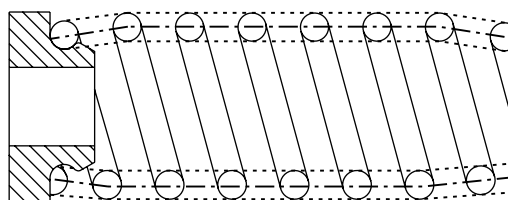
As a product improvement, and to ease assembly, the spring and spring seat at the ends of the loop flushing shuttle spool have been changed. The new spring and spring seat clip together. The old spring and spring seat are interchangeable with the new spring and spring seat as an assembly only.

The old spring seat will become obsolete and no longer available as a service part. The old spring will remain available as a service part.

From:



To:



Models affected

All Series 51 and 51-1 variable motors

Serial numbers

This change became effective at serial number N-00-50-xxxxx

Part numbers affected

From: Spring part number 4350286 and spring seat part number 4800353

To: Spring seat assembly part number 513596

Parts disposition

■ Interchangeable - as an assembly only



Service Bulletin: SB-2001-015

Products affected

All Series 51 & 51-1 motors

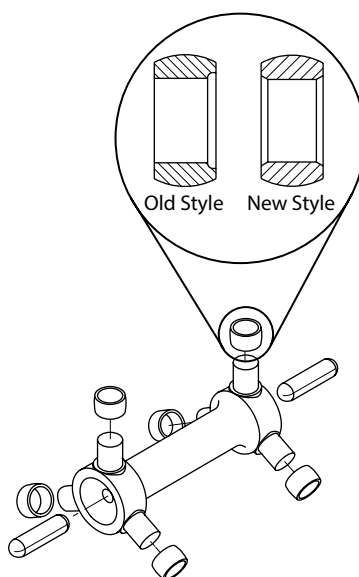
Subject

Incorporation of symmetrical rollers on the synchronizing shaft

Description

As a product improvement and to improve ease of assembly, Sauer-Danfoss has changed the design of the rollers used on the synchronizing shaft in Series 51 and 51-1 motors. The new rollers are symmetrical, in that they can be assembled either direction on the synchronizing shaft. The old rollers were asymmetrical and had to be assembled only one way. The synchronizing shaft has also been changed to accept the symmetrical rollers. The legs for the rollers are now longer in length.

A service kit is available to replace the old design synchronizing shaft and rollers, which are obsolete and no longer available as service parts. The pins at each end of the synchronizing shaft are still the same parts.



Models affected

All Series 51 and 51-1 motors

Serial numbers

Effective after N-01-39-xxxxx

Part numbers affected

Frame size	Old kit part number	New kit part number
60cc	771675	517308
80cc	771121	517309
110cc	773267	516485
160cc	776823	517310
250cc	776831	517311

Parts disposition

- Interchangeable; as an assembly only
- Use parts in stock

Service Bulletin: SB-2002-001

Products affected

All Series 51 & 51-1 motors

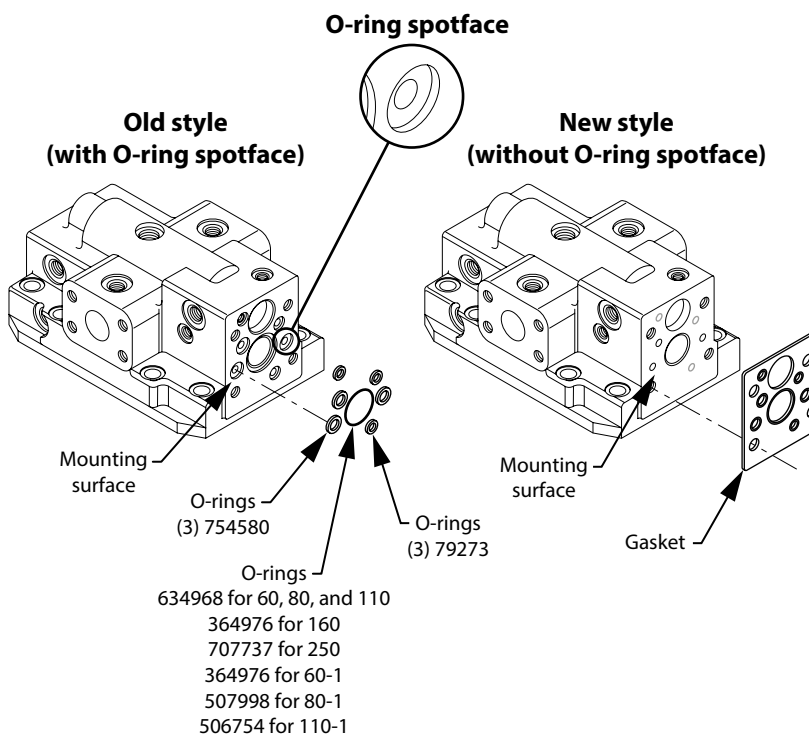
Subject

Sealing change to end cap/control interface

Description

The sealing is improved between the end cap and controls or multi-function blocks on all Series 51 and 51-1 motors. This change replaces individual O-rings with a gasket that incorporates imbedded rubber seal rings. The O-ring spot faces are removed from the end cap mounting face. There is no change to controls' and multi-function blocks' sealing surface.

New end cap part numbers allow better control of this change. Old end cap part numbers are obsolete. You cannot use the new gasket with old end caps and you cannot use the O-rings with new end caps. Control and multi-function block kit now include the O-rings and the new gasket.



Parts Manual Series 51 60cc Variable Displacement Motor



Service Bulletin: SB-2002-001

Models affected All Series 51 and 51-1 motors

Serial numbers See table below

Part numbers affected

End cap code	Frame size	Old part number	New part number	Manufacture date code	Gasket part number
R and T	60	504226	516057	N-03-14-xxxxx	511810
A	60	504228	515695	N-03-12-xxxxx	511810
R	60-1	506563	516902	N-03-39-xxxxx	512411
A	60-1	506564	516905	N-03-28-xxxxx	512411
H	60-1	510643	516920	N-03-28-xxxxx	512411
R and T	80	504230	515056	N-03-14-xxxxx	511810
A	80	504232	515696	N-03-27-xxxxx	511810
R	80-1	507976	516903	N-03-39-xxxxx	512411
A	80-1	507977	516907	N-03-39-xxxxx	512411
H	80-1	507978	516921	N-03-39-xxxxx	512411
R and T	110	504235	516058	N-03-14-xxxxx	511810
A	110	504237	513592	N-03-01-xxxxx	511810
R	110-1	506601	516904	N-03-39-xxxxx	512411
A	110-1	506602	515697	N-03-39-xxxxx	512411
H	110-1	510634	516923	N-03-39-xxxxx	512411
R	160	504239	516059	N-03-07-xxxxx	511851
A	160	504242	513543	N-03-01-xxxxx	511851
R	250	504244	516060	N-03-07-xxxxx	511851
A	250	504246	513544	N-03-08-xxxxx	511851

Parts disposition

- Non-interchangeable;
- Order replacement parts

Service Bulletin: SB-2004-004

Products affected

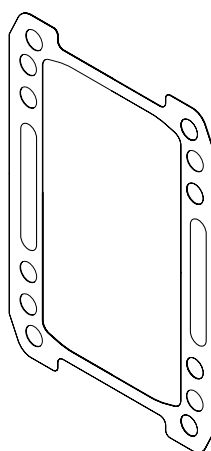
All Series 51 and 51-1 motors

Subject

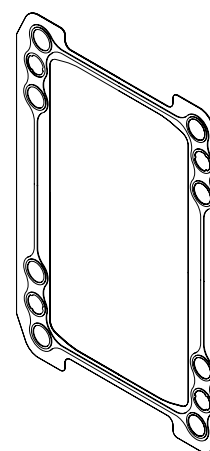
End cap change

Description

Sauer-Danfoss has made a quality improvement change to the gasket sealing the end cap and housing joint. The gasket changed from paper to a rubber coated metal gasket with a raised bead to aid sealing properties. The new gasket is interchangeable with the old gasket. The old gasket will become obsolete and no longer available for service.



Old gasket



New gasket

Models affected

Series 51 and 51-1 motors, all sizes (60, 80, 110, 160, and 250 cc)

Serial numbers

This change became effective at series numbers:

- N-05-48-xxxxx = 60 cc
- N-04-19-xxxxx = 80 cc
- N-05-48-xxxxx = 110 cc
- N-04-21-xxxxx = 160 cc
- N-04-36-xxxxx = 250 cc

Part numbers affected

Frame size	Old part number	New part number
60 cc	501198	515733
80 cc	501199	517237
110 cc	501200	516124
160 cc	501201	519806
250 cc	501202	515735

Parts disposition

- Interchangeable;
- Revise exiting part orders



Service Bulletin: SB-2005-012

Products affected

Series 51 & 51-1 60 and 80cc motors (SAE & DIN flange only)

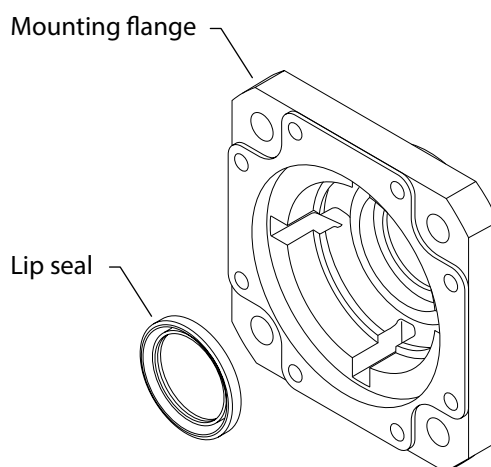
Subject

Shaft seal change

Description

Sauer-Danfoss is continuing to globalize its entire product line. The change to a new shaft seal in the series 51 and 51-1; 60 and 80 cc motors with SAE or DIN mounting flange is part of this effort. The new seal is not interchangeable with the old seal. The new seal has a smaller diameter (60 mm instead of

63.5 mm). The mounting flange has also changed to accept the new seal. The old flanges will become obsolete and no longer available for service. The old seal will remain available for service.



Models affected

All series 51 and 51-1; 60 and 80 cc motors with SAE or DIN mounting flange

Serial numbers

This change became effective at serial number N-06-13-xxxxx.

Part numbers affected

Old part number	New part number	Description
673525 / 9008000-0114	519021	Seal
763540	520318	Flange, 60cc, SAE
754895 / 521619	519195	Flange, 80cc, SAE
764076 / 521618	11000888	Flange, 80cc, SAE
775973	520314	Flange, 60cc, DIN
776039	520315	Flange, 80cc, DIN

Parts disposition

- Non-interchangeable;
- Order replacement parts

Parts Manual

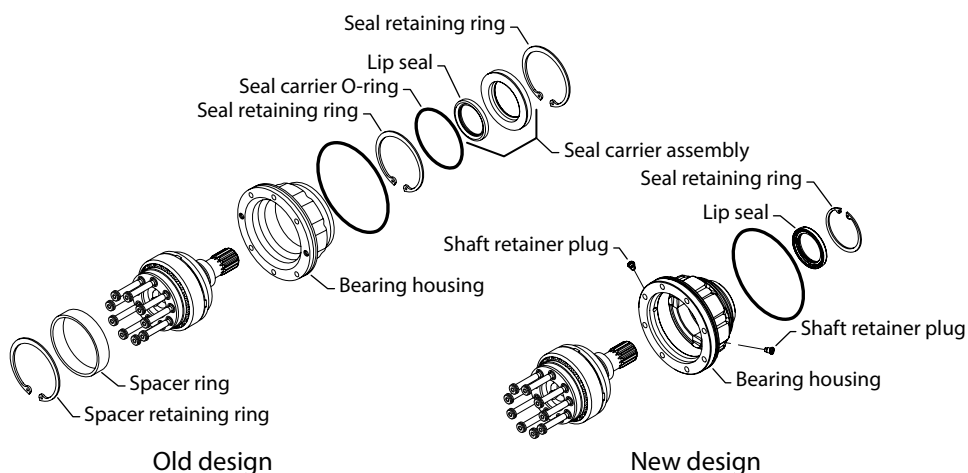
Series 51 60cc Variable Displacement Motor

Service Bulletin: SB-2009-006

Products affected Series 51 & 51-1 60 cc cartridge motors

Subject Redesign of bearing housing

Description In an effort to communize the assembly of bent axis motors, the cartridge bearing housing for the series 51 and 51-1 motors has been changed. The new design uses two special plugs to retain the shaft assembly in the housing rather than a spacer ring and retaining ring. The shaft seal hardware has also changed. The new seal design has the lip seal pressed directly into the housing and held in place with a single retaining ring. The old seal design had an O-ring on a seal carrier assembly with two retaining rings holding the seal carrier in place. The lip seal does not change. The new housing will have improved clearances for use in different planetary gearboxes. The old and new housings are not interchangeable. The old housing, spacer ring, spacer retaining ring, seal carrier assembly and retaining rings that held the seal carrier in place will remain available for service.



Models affected All series 51 and 51-1 60cc Cartridge motors.

Serial numbers This change became effective at serial number N09-46-XXXXX. (6 Nov 2009)

Part numbers affected

Description	Old part number	Replacement part number
Bearing housing	11009204	11038245
Spacer retaining ring	501120	11056747 (retainer plugs)(2)
Seal carrier assembly	510482	No longer used
Lip seal	519021	No Change
Seal retaining ring	392456 (2)	915280 (1)
Spacer ring	501116	No longer used
Seal carrier O-ring	501879	No longer used

Parts disposition

- Non-interchangeable
- Use parts in stock for repair of units built before serial number N09-46-xxxxx
- Order replacement parts
- Revise existing part orders



Products we offer:

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

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