

SPARE PARTS BOOK

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Table of Content

Section A	3
General information	3
Order information required	4
Instruction manuals for standard products	4
Section B	5
Lists and tables	5
Explanation to the pump designation codes and serial numbers	6
Designations for spare parts	7
Old/current pump/valve designations	8
Explanation of pump options A-number codes	9
Explanation codes for prototype pumps	10
Upgrading of old low pressure IMO pumps	11
Obsolete IMO-products and their withdrawal year	15
Performance data & dimension prints for obsolete products	17
Section C	19
Current products	19
ACD Low pressure pump	20
ACE (D3/K3/L3/N3) Low pressure pump	22
OptiLine ACE (D4/K4/L4/N4) Low pressure pump	26
ACF/UCF (K5/L5/N5) Low pressure pump	28
ACG/UCG (D7/K7/N7) Low pressure pump	30
OptiLine ACG (D8/K8/N8) Low pressure pump	34
D4 High pressure pump	36
D6 High pressure pump	40
E4 Medium pressure pump	42
LPD Low pressure pump	44
LPE (D3/K3/L3/N3) Low pressure pump	46
OptiLine LPE (D4/K4/L4/N4) Low pressure pump	48
LPQ Low pressure pump	50
GA Valves	52
Shaft couplings for standard pumps	56
Motor ball bearing sets for ABB, Brook Crompton, Siemens & Hoyer electric motors	59
Section D	61
Obsolete products	61
General information	63
AAA Low pressure pump	64
ABF Pumps	66
ABQ Size 100-140 pumps	70
ABQ Size 160 Low pressure pump	74
ABQ Size 180 Low pressure pump	78
ACE (K1/K2/L1/L2/N1/N2) Low pressure pump	82
OptiLine ACE (D3/K3/L3/N3) Low pressure pump	86
ACF/UCF (K4/L4/N4) Low pressure pump	88
ACG (N2/N3/N4) & UCG (N3/N4)	92
ACG/UCG (K5/N5) Pumps	94
ACG/UCG (K6/N6) Low pressure pump	96
ALB Pumps	98
ALG Medium pressure pump size 080-110	100
D4C Cartridge High pressure pump	102
Shaft couplings for obsolete pumps	104
Shaft seals for withdrawn pumps	106

Section A

General information

**Please be informed that from
2017.01.01 all parts no. starts
with 901**

Following information are required to handle your order in a proper way.

Required information:

Always:

- Your order number and date.
- Delivery address (if not standard).
- Required delivery date from IMO AB.
- If part delivery is accepted.
- Pricing (if not standard).
- Payment terms (if not standard).
- Delivery terms (if not standard).
- Value for customs clearance if delivery direct to your customer.

IF WE HAVE MADE AN OFFER, PLEASE ALWAYS REFER TO THIS OFFER.

Optional:

- Your contact person.
- Your customers order number and date.
- Name of your customer.

Content:

Please specify the complete designation and serial number of the pump that you require spares for, i.e. "ACF 110N4 IRBO A020 s/n 345678". Please specify required spares with part number and quantity.

It is an advantage if you also note item number and/or the denomination of the part enabling easier control of correct part number.

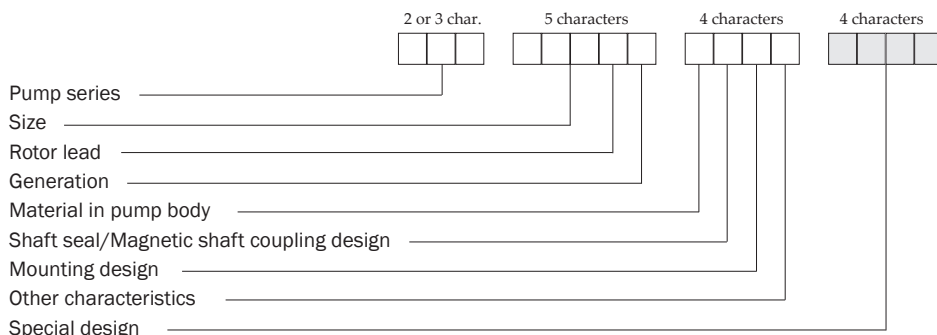
Price and discount are only required if they deviate from our valid List price and your normal discount. If you order complete pumps or pump elements do not forget to note if any certificates are required.

Instruction manuals for standard products:

Please visit our website: www.imo.se

Section B

Lists and tables



Pump series

Designation for pump family, for example ACE, D4, D6.

Size

Stands for pump size (power rotor outer diameter in mm).

Existing sizes: 015, 020, 025, 032, 038, 045, 052, 060, 070, 080, 090, 100, 110, 125, 140, 160, 180

Lead

- B, L, J and K - Different low leads
- N - Normal lead
- G, P and H - Different high leads

Generation

Stands for state of revision of pump design.

Material in pump body

(for cartridge pumps the sleeve)

- F - Fabricated body.
- I - Cast iron body .
- L - Aluminium.
- N - Nodular cast iron.
- S - Steel body (with bronze lining for D6).
- X - Special design, to be stated with A-code.
- Y - Surface treated cast iron.

Shaft seal/Magnetic coupling design

- E - Excluded (not included in the pump).
- R - Standard seal with elastomers in nitrile.
- T - Shaft seal with carbide faces seal.
- V - Standard seal with elastomers in viton.
- X - Special design, to be specified with A-code.
- Q - Pump xTx with SealGuard - pump obsolete.
- H, J, K, L, M, N - Magnetic shaft coupling

NOTE!

The pump series, D4, E4 and D6, have until 1986 had an information about the mounting design in the third position of the series designation (D4F, D4V, D4T). From 1986 only two positions are to be mentioned in the pump series code for these pumps. All designations stated are valid for pumps only. Pump units (pump with motor and accessories) are normally handled without any special designation.

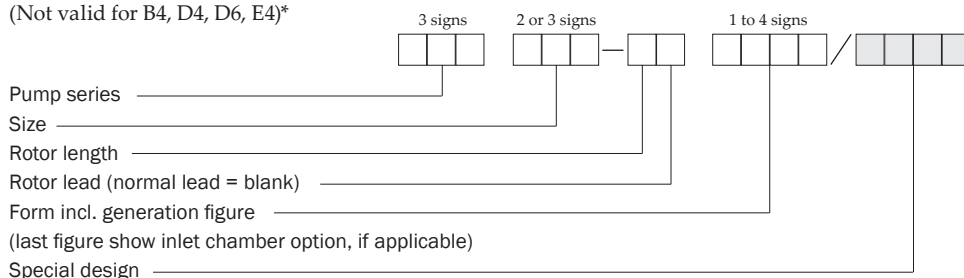
Serial numbers:

Individual serial numbers, 6 digits, on all pumps since 1987.

The smaller low pressure pumps earlier had a batch number as serial number showing year/week when the pumps were tested. Example 83-24. The smaller pumps received an individual serial number if they were sold with any certificate.

Old pump designation system (used until 1986)

(Not valid for B4, D4, D6, E4)*



* For these pumps series are the new designation code valid less the material code + see the note above.

Mounting design

- B - Bellhousing-face mounting (flange mounting).
- C - Cartridge design.
- F - Foot mounting.
- J - Vertical mounting in tank with suction pipe.
- T - Vertical mounting in tank without suction pipe.
- X - Special design, to be specified with A-code.
- Y - Vertical mounting (LPQ-type).

Other characteristics

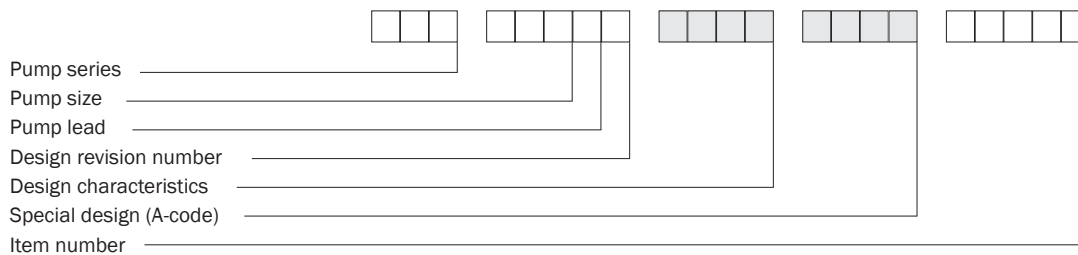
Valve design or other speciality.

- E - Excluded (valve not included in the pump).
- G - Valve with external return.
- I - Cast iron sleeve (ALG).
- O - Pressure relief valve adjustable for low pressure conditions ACE x1/x2, ACG gen 3-6 up to 6 bar, ACF up to 10 bar.
- P - Pressure relief valve adjustable to max operating pressure.
- Q - Sleeve with bronze lining (ALG).
- W - Sleeve with babbit white metal lining (ALG).
- X - Special design, to be specified with A-code.
- Y - External ball bearing (ball bearing in D6).
- Z - Internal ball bearing (ball bearing in D6).

Special design A-code.

This states a customer tailored design or other special design for example A210.

This group normally contains 4 characters. This code is deleted for standard pumps.



- Pump series** Designation for pump family, for example ACE, D4
- Pump size** Normally the largest pump size, for which this spare part can be used
- Pump lead** "N"=normal lead in most cases. If rotors are included in the set, actual lead is stated.
- Design revision no** The generation of the oldest pump design, for which this spare part can be used.
- Design characteristics** The same 4-letter code as for the corresponding pump, indicating choice of material, shaft seal mounting design and "other". Used only if necessary to avoid ambiguity, otherwise omitted. Character specified only for those which are of interest, the others are specified with a 'x'. Example xVxx.
- Special design (A-code)** The same A-code as for the pump, indicating deviation from standard. Used only if necessary to avoid ambiguity, otherwise omitted. For pumps delivered as pump elements or cartridge pump only the "A" in the A-code is changed to a "G".
- Item number** Single component, the digits refer to item number as shown on section drawing.
First character:
- D One level component, for example gasket D556
 - B Item including the D-component plus other item number
Example ACG generation 6 front cover item B501 consisting of:
 - D501 Front cover
 - D502 Tension pin
 - D502A plug
 - D545 Tension pin
 In those cases are the D-component only sold on the corresponding B level.
 - G Spare part sets
Spare part sets specified in this catalogue are:

G011 Rotor set, CCW-rotation	G053 Minor kit
G012 Rotor set, CW-rotation	G054 Major kit
G015 Rebuilding set, incl rotor set G012	G055 Joint kit (E4)
G020 Sleeve element	G057 Joint kit
G031 Bearing element (E4, E4C)	G070 Valve element
G031 Front balancing cover (ABF)	G082 Sealguard kit
G034 Front cover	G090 Pump element (LPQ,ABF,ABQ,ALG)
G041 Rear bearing element	G098 Magnetic coupling
G050 Shaft seal	G099 Complete shaft coupling
G051 Sealing element	G102 Pump element (E4, D4)
G052 Mechanical seal	

 Old designation 11G=G011, 50G=G050, etc
- Second-fifth character
Item number, example 401, 608A
- Example:
- | | |
|-------------------------------|----------------------------|
| ACG 045N7 G057 joint kit | ACE 032N3 D501 front cover |
| ACF 080N4 xVxx G053 minor kit | ACG 070N6 B501 front cover |

Deviating designations:

- Shaft couplings Pump series/pump size(s)/generation(if deviating)/G099 (if space)/IEC size/no of pole
LPQ 100-140 IEC 280
- Shaft seals (some) G050/Txxx (pump size) xxx xxx (shaft seal material code)G050 T045 US0 UUV
- Minor/joint kits Valid for two different material codes ACE 032N3 xT/xQ G053 (or G057)

On sectional drawings are the first character omitted. 'B'-components as B501 are on sectional drawings shown as 5010, B401 as 4010 etc. Spare part kits are not shown on the sectional drawings

- Note 1: Designations for commercially available items, such as bearings, O-rings and washers, generally deviate from above.
- Note 2: Components may be used in more than one pump series, and hence pump series code for a part may deviate from the pump it is used for.
- Note 3: Part designed before 1987 may still have designations according to an earlier system.

CURRENT STANDARD PRODUCTS:**LOW PRESSURE PUMPS**

Old designation	Current designation	Old designation	Current designation
ACF		E4T xxxN1 A149	E4 xxxN1 YETE
ACF xxx-3 N4F	ACF xxxN4 IRBO	E4V xxxN1 A149	E4 xxxN1 YEJE
ACF xxx-3 N4F A051	ACF xxxN4 IVBO	D4	
ACF xxx-3 N4F 615B	ACF xxxN4 IRBP	D4F xxxN2 A051	D4 xxxN2 LVBE
ACF xxx-3 N4F/Y	ACF xxxN4 IRBO A020	D4B xxxN2 A060	D4 xxxN2 LVBP

MEDIUM AND HIGH PRESSURE PUMPS

E4		D6	
E4F xxxN1	E4 xxxN1 LEBE	D6E xxxN3	D6 xxxN3 SVBY
E4T xxxN1	E4 xxxN1 LETE	D6F xxxN3	D6 xxxN3 SRBZ
E4V xxxN1	E4 xxxN1 LEJE	D6T xxxN3	D6 xxxN3 SRTZ
E4F incl conn.frame	E4 xxxN1 LRBE	D6H xxxN3	D6 xxxN3 STFZ
E4T "	E4 xxxN1 LRTE		
E4V "	E4 xxxN1 LRJE		
E4F xxxN1 A149	E4 xxxN1 YEBE		

PRESSURE RELIEF VALVE

GA	
GAX xxx01 Txxx/U	GAX xxx01 Txxx A313

OBsolete PRODUCTS:

Pump	Old designation	Later designation	Replaced by / Current designation
AAA	AAA 15-3 NE	AAA 015N1 IRBE	LPD 015N1 IVBP
	AAA 20-3 N2EX	AAA 020N2 IRBE	LPD 020N1 IVBP
	AAA xx-3 xx/V	AAA xxxzy IVBE	LPD xxxN1 IVBP
ABF	ABF xxx-3 N2M	ABF xxxN2 IRYP	ACF or LPQ, contact IMO
	ABF xxx-3 N2M 561A	ABF xxxN2 IRYP A561	"
	ABF xxx-3 N4M	ABF xxxN4 IRYP	"
	ABF xxx-3 N4M 561A	ABF xxxN4 IRYP A561	"
	ABF xxx-3 NxM/Y	ABF xxxNx IRYP A020	"
ABQ	ABQ xxx-3 DN5M	ABQ xxxN5 IRYP	LPQ or ACF, contact IMO
	ABQ xxx-3 DN5M 615A	ABQ xxxN5 IRYO	"
	ABQ xxx-3 DN5M 561A	ABQ xxxN5 IRYP A561	"
	ABQ xxx-3 DN5M/Y	ABQ xxxN5 IRYP A020	"
ACE	ACE xx-2 NC/60	ACE xxxN1 NTBP	ACE xxxN3 NTBP
	ACE xx-2 NC/60 615A	ACE xxxN1 NTBO	ACE xxxN3 NTBP
	ACE xx-2 NC	ACE xxxN1 IVBP	ACE xxxN3 NVBP
	ACE xx-2 NC 615A	ACE xxxN1 IVBO	ACE xxxN3 NVBP
	ACExxxN2	ACE xxxN2 NTBP	ACE xxxN3 NTBP
	ACExxxN2 615A	ACE xxxN2 NTBO	ACE xxxN3 NTBP
ACD	ACD 25-2 N6F	ACD 025N6 IRBP	ACD 025N6 NVBP
	ACD 25-2L N6F	ACD 025L6 IRBP	ACD 025L6 NVBP
ACG	ACG xx-2 N3F	ACG xxxN3 IVBP	ACG xxxN7 NVBP
	ACG xx-2 N3F 615A	ACG xxxN3 IVBO	ACG xxxN7 NVBP
	ACG xx-2 N3E	ACG xxxN3 IVBE	ACG xxxN7 NVBE
	ACG xx-2 N3G	ACG xxxN3 IVBG	obsolete
	ACG xxxN4	ACG xxxN4 NVBP	ACG xxxN7 NVBP
	ACG xxxN4 615A	ACG xxxN4 NVBO	ACG xxxN7 NVBP
ALG	ALG xxx-4 N3E	ALG xxxN3 NVCI A021	
	ALG xxx-4 N3E/60	ALG xxxN3 NVCI	
	ALG xxx-4 N3EH/60	ALG xxxN3 NVBI	
	ALG xxx-4 N3ES/60	ALG xxxN3 NVJI	
D4	D4F xxxN2	D4 xxxN2 LRBE	D4 xxxN2 LVBE
	D4T xxxN2	D4 xxxN2 LRTE	D4 xxxN2 LVTE
	D4V xxxN2	D4 xxxN2 LRJE	D4 xxxN2 LVJE
	D4B xxxN2	D4 xxxN2 LRBP	D4 xxxN2 LVBP
	D4F xxxN2 A056	D4 xxxN2 LRBE A056	D4 xxxN2 LVBE A056
	D4B xxxN2 A056	D4 xxxN2 LRBP A056	D4 xxxN2 LVBP A056
D4C	D4C xxxN2	D4C xxxN2 LRCE	
	D4C xxxN2 A073	D4C xxxN2 LTCE	
	D4C xxxN2 A056	D4C xxxN2 LRCE G056	
	D4C xxxN2 A051	D4C xxxN2 LVCE	
E4C/E4D	E4C xxxN1	E4C xxxN1 LVFE	
	E4D xxxN1	E4C xxxN1 LVBE	

Designation suffix:

Code	Explanation	Replaced by material code	Valid for current pumps	Valid for obsolete pumps
New	Old			
--	/V Pumps with viton shaft seal (when nitrile shaft seal is standard)	xVxx		AAA
A020	/Y Surface-treated cast iron pump bodies.		ACF, UCF, LPQ, ABQ	ACE, ACG, UCG ABF, ABQ
A050	Unpainted pump		ACE, ACF	
A056	Ball bearing option		D4	APD, D4C
A070	Hydraulic motor (CW-rotor set; CCW-rotation from the shaft end.		D4	ALA, ALB, ALG APD, APG
A098	Minor change of pump made by IMO AB.*			
A099	Minor change of accessories mounting made by IMO AB.*			
A101	/101 Nonstandard rotation: CCW (counter clockwise) CW-rotation is standard)		ACE, ACG, UCG, ACF, UCF, E4, D4, D6	ALA, ALB, ALD, ALG, B4, D4C
A102	/102 Nonstandard rotation: CW (clockwise) (when CCW-rotation is standard)			AAA, AAD, AAE, ABB, ABF, ANA
A141	Pump with special flange (front cover) to replace ALA and B4 pumps.		E4	
A313	/U GA-valve intended for HFO (Heavy fuel oil)-use valve item 647 is modified.		GAD, GAR, GAS	
A333	A125, with mechanical shaft seal		D4	
--	615A Valve spring option (low pressure)	xxxO	ABQ 160-180 ACG	ACE x1/x2
--	615B Valve spring option (high pressure)	xxxP	ACF	

Pumps with the old designation code are for example marked '/101' instead of 'A101'

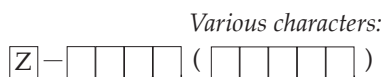
* Changes are against specific orders. That means that the A-number only indicates that the product has been changed not the type of the change itself. Changes made by us are filed on the sales order on which we delivered the pump. These pumps are also marked with our sales order number. Please always refer to this order number.

FOR OTHER A-CODE NUMBERS OR OTHER OLD DESIGNATION SUFFIXES - PLEASE CONTACT IMO AB BE AWARE OF THAT ANY PART(S) MAY DEVIATE FROM THE STANDARD VERSION.

PROTOTYPE PUMPS:

Prototype pumps and very special pumps, especially for the Navy, have a special designation.

Designation:



Example:
Z-432B (D4 052N 101)

Numerical order _____

Generation figure A,B,C, _____

Basic pump series and size/lead _____

Please contact Anne Quesney from Defense Department for all Navy products.

Email: Anne.Quesnay@colfaxfluidhandling.com.

Spare parts commitments could be none, or, as for Navy pumps, be longer than the normal 10 years.

Obsolete pump

Current pump

Steps to be taken

1) ACD pumps

ACD 25-2 N3F/ACD 25-2L N3F	ACD 025x6 NVBP	Interchangeable
ACD 25-2 N4F/ACD 25-2L N4F	ACD 025x6 NVBP	Interchangeable
ACD 25-2 N5F/ACD 25-2L N5F	ACD 025x6 NVBP	Interchangeable
ACD 25-2 N6F/ACD 25-2L N6F	ACD 025x6 NVBP	Interchangeable
ACD 025x6 IRBP	ACD 025x6 NVBP	Interchangeable
ACD 025x6 IVBP	ACD 025x6 NVBP	Interchangeable

2) ACE pumps

Notes:

For HFO application, xTxx Seal must be used.

*For HFO Booster pumps we recommend our OptiLine pump unit ACE 025-038x4 NxBP. Pump/motor datas required to dimension magnetic coupling.

** IEC motor size required to select correct size of special coupling – see our Spare Parts Book page 87 for part numbers of correct coupling.

ACE 25-2 NC	ACE 025x3 NVBP	Interchangeable
ACE 25-2 NC/60	ACE 025x3 NTBP*	Interchangeable
ACE 025x1 IRBP/O	ACE 025x3 NVBP	Interchangeable
ACE 025x1 IVBP/O	ACE 025x3 NVBP	Interchangeable
ACE 025x2 NVBP/O	ACE 025x3 NVBP	Interchangeable
ACE 025x2 NTBP/O	ACE 025x3 NTBP*	Interchangeable
ACE 32-2 NC	ACE 032x3 NVBP	New coupling needed**
ACE 32-2 NC/60	ACE 032x3 NTBP*	New coupling needed**
ACE 032x1 IRBP/O	ACE 032x3 NVBP	New coupling needed**
ACE 032x1 IVBP/O	ACE 032x3 NVBP	New coupling needed**
ACE 032x2 NVBP/O	ACE 032x3 NVBP	New coupling needed**
ACE 032x2 NTBP/O	ACE 032x3 NTBP*	New coupling needed**
ACE 38-2 NC	ACE 038x3 NVBP	New coupling needed**
ACE 38-2 NC/60	ACE 038x3 NTBP*	New coupling needed**
ACE 038x1 IRBP/O	ACE 038x3 NVBP	New coupling needed**
ACE 038x1 IVBP/O	ACE 038x3 NVBP	New coupling needed**
ACE 038x2 NVBP/O	ACE 038x3 NVBP	New coupling needed**
ACE 038x2 NTBP/O	ACE 038x3 NTBP*	New coupling needed**
ACE 025-038x3 NKBP, NLBP, NMBP	ACE xxxx4 NKBP, NLBP, NMBP	New connection frame and angel brackets needed

3) ACG Generation N2F/N2F/60, N3 and N4

Notes: For HFO application, xTxx Seal must be used.

*For HFO Booster pumps we recommend our OptiLine pump unit ACG 045x8 NxBP. Pump/motor datas required to dimension magnetic coupling.

UCG does not exist as OptiLine pump.

** IEC motor size required to select correct size for intermediate plate and coupling – see Spare Parts Book page 45 for intermediate plate, and page 105 for cpld coupling (same as for Gen. 5 and 6 pumps) Alternatively complete unit excluding electric motor can be supplied.

*** IEC motor size required to select correct size of accessories for replacement pump unit. Piping system has to be adjusted due to measurement differences between old and new unit.

ACG 45-2 N2F	ACG 045N7 NVBP	Pump unit excluding el.motor***
ACG 45-2 N2F/60	ACG 045N7 NTBP*	Pump unit excluding el.motor***
ACG 45-2 N3F (615A)	ACG 045N7 NVBP	Pump, intermediate plate, coupling**
ACG 045N3 IVBP/O	ACG 045N7 NVBP	Pump, intermediate plate, coupling**
ACG 45-2 N4F	ACG 045N7 NVBP/NTBP*	Pump intermediate plate, coupling**
ACG 045N4 NVBP/O	ACG 045N7 NVBP/NTBP*	Pump, intermediate plate, coupling**
ACG 45-2 N3E	ACG 045N7 NVBE	Pump intermediate plate, coupling**
UCG 45-2 N4F	UCG 045N7 NVBP/NTBP*	Pump intermediate plate, coupling**
ACG 52-2 N2F	ACG 052N7 NVBP	Pump unit excluding el.motor***
ACG 52-2 N2F/60	ACG 052N7 NTBP*	Pump unit excluding el.motor***
ACG 52-2 N3F (615A)	ACG 052N7 NVBP	Pump, intermediate plate, coupling**
ACG 052N3 IVBP/O	ACG 052N7 NVBP	Pump, intermediate plate, coupling**
ACG 52-2 N4F	ACG 052N7 NVBP/NTBP*	Pump intermediate plate, coupling**
ACG 052N4 NVBP/O	ACG 052N7 NVBP/NTBP*	Pump, intermediate plate, coupling**
ACG 52-2 N3E	ACG 052N7 NVBE	Pump intermediate plate, coupling**
UCG 52-2 N4F	UCG 052N7 NVBP/NTBP*	Pump intermediate plate, coupling**

Obsolete pump

Current pump

Steps to be taken

3) ACG Generation N2F/N2F/60, N3 and N4 (cont)

ACG 60-2 N2F	ACG 060N7 NVBP	Pump unit excluding el.motor***
ACG 60-2 N2F/60	ACG 060N7 NTBP*	Pump unit excluding el.motor***
ACG 60-2 N3F (615A)	ACG 060N7 NVBP	Pump, intermediate plate, coupling**
ACG 060N3 IVBP/O	ACG 060N7 NVBP	Pump, intermediate plate, coupling**
ACG 60-2 N4F	ACG 060N7 NVBP/NTBP*	Pump intermediate plate, coupling**
ACG 060N4 NVBP/O	ACG 060N7 NVBP/NTBP*	Pump, intermediate plate, coupling**
ACG 60-2 N3E	ACG 060N7 NVBE	Pump intermediate plate, coupling**
UCG 60-2 N4F	UCG 060N7 NVBP/NTBP*	Pump intermediate plate, coupling**
ACG 70-2 N2F	ACG 070N7 NVBP	Pump unit excluding el.motor***
ACG 70-2 N2F/60	ACG 070N7 NTBP*	Pump unit excluding el.motor***
ACG 70-2 N3F (615A)	ACG 070N7 NVBP	Pump, intermediate plate, coupling**
ACG 070N3 IVBP/O	ACG 070N7 NVBP	Pump, intermediate plate, coupling**
ACG 70-2 N4F	ACG 070N7 NVBP/NTBP*	Pump intermediate plate, coupling**
ACG 070N4 NVBP/O	ACG 070N7 NVBP/NTBP*	Pump, intermediate plate, coupling**
ACG 70-2 N3E	ACG 070N7 NVBE	Pump intermediate plate, coupling**
UCG 70-2 N4F	UCG 070N7 NVBP/NTBP*	Pump intermediate plate, coupling**

4) ACG Generation 5

Note:

*For HFO Booster pumps we recommend our OptiLine pump unit ACG 045x8 NxBP. Pump/motor datas required to dimension magnetic coupling.

UCG does not exist as OptiLine pump.

ACG 045x5 IVBP/O/E	ACG 045x7 NVBP/E	interchangeable
UCG 045x5 IVBP/O/E	UCG 045x7 NVBP/E	interchangeable
ACG 045x5 NVBP/O/E	ACG 045x7 NVBP/E	interchangeable
UCG 045x5 NVBP/O/E	UCG 045x7 NVBP/E	interchangeable
ACG 045x5 NTBP/O/E	ACG 045x7 NTBP*/E	interchangeable
UCG 045x5 NTBP/O/E	UCG 045x7 NTBP/E	interchangeable
ACG 052x5 IVBP/O/E	ACG 052x7 NVBP/E	interchangeable
UCG 052x5 IVBP/O/E	UCG 052x7 NVBP/E	interchangeable
ACG 052x5 NVBP/O/E	ACG 052x7 NVBP/E	interchangeable
UCG 052x5 NVBP/O/E	UCG 052x7 NVBP/E	interchangeable
ACG 052x5 NTBP/O/E	ACG 052x7 NTBP*/E	interchangeable
UCG 052x5 NTBP/O/E	UCG 052x7 NTBP/E	interchangeable
ACG 060x5 IVBP/O/E	ACG 060x7 NVBP/E	interchangeable
UCG 060x5 IVBP/O/E	UCG 060x7 NVBP/E	interchangeable
ACG 060x5 NVBP/O/E	ACG 060x7 NVBP/E	interchangeable
UCG 060x5 NVBP/O/E	UCG 060x7 NVBP/E	interchangeable
ACG 060x5 NTBP/O/E	ACG 060x7 NTBP*/E	interchangeable
UCG 060x5 NTBP/O/E	UCG 060x7 NTBP/E	interchangeable
ACG 070x5 IVBP/O/E	ACG 070x7 NVBP/E	interchangeable
UCG 070x5 IVBP/O/E	UCG 070x7 NVBP/E	interchangeable
ACG 070x5 NVBP/O/E	ACG 070x7 NVBP/E	interchangeable
UCG 070x5 NVBP/O/E	UCG 070x7 NVBP/E	interchangeable
ACG 070x5 NTBP/O/E	ACG 070x7 NTBP*/E	interchangeable
UCG 070x5 NTBP/O/E	UCG 070x7 NTBP/E	interchangeable

5) ACG Generation 6

Notes:

*For HFO Booster pumps we recommend our OptiLine pump unit ACG 045x8 NxBP. Pump/motor datas required to dimension magnetic coupling. UCG does not exist as OptiLine pump.

ACG 045x6 IVBP/O/E	ACG 045x7 NVBP/E	interchangeable
ACG 045x6 NVBP/O/E	ACG 045x7 NVBP/E	interchangeable
UCG 045x6 NVBP/O/E	UCG 045x7 NVBP/E	interchangeable
ACG 045x6 NTBP/O/E	ACG 045x7 NTBP*/E	interchangeable
UCG 045x6 NTBP/O/E	UCG 045x7 NTBP/E	interchangeable

Obsolete pump	Current pump	Steps to be taken
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5) ACG Generation 6 (cont)

ACG 052x6 IVBP/O/E	ACG 052x7 NVBP/E	interchangeable
ACG 052x6 NVBP/O/E	ACG 052x7 NVBP/E	interchangeable
UCG 052x6 NVBP/O/E	UCG 052x7 NVBP/E	interchangeable
ACG 052x6 NTBP/O/E	ACG 052x7 NTBP*/E	interchangeable
UCG 052x6 NTBP/O/E	UCG 052x7 NTBP/E	interchangeable

ACG 060x6 IVBP/O/E	ACG 060x7 NVBP/E	interchangeable
ACG 060x6 NVBP/O/E	ACG 060x7 NVBP/E	interchangeable
UCG 060x6 NVBP/O/E	UCG 060x7 NVBP/E	interchangeable
ACG 060x6 NTBP/O/E	ACG 060x7 NTBP*/E	interchangeable
UCG 060x6 NTBP/O/E	UCG 060x7 NTBP/E	interchangeable

ACG 070x6 IVBP/O/E	ACG 070x7 NVBP/E	interchangeable
ACG 070x6 NVBP/O/E	ACG 070x7 NVBP/E	interchangeable
UCG 070x6 NVBP/O/E	UCG 070x7 NVBP/E	interchangeable
ACG 070x6 NTBP/O/E	ACG 070x7 NTBP*/E	interchangeable
UCG 070x6 NTBP/O/E	UCG 070x7 NTBP/E	interchangeable

6) ACF Generation N2F and N2F/60,

ACF 80-2 N2F	ACF 080N5 ITBP	new coupling needed
ACF 80-2 N2F/60	ACF 080N5 NTBP	new coupling needed

ACF 90-2 N2F	ACF 090N5 ITBP	new coupling needed
ACF 90-2 N2F/60	ACF 090N5 NTBP	new coupling needed

ACF 100-2 N2F	ACF 100N5 ITBP	new coupling needed
ACF 100-2 N2F/60	ACF 100N5 NTBP	new coupling needed

ACF 110-2 N2F	ACF 110N5 ITBP	interchangeable
ACF 110-2 N2F/60	ACF 110N5 NTBP	interchangeable

ACF 125-2 N2F	ACF 125N5 ITBP	new coupling needed
ACF 125-2 N2F/60	ACF 125N5 NTBP	new coupling needed

7) ACF Generation N3F, N3

ACF 80-2 N3F (615A)	ACF 080N5 ITBP	new coupling needed
ACF 080N3 IRBO/P	ACF 080N5 ITBP	new coupling needed

ACF 90-2 N3F (615A)	ACF 090N5 ITBP	new coupling needed
ACF 090N3 IRBO/P	ACF 090N5 ITBP	new coupling needed

ACF 100-2 N3F (615A)	ACF 100N5 ITBP	new coupling needed
ACF 100N3 IRBO/P	ACF 100N5 ITBP	new coupling needed

ACF 110-2 N3F (615A)	ACF 110N5 ITBP	interchangeable
ACF 110N3 IRBO/P	ACF 110N5 ITBP	interchangeable

ACF 125-2 N3F (615A)	ACF 125N5 ITBP	new coupling needed
ACF 125N3 IRBO/P	ACF 125N5 ITBP	new coupling needed

ACF Generation 4

ACF 080x4 IRBO/P	ACF 080x5 ITBP	new coupling needed
ACF 080x4 NVBO/P	ACF 080x5 NTBP	new coupling needed

ACF 090x4 IRBO/P	ACF 090x5 ITBP	new coupling needed
ACF 090x4 NVBO/P	ACF 090x5 NTBP	new coupling needed

ACF 100x4 IRBO/P	ACF 100x5 ITBP	new coupling needed
ACF 100x4 NVBO/P	ACF 100x5 NTBP	new coupling needed

ACF 110x4 IRBO/P	ACF 110x5 ITBP	interchangeable
ACF 110x4 NVBO/P	ACF 110x5 NTBP	interchangeable



Obsolete pump

Current pump

Steps to be taken

ACF Generation 4 (cont)

ACF 125x4 IRBO/P
ACF 125x4 NVBO/P

ACF 125x5 ITBP
ACF 125x5 NTBP

new coupling needed
new coupling needed

Note:
Explanations for 8) ACF Generation 4 are also valid for all UCF Generation 4 pumps.

Pump	Size model	Form Designation ¹⁾	Mounting form		Pump manuf. up to end of	Manuf. of spares up to end of	Note	Replaced by
AAA	15 - 20	NA	foot mounted		1963	1989*		LPD
	015-020	IRBE	flange mounted		1999	2009		LPD
AAD	25 - 38	N2A	foot mounted	excl valve	1968	1989*		ACE
		N3B	"-	incl valve				
AAE	25 - 38	NE	flange mounted	excl valve	1968	1989*		ACE
		NF	"-	incl valve				
AAG	45 - 70	N4A	foot mounted	excl valve	1963	1989*	Valve parts identical with ACG N2.	ACG
		N4B	"-	incl valve				
AAH	45 - 70	NE	flange mounted	excl valve	1965	1989*	Valve parts identical with ACG N2.	ACG
		NF	"-	incl valve				
AAK	80 - 125	N2G	horizontal foot		1963	1973*	Some parts in sizes 80-125 are identical with ABF-spares	D4
AAP	45 - 125	N8K	vert.tankmount		1965	1975*	See remark for AAK.	D4
ABB	100 - 225	N3B	foot mounted		1963	1973*	(Pump element parts in sizes 080-140 available; same as for the ABF-pump)	(ACF/LPQ ABQ)
	80 - 100	N3B	"		1967	1978*		
ABF	160 - 225	NxM	Vertical		1976	1986*	Valve parts are available.	ABQ
	80-140	IRYP	"		1991	2003**		ACF/LPQ
ABL	110 - 140	DN3B	foot mounted		1963	1973*	Some parts identical with ABQ-spares.	LPQ
ABQ	100-125	IRYP	Vertical		1993	2003**		LPQ
	140	IRYP	Vertical		1995	2005		LPQ
ABQ	180		Vertical		2008	2018		-
AHA	25 - 45	N4E 102	Vertical tank		1965	1975		E4
AHK	80 - 125	N2G	horizontal foot		1963	1973*	See remark for AAK.	
AHP	45 - 125	N8K	vertical tank		1963	1973*	See remark for AAK.	D4
AKA	25 - 45	N4E 102	Vertical tank		1965	1975		E4
ALA	25 - 52	N7E	Flange pump		1981	1991*	Pumps could to a certain extent be delivered.	E4/D4
		N7	"-	excl shaft seal				
		N7/58	submerged pump					E4
		N7EH	Horizontal flange					
		N7ES	vert.tank					
		N7ET	suct.pipe					
ALB	60 - 70	NM	Flange pump;	excl incl.chamber	1981	1999		D4
		N		excl shaft seal				
		NMH						
		NMS	axial inlet					
	80 - 90				1981	2001*	Some parts are identical to those in ALG	-
ALD	25 - 52	N7D			1981	1991*		D4
		N7D 509M	Fuel oil version					
		N7DH						
ALG	60 - 125	N3E	Hydraulic version		1981	1991*		-
	60 - 70	N3E/60	Fuel oil version					D4
		N3EH						
		N3ES	Axial inlet					
	125	NVBI	Radial inlet		1984	1994		-
		NVJI	Axial inlet					
		NVCI	Excl. inlet chamber					
	80,100,110	NVBI	Radial inlet		1998	2008		-
	90				2003	2013		
		NVJI	Axial inlet					
		NVCI	Excl. inlet chamber					
ACD	N3F-N5F		flange mounted		1970/-74/-76	1996		ACD
ACE	25-38	NC	flange mounted		1998	2012		ACE
ACE	25-38	NC/60	flange mounted		1998	2012		ACE
ACG	45-70	N2F	flange mounted		1978	2008		ACG
ACG	45-70	N2F/60	flange mounted		1978	2008		ACG
ACG	45-70	N3F	flange mounted		1989	2012		ACG
ACG	45-70	N4F	flange mounted		1989	2012		ACG
ACG	45-70	N5	flange mounted		1997	2012		ACG
ACG	45-70	N6	flange mounted		2001	2013		ACG

Pump	Size model	Form Designation ¹⁾	Mounting form	Pump manuf. up to end of	Manuf. of spares up to end of	Note	Replaced by
ANA	15 - 20	NA	horizontal foot	1981	1991*		—
AND	25 - 38	N5A	horizontal foot	1963	1989*		D4
ANG	25 - 90	N5G(A)	horizontal foot	1963	1989*		D4
ANL	32 - 60	N5MA(N)	Flange mounted	1963	1989*		D4
APD	25 - 52	N2D		1981	1991*		D4
		N2D/56	Hydraulic version				
		N2D 509M	Fuel oil version				
		NxDH					
		NxDS	axial inlet				
APG	60 - 125	N3E	Hydraulic version	1981	1991*		D6
	60-70	N3E/60	Fuel oil version				
		N3EH					
		N3ES	axial inlet				
	80-110	NVxI	Fuel oil version	1991	1994*		—
	125	"		1991	1992*	Some internal parts identical to those in ALG/ALB	
ARA	38 - 80	N5G	foot mounted	1963	1973*		D4
ATA	32 - 80	N3A	foot mounted	1964	1974		D4/D6
B4	25 - 70	B4F z2	flange mounted	1981	1991*		E4/D4
		B4S	submerged				
		B4T	Vert.tank				
		B4V	" pipe suction				
D4C	025 - 070	Lxxx		1998	2008		—
		Yxxx					
		Sxxx					
E4C	025-032	L/Yxxx	Cartridge	1991	2001*		—
	060-070	Sxxx	Complete pump	1991	2001*		—
	038-052	Sxxx	Complete pump	1995	2005*		—
E4S	025 - 070		submerged	1998	2008		E4
Valves							
GAA	25mm	S3A	with hand wheel	1964	1974		GAS
		S3B	with cap				GAS
GAD	1/2-11/2"	S6A	with hand wheel	1980	1990	Some internal parts are identical with GAR	GAR
		S6B	with cap				GAR
GAD	25-40mm	S6A	with hand wheel	1980	1990	Some internal parts are identical with GAS	GAS
		S6B	with cap				GAS
GAE	1/2- 11/2"		Panel mounted	1964	1974		GAR
Indicators							
		QNE, QNG, QNK		1988	1993		—
		QNL, QNM		1972	1982		—
		QNR		1984	1991		—
		QNV		1988	1993		—
		QNZ		1972	1982		—

Notes:

*) Shaft seals 50G or mechanical seals 52G are still manufactured but can be withdrawn from manufacture without further notice. See page 107, Note 1.
Available seals are noted at Section D.

**) Wear spare parts sets as G050, G053, G057 will still be available.

1) Stated generation figure is the last generation figure. Stated forms are the standard forms.
Optional forms have normally additional letters behind the standard form.

Performance data & dimension prints for obsolete products



Spare parts book
September 2016

Pump Rotor Size/length	Form	Mounting/valve	Flow l/m	Press. bar	Pump body (sleeve)	Rotation of rotor set	Mounting	Connection	Performance labels	Dimension print
AAA 15-20 -3 03	NA	(foot mounted)	3-16.	15	I	CCW	F	BSP	AAA 0301-0302	AAA 0402-03
15-20	IRBE	Flange mounted	3-16	15	I	CCW	B	BSP	AAA 0301-0302	
AAD 25-38 -3	N2A N3B N3B 615A	foot; excl valve foot; incl valve " ; max 3 bar	5-130	15	I	CCW	F	BSP	AAD 0301-0303	AAD 0401
AAE 25-38 -3	NE NF NF 615A	Flange; excl valve Flange; incl valve " ; max 3 bar	15-130	15	I	CCW	B	BSP	AAD 0301-0303	AAE 0401
AAG 45-70 -3	N4A N4B N4B 615A	Foot, excl valve Foot; incl valve " ; max 6 bar	90-500	20	I(I)	CCW	F	FL	AAG 0301-0305	AAG 0401 AAG 0402
AAH 45-70 -3	NE NF NF 615A	Flange, excl valve Flange, incl valve " ; max 6 bar	90-500	20	I(I)	CCW	B	FL	AAG 0301-0305	AAH 0401 AAH 0402
AAK 80-125 -3	N2G	Excl valve	350-2200	20	S(I)	CCW	F	FL	AAK 0306-0310	AAK 0401
AAP 45-70 -3 80-125	N8K	Excl valve	90-2200	20	F(I)	CCW	T	FL	AAG 0301-0304 AAK 0306-0310	AAP 0403
ABB 80-225 -3	N3B	Foot incl valve	1000-6000	10	I(I)	CCW	F	FL	ABB 0311-0320	ABB 0401
ABF 80-100 -3 110-225	N2M N4M	Vertical foot	670-7000	10	I(I)	CCW	Y	FL	ABB 0311-0320	ABF 0403...
ABL 110-140 -3	DN3B	Foot incl valve	1800-6000	10	I(I)	CCW	F	FL	ABQ 0309-0313	ABL 0402
ABQ 100-140 -3	IRYP	Vertical	1300-6000	10	I(I)	CCW	Y	FL	ABQ 0309-0313	ABQ 0406
AHA 25-45 -4	N4E 102	Without valve	20-190	40/70	I	CW	T	BSP	AHA 0301-0304	AHA/AKA 0401
AHK 80-125 -4	N2G		350-2200	30	S(I)	CCW	F	FL	AHK 0301-0305	AHK 0401
AHP 45-70 -4 80-125	N8K		90-2200	30	F(I)	CCW	T	FL	AHP 0301-0304 AHK 0301-0305	AHP 0401
AKA 25-45 -4	N4E 102	Without valve	15-125	70/100	I	CW	T	BSP	AKA 0301-0304	AHA/AKA 0401
ALA 25-52 -4	N7E N7ET N7ES N7EH N7EG N7 N7/58	N7ES less strainer & bolt Excl shaft seal Submerged (excl front cover & seal)	8-400	70/100	I	CW	C T J B	BSP */ */ Size 052: Flange connection.	ALA 0321-0330	ALA 0410 ALA 0411 ALA 0413 ALA 0412
ALB 60-90 -4	NM NMH NMS N	Excl shaft seal for submerged mounting	150-1100	70/100	I(I)	CW	C B J M	FL	ALB 0301-0312	ALB 0401 ALB 0402 ALB 0403 ALB 0401
ALD 25-52 -4	N7D N7D 509M Fuel oil version N7DH		20-400	70/100	N(I)	CW	C C B	FL	ALD 0321-0330	ALD 0401-0402 ALD 0401-0402 ALD 0403-0404
ALG 60-125 -4 60-70	N3E N3E/60 NxEH NxES	Hydraulic version Fuel oil version	150-2300 150-600	70/100	N(I)	CW	C C B J	FL	ALG 0351-0364 ALG 0301-0304	ALG 0401 ALG 0401 ALG 0402 ALG 0403
80-125	N3/B3	Fuel oil version	380-2200	70/100	N(I)	CW	C J B	FL	ALG 0305-0314	ALG 0401 ALG 0403 ALG 0402

Pump Rotor Size/ length	Form	Mounting/valve	Flow l/m	Press. bar	Pump body (sleeve)	Rotation of rotor set	Mounting	Connection	Performance labels	Dimension print
ANA 15-20 -6	NA	Without valve	5-14.	60	I(I)	CCW	F	BSP	ANA 0301-0302	ANA 0401
AND 25-38 -6	N5A	Excl valve	12-120	40	I(I)	CCW	F	FL	ANG 0301-0303	AND 0401
ANG 25-90 -6	N5GA	Excl valve, foot mounted	12-820	60	S(I)	CCW	F	FL	ANG 0301-0309	ANG 0402
ANL 38-60-6	N5M	Flange mounted	53-230	60	Size38 A(1) Size45-60 S(1)	CCW	B	FL	ANG 0303-0306	ANL 0401
APD 25-38 -8 45-52	N2D N4D Nx D/56 Nx D/509M Nx DS	Hydraulic version Fuel oil version	20-150 150-325	140/160	N(I)	CW	C C C J	FL	APD 0321-0330	APD 0401 APD 0402 APD 0403-0404 APD 0405-0406
APG 60-125 -8	N3E N3E/60 NxH NxS	Hydraulic version Fuel oil version	150-2200	140/160	N(I)	CW	C C B J	FL	APG 0301-0314	APG 0401 APG 0402 APG 0403
ARA 38-80 -9	N5G	Excl valve	50-575	100	N(I)	CCW	F	FL	ARA 0303-0308	ARA 0401
ATA 32,38,52-12	N3A	Excl valve	25-135	175	I(I)	CCW	F	FL	ATA 0301-0303	ATA 0401
B4 25-70-4	B4F N1/L1 B4S B4T B4F N2/L2 B4S B4T B4V	Submerged submerged	20-840	100/140	I	CW	B M T B M T J	BSP*	B4 0301-0328 *sizes 052-070: FL	B4F 0401 B4S 0401 B4T 0401 B4F 0402 B4S 0402 B4T 0402 MS-16685E
D4C 25-70-4	Lxxx Yxxx Sxxx	Cartridge pump "-" incl pump body	10-850	160 (Y)	(L)	CW	C	FL	D4 0315-0328	D4C 0401
E4C 25-70-4	L/Yxxx Sxxx Rxxx	Cartridge pump incl pump body "	10-960	70	(L) (Y)	CW	C	FL	E4 0315-0328	E4C 1110
E4S 25-70-4 38 25-52 25-70	N1 N2 N3 N4	Submerged 19mm shaft dia	10-850	70/100	L	CW	M	BSP*	E4S 0333-0336 *sizes 060-070: FL	E4S 0403 E4S 0403 E4S 1112E MS-23105
GAA 25mm	S3A (615C)		150	50-175	S			FL		GAA 0401
GAD 1/2-1 1/2"	S6A S6B	with hand wheel with cap	15-300	2-100	I			BSP		GAD 0401 GAD 0401
25-40mm	S6x		75-300	2-75	I			FL		GAD 0402
60mm	S6x		450-900	2-75	I			FL		GAD 0403
GAE 1/2-1 1/2"		Panel mounted	15-300	2-100	I			BSP		GAE 0402-03

Pump body and sleeve

I Cast iron
S Cast steel
F Welded steel
N Nodular cast iron
L Aluminium

Rotation of rotor set

CW clockwise rotation
CCW counter clockwise
rotation

Mounting form

F Foot (bedplate) mounting
B Bellhouse (flange) mounting
T Vertical tank mounted
with our without suction pipe)
M Submerged pump
J Axial inlet
C Pump without inlet chamber
Y Vertical foot mounted

Connections

BSP BSP-threaded
connection
FL Flange connections

Note: On special pumps above information may differ.

Section C

Current products

List of components

Valid for all ACD pumps, size 025. Rotor lead and Generation: L6/N6

With version codes: I } R } B } P }

N } T }

V }

The version code is composed of the letters in
the 4 columns.

Example of pump designations std: ACD 025L6 NVBP

Pos No	Denomination	Qty	G012 Rotor set	G050 Shaft seal	G053 Minor kit	G057 Joint kit	Parts valid for obsolete pumps			Note
							N3F	N4F	N5F	
1020	Power rotor	1	x				x	x	x	1
134	Locking screw	1	x		x	x	x	x	x	
162	Nylon sleeve socket	1	x		x	x	x	x	x	
202	Idler rotor	2	x				x	x	x	1
401	Pump body	1							x	
416	Inlet flange	1					x	x	x	
417	Screw	8						x	x	
417A	Nut	8						x	x	
418	Gasket	1			x	x	x	x	x	
423	Gasket	1			x	x	x	x	x	
427	Outlet flange	1					x	x	x	
443	Drip nipple	1					x	x	x	
451	Screw	8						x	x	
501	Front cover	1								
506	O-ring alt. gasket	1			x	x		x	x	2
509	Shaft seal	1		x	x					3
551	Rear cover	1						x	x	
556	Gasket	1			x	x		x	x	
601	Valve cover	1							x	
602	Sealing washer	1			x	x	x	x	x	
605	O-ring	1			x	x	x	x	x	
612	Regulating screw	1							x	
612A	Retaining ring	1							x	
614	Valve piston	1							x	
615	Valve spring	1					x	x	x	

Notes:

1) Delivered only as Rotor set G012.

When ordering spare parts, please state the complete pump identification according to its name plate and required spare part set or the required parts position number.

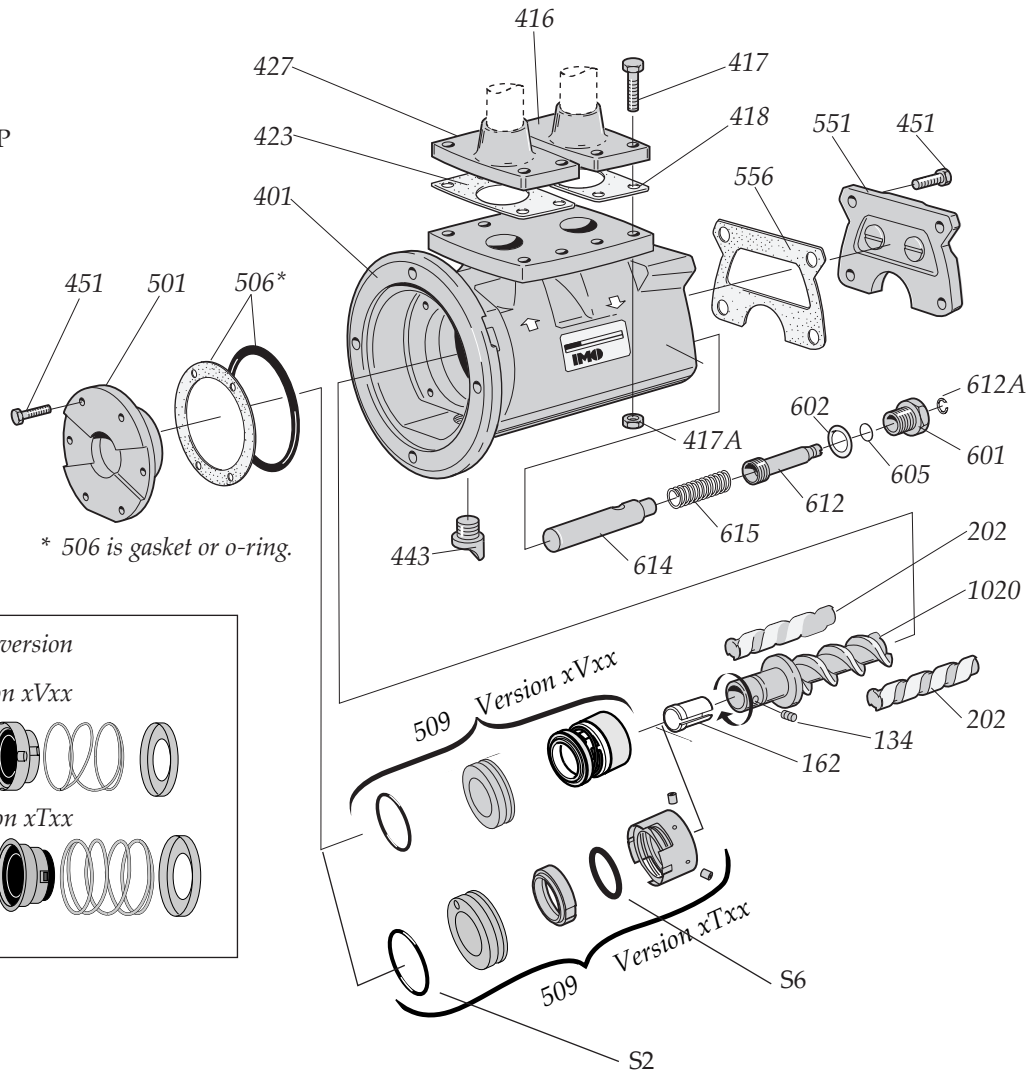
2) The spare part set includes both O-ring and gasket. The o-ring is to be used in the L6/N6 version with o-ring. The gasket is to be used in the version with gasket. *Never fit both o-ring and gasket in one pump!* Change from gasket to o-ring was done in early 1996.

3) Shaft seal p/n 015701, for obsolete pumps N3F, N4F & N5F is obsolete.

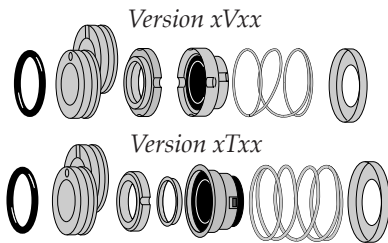
N3F, N4F & N5F: Please order a new pump x6 NxBP which has same technical data and measurement.

Exploded view

ACD 025x6 xxBP



Shaft Seal Obsolete version



Ordering code

Pos No	Spare parts (set)		Part.No. Size 025	Note
Pump	ACD 025L6	NVBP	182006	
"	ACD 025N6	NVBP	181990	
G012	Rotor set	L-lead	062893	1
"	"	N-lead	062885	1
G050	Shaft seal	xTxx	190810	
"	"	xVxx	192691	4
G053	Minor kit	xTxx	192202	
"	"	xVxx	192203	4
G057	Joint kit		183681	4
443	Drip nipple		018515	1
501	Front cover	Nxxx	166983	
506	O-ring	(current version)	016790	
	Gasket	(old version)	091900	1
612	Regulating screw		117077	3
614	Valve piston		117093	3
615	Valve spring		018523	1
S2	O-ring	xTxx	190806	
S6	O-ring	xTxx	190791	

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling of the pump.

G053 Minor kit

For service

Major kit = pump

For repair after damage or greater wear.

Ordering example:

For IMO-pump ACD 025L6 IVBP
serial number 456789:

Shaft seal pos G050 p/n 192691

Valve spring pos 615 p/n 018523

Notes:

- 1) Also valid for obsolete pumps N3F, N4F & N5F.
- 2) Also valid for obsolete pump N4F & N5F.
- 3) Also valid for obsolete pump N5F.
- 4) Also used for old pumps xRxx if viton is acceptable.

List of components

Valid for all ACE pumps, size 025/032/038. Rotor lead and Generation: D3/K3/L3/N3

With version codes: N } Q } B } P }
T }
V }

Also valid for pump options: A050, A078, A101, A291
The version code is composed of the letters in the 4 columns.
Example of pump designations std: ACE 025L3 NTBP;
option: ACE 038N3 NVBP A101

Pos no	Denomination	Q-ty	Components included in spare parts sets:							Notes
			G011	G012	G050	G053	G057	G070	G082	
1010	Power rotor	1	x							
1020	Power rotor	1		x						
113	Key	1	x	x						
122	Ball bearing	1	x	x		x				
125	Secondary seal	1			x	x	x		x	1,4
201	Idler rotor	2	x							
202	Idler rotor	2		x						
351	Balancing bush	1	x	x						
401	Pump body	1								
416	Suction flange	1								
417	Screw	8								
418	Gasket to suction flange	1				x	x			
423	Gasket to discharge flange	1				x	x			
427	Discharge flange	1								
440	Return valve	1								5
443	Seal chamber plug	1								3
443A	Tension pin	1								3
443B	O-ring	1								3
451	Screw	4								
453	Screw	4								
462	Plug	1								
462A	Sealing washer	1				x	x			
463	Plug	1								
463A	Sealing washer	1				x	x			
501	Front cover	1								
506	Gasket	1				x	x			
509	Shaft seal	1			x	x				
537	Deaeration plug	2								
537A	Washer	2				x	x			
551	Rear cover	1								
556	Gasket	1				x	x			
557	Plug	1								
557A	Washer	1				x	x			
605	O-ring	1				x	x	x		
608	Valve spindle	1						x		
608A	Tension pin	1						x		
6120	Set screw	1						x		
613	Pin	1						x		
614	Valve piston	1						x		
615	Valve spring	1						x		
7310	Compl. Seal Guard	1							x	2
732	Gas generator	1							x	2

Explanations:

- A050: Unpainted pump
- A078: Rubber details in nitrile (when viton is standard)
- A101: Pump with CCW-rotor set
- A291: Pump with tapered power rotor. Reduced flow
- G011: Rotor set (CCW)
- G012: Rotor set (CW)
- G050: Shaft seal
- G053: Minor kit
- G057: Joint kit
- G070: Valve element
- G082: Seal Guard kit

Notes:

- 1) Version NTBP and NQBP
- 2) Version NQBP only
- 3) For pumps manufactured before december 2000, these parts can be replaced by Plug, p/n 189429 and Washer, p/n 010967.
- 4) Excluded in xTxx A078
- 5) Removed from August 2011. Does not need to be replaced.

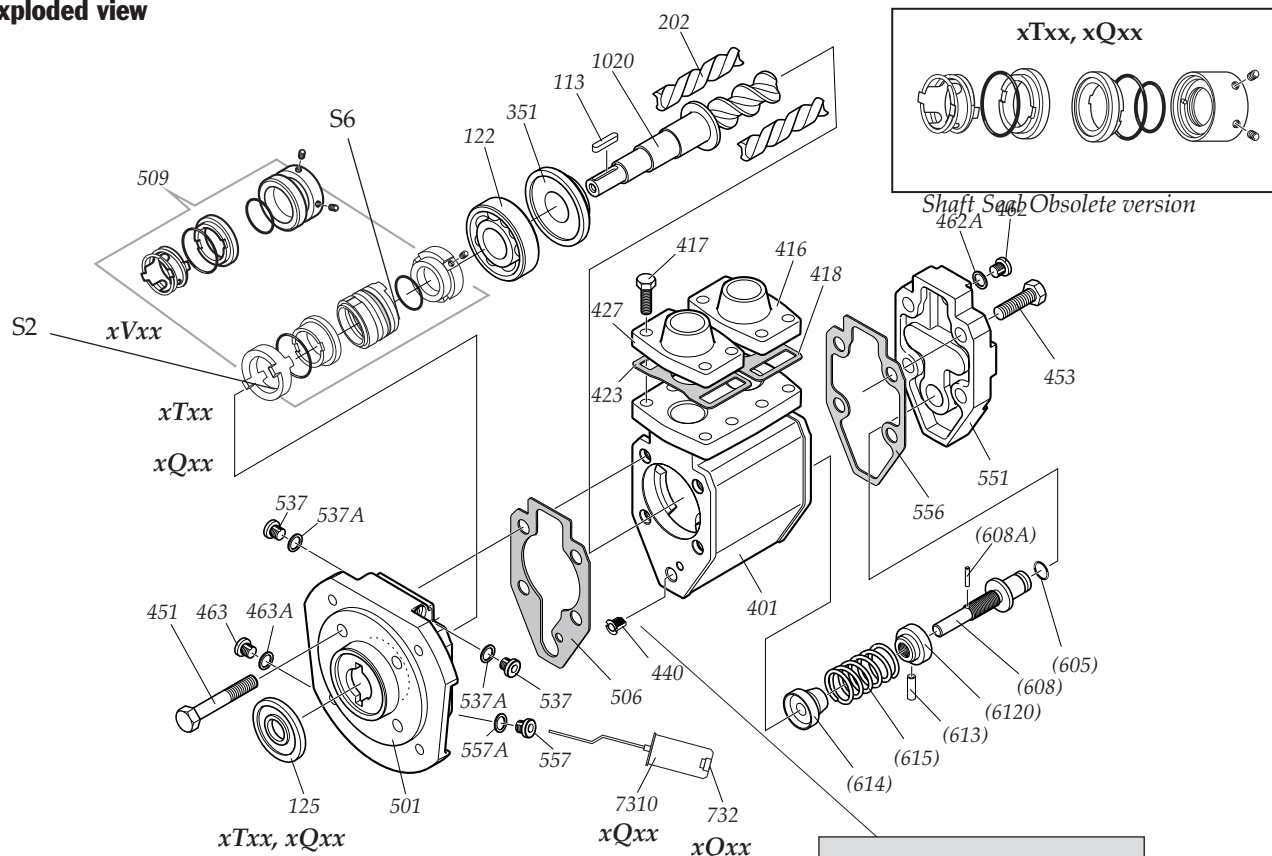
ACE (D3/K3/L3/N3) Low pressure pump

Obsolete ACE (L1/L2, K1/K2, N1/N2) See section D



Spare parts book
September 2016

Exploded view



Ordering code

Pos No	Spare parts (set)	Part no for pump size			Note
		025	032	038	
Pump	ACE xxxL3 NVBP	189897	189892	--	
	ACE xxxK3 NVBP	--	--	189886	
	ACE xxxN3 NVBP	189686	189787	189788	
	ACE 038D3 NVBP	--	--	190749	
G011	Rotor set K-lead CCW-rot	--	--	190489	2
	" L-lead	190493	190490	--	2
	" N-lead	190492	190491	190488	2
G012	Rotor set K-lead CW-rot	--	--	190482	2
	" L-lead	190486	190485	--	2
	" N-lead	190487	190484	190483	2
	" D-lead	--	--	192698	
G050	Shaft seal xQxx	190495	190495	190497	1
	" xTxx	190495	190495	190497	1
	" xTxx A078	191288	191288	191288	
	" xVxx	194030	194030	194030	1
G053	Minor kit xQxx	190503	190712	190499	1
	" xTxx	190503	190712	190499	1
	" xVxx	190501	190710	190500	1
G057	Joint kit xQxx	190524	190713	190523	1
	" xTxx	190524	190713	190523	1
	" xVxx	190525	190714	190522	1
G070	Valve element	189873	189873	189873	1
	" A078	191291	191291	191291	
G082	Sealguard kit xQxx	190526	190526	190527	
122	Ball bearing	173765	173765	173591	
125	Secondary seal xQxx, xTxx	190469	190469	190468	1
351	Balancing bush	189701	189701	189778	
5010	Front cover	189692	189692	189775	
732	Gas generator xQxx	190530	190530	190530	
S2	O-ring xQxx, xTxx	191514	191514	191514	1
S6	O-ring xQxx, xTxx	191518	191518	191518	1

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling the pump.

G053 Minor kit

For service.

Major kit = pump

For repair after damage or greater wear.

Ordering example:

For IMO-pump ACE 032N3 NVBP, serial number 690010:

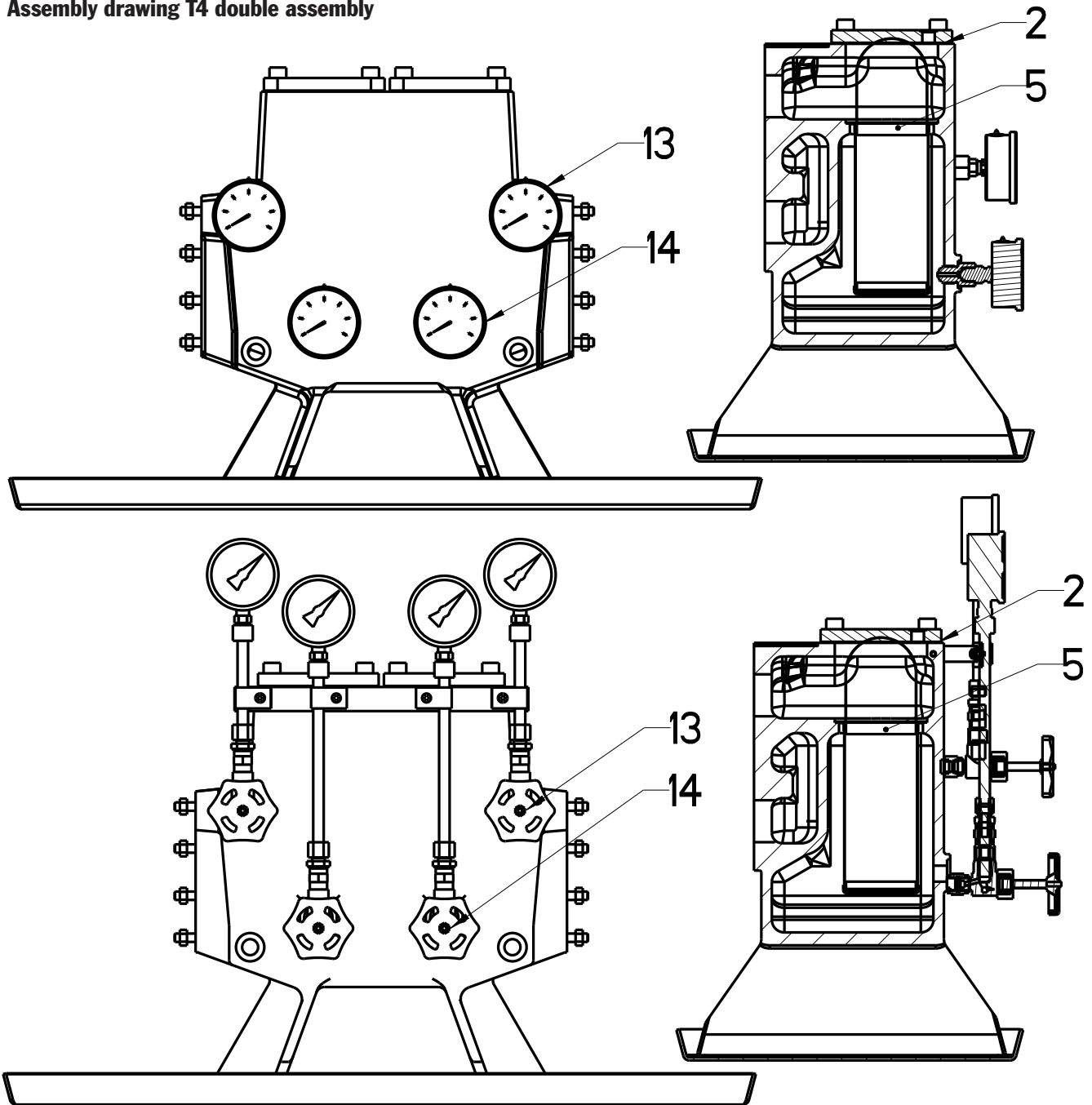
Shaft seal pos G050 p/n 194030

Valve element pos G070 p/n 189873

Notes:

- 1) Not valid for A078
- 2) Not valid for A291

Assembly drawing T4 double assembly

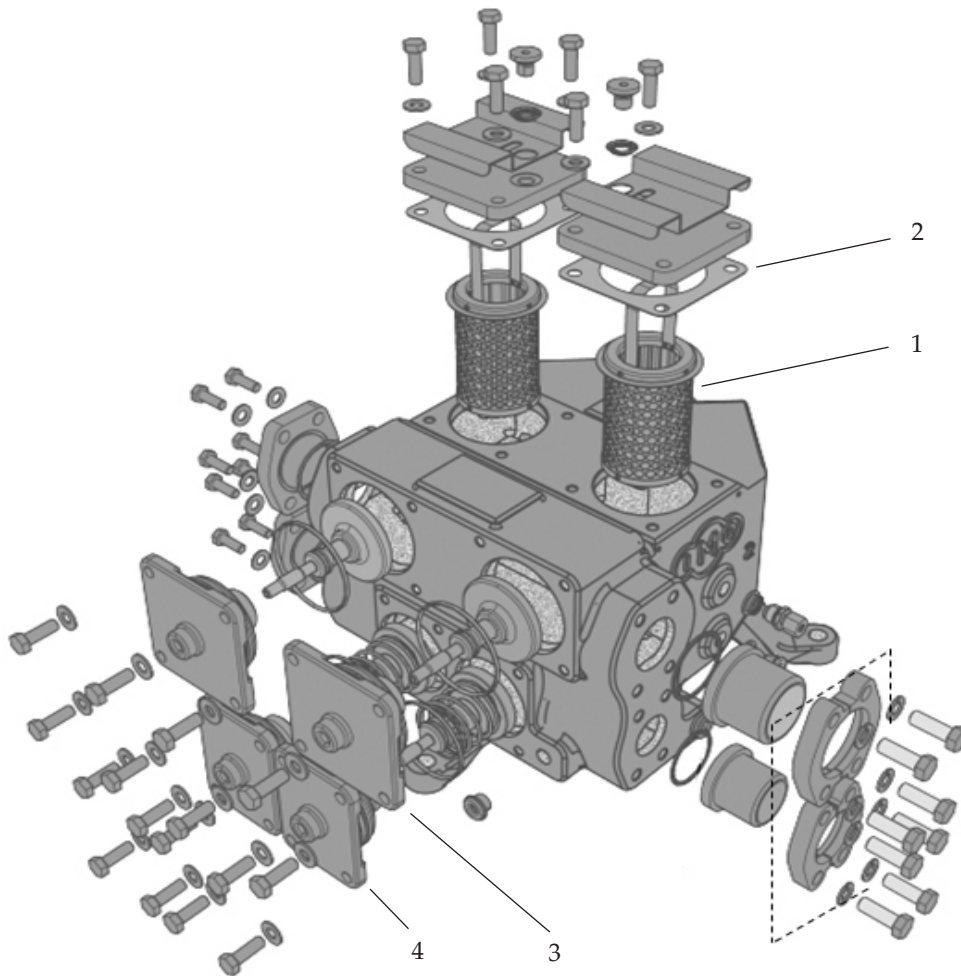


Ordering code

For double assembly T4

Pos No	Description	p/n	Included in	Scale	Note
2	Joint	160929			
5	Strainer, 2 pcs dbl unit	160937	Q1xx		steel mesh without magnetic core 500 my
"	"	172866	Q2xx		steel mesh with magnetic core 200 my
"	"	161885	Q3xx		steel mesh with magnetic core 500 my
"	"	189935	Q4xx		steel mesh without magnetic core 300 my
13	Inlet gauge	160960	Qx1x	bar-kPa	-1/+9 bar, Ø 63 mm, hor. connection, not for new sales
"	"	160960	Qx2x	"	-1/+9 bar, Ø 63 mm, hor. connection, not for new sales
"	"	189585	Qx6x	"	-1/+5 bar, Ø 63 mm, vert. connection
"	"	189586	Qx8x	"	-1/+9 bar, Ø 63 mm, vertical connection
14	Outlet gauge	172346	Qx1x	bar-MPa	0/+10 bar, Ø 63 mm, hor. connection, not for new sales
"	"	160952	Qx2x	"	0/+25 bar, Ø 63 mm, hor. connection, not for new sales
"	"	189587	Qx6x	"	0/+10 bar, Ø 63 mm, vert. connection
"	"	189588	Qx8x	"	0/+16 bar, Ø 63 mm, vert. connection

Assembly drawing T5 double assembly



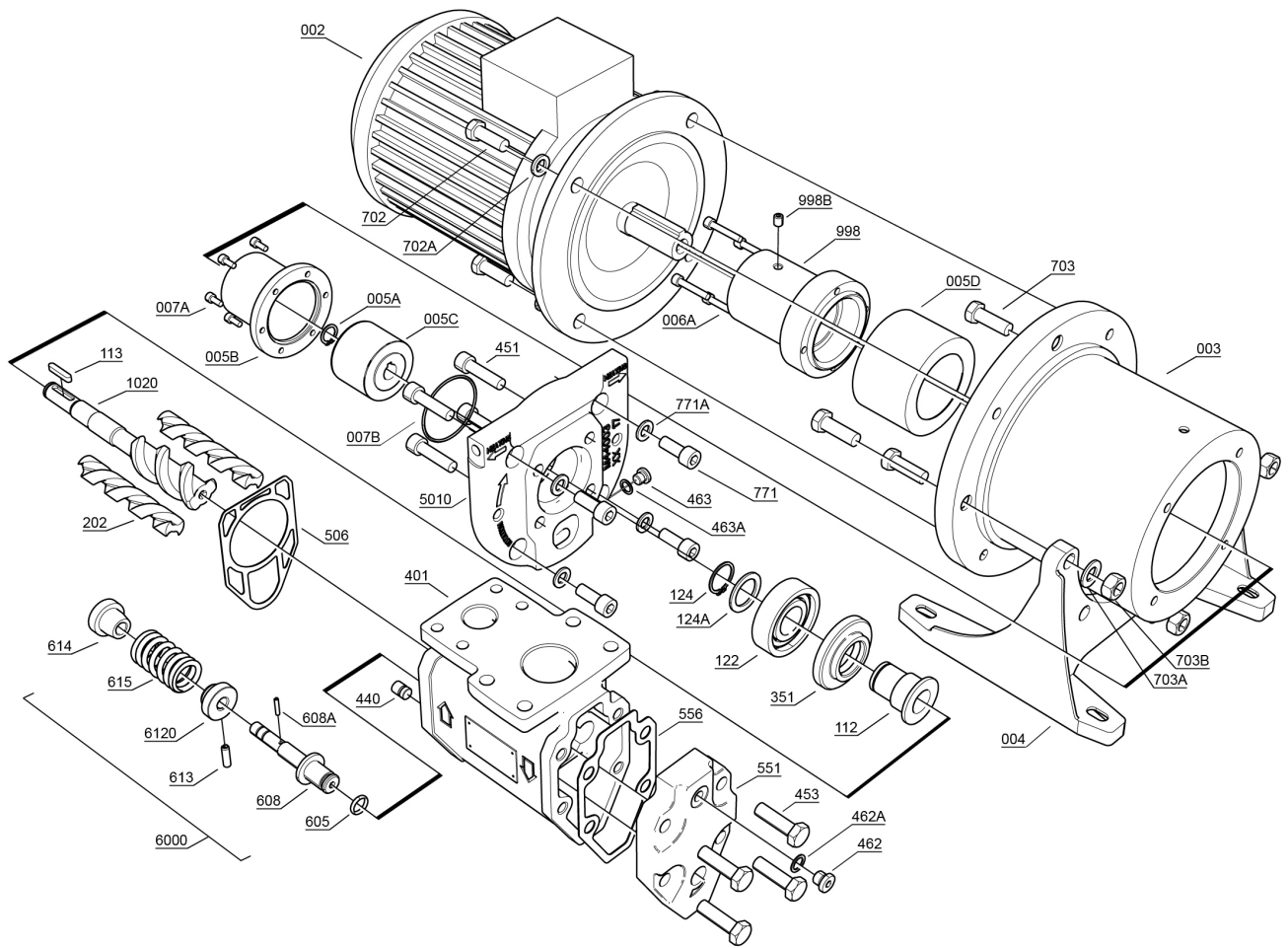
Ordering code

For double assembly T5			
Pos No	Spare Parts (set)	Part no	Note
1	Strainer	192375	Two strainers / each double assembly
2	Gasket	160929	Two gaskets / each double assembly
3	Compl. inlet valve	192350	Two compl. inlet valves / each double assembly
4	Compl. outlet valve	192355	Two compl. outlet valves / each double assembly

List of components

Valid for all ACE OptiLine pumps, size 025/032/038. Rotor lead and Generation: D4/K4/L4/N4
 With version codes, NJBP, NKBP, NLBP & NMBP.

PosNo	Designation	Qty	G012	G054	G057	G070	G098	Notes	Explanations
002	Motor	1							G012: Rotorset
003	Connecting frame	1							G054: Major kit
004	Angle bracket	1							G057: Joint kit
005	Magnetic coupling complete	1					x		G070: Complete valve
005A	Retaining ring	1		x	x		x		G098: Complete magnetic coupling
005B	Sealing can	1					x		
005C	Inner magnetic rotor	1					x		
005D	Outer magnetic rotor	1					x		
006A	Screw	4							Notes: 1) Gaskets for counter flanges 2) Not sold separately
007A	Screw	6							
007B	O-ring	1		x	x		x		
1020	Power rotor	1	x	x					
112	Balancing piston	1	x	x				2	
113	Shaft key	1	x	x					
122	Ball bearing	1	x	x					
124	Retaining ring	1	x	x	x				
124A	Support ring	1	x	x	x				
202	Idler rotor	2	x	x					
351	Balancing bush	1	x	x					
401	Pump body	1							
418	Gasket	1		x	x			1	
423	Gasket	1		x	x			1	
451	Screw	4							
453	Screw	4							
462	Plug	1							
462A	Sealing washer	1		x	x				
463	Plug	1							
463A	Washer	1		x	x				
5010	Front cover	1							
502	Plug	2							
506	Gasket	1		x	x				
551	Rear cover	1							
556	Gasket	1		x	x				
6000	Compl. Valve	1					x		
(605)	O-ring	1		x	x	x			
(608)	Valve spindle	1				x		2	
(608A)	Tension pin	1				x		2	
6120	Set screw	1				x		2	
(613)	Tension pin	1				x		2	
(614)	Valve piston	1				x		2	
(615)	Valve spring	1				x		2	
701	Screw	4							
701A	Washer	4							
702	Screw	4							
702A	Washer	4							
703	Screw	3							
703A	Washer	3							
998	Drive hub	1							
998B	Screw	1							
998A	Washer	1							
998B	Screw	1							



Pos No	Spare Part (set)	Part numbers for pump size			
		025	032	038	
G012	Rotor set	D-lead		193362	
	"	K-lead		193360	
	"	L-lead	193356	193358	
	"	N-lead	193357	193359	193361
G054	Major kit	D-lead		193369	
	"	K-lead		193367	
	"	L-lead	193363	193365	
	"	N-lead	193364	193366	193368
G057	Joint kit		193374	193375	193376
G070	Valve element	189873	189873	189873	
G098	Magnetic coupling	xKxx	193370	193370	
	"	xLxx	193371	193371	193371
	"	xMxx		193372	193372
	"	xNxx		193373	
122	Ball bearing		173765	173765	173591

Recommended Spare Parts Kits and tool kits

Every shutdown for service of a plant is costly. The time for repair should therefore be limited to a minimum which can be accomplished by keeping a spare pump. The changed pump can later be repaired at a suitable place and can then be used as a spare pump. For maintenance the following spare parts kits and tools are recommended:

Kit:	Content:	To be used for:
G057	Gaskets & o-rings	Dismantling of pump
G012	Rotor set	Repair after break down
122	Ball bearing	Repair after break down
193397	Toolkit	Dismantling & assembly

List of components

Valid for all ACF/UCF pumps. Sizes, Rotor lead and Generation: 080/090/100 K5/N5 & 110/125 L5/N5.

With version codes: I } T } B } E }
N } P }

Also valid for pump options: A020, A078, A101

Example of pump designations std: ACF 080N5 ITBP;
option: ACF 100K5 NTBP A101 - UCF 080N5 ITBE

Pos	Part Denomination	Qty	Included components in Spare part sets							Note
			G011	G012	G050	G053	G054	G057	G070	
1010	Complete power rotor (CCW-rot.)	1	x				x			
1020	Complete power rotor (CW-rot.)	1		x			x			
(103)	Ball	1	(x)	(x)						
(104)	Spring	1	(x)	(x)						
(105)	Hole screw	1	(x)	(x)						
(106)	Balancing piston	1	(x)	(x)						
113	Key	1	x	x						
122	Ball bearing	1				x	x	x		2,3
130	Support ring	1				x	x	x		2,3
131	Retaining ring	1				x	x	x		2,3
201	Idler rotor (CCW-rotation)	2	x							
202	Idler rotor (CW-rotation)	2		x			x			
401	Pump body	1								
4240	Tuning element	1								
(424)	Cover	1								
(424A)	Gasket	1				x	x	x		2,3
(425)	Screw	4								
(429)	Guiding screw	1								
(429A)	Tenison pin	1								
(430)	Piston 1 (Valid for sizes 100-125)	1								
(432)	Tenison pin (Valid for sizes 100-125)	1								
(437)	O-ring	1				x	x	x		2,3
451	Screw	4								
451A	Washer	4								
453	Screw	8								
455	Screw	4								
455A	Washer	4								
462	Plug	1								
462A	Washer	1				x	x	x		2,3
463	Plug	1								
463A	Washer	1				x	x	x		2,3
480	Valve housing	1								
501	Front cover	1								
506	O-ring	1				x	x	x		2,3
509	Mechanical seal	1			x	x	x			1,2
520	Compl. cover	1								
520A	O-ring	1				x	x	x		2,3
(520B)	Tension pin	1								
521	Screw	4								
521A	Washer	1								
(537)	Plug	1								
(537A)	Washer	1				x	x	x		2,3
556	Gasket	1				x	(x)	x		2,3
6000	Valve cartridge	1							x	
(6010)	Compl. valve cover	1							(x)	
(602)	Pin	1							(x)	
(603)	O-ring	1				x	x	x	(x)	2,3
(605)	O-ring	1				x	x	x	(x)	2,3
(608)	Valve spindle	1							(x)	
(609)	Washer	1							(x)	
(610)	Ball bearing	1				x			(x)	2,3
(612)	Regulating nut	1							(x)	
(614)	Valve piston	1							(x)	
(615)	Spring	1							(x)	
(622)	Nut	1							(x)	
(623)	Ball bearing	1				x			(x)	2,3

Explanations:

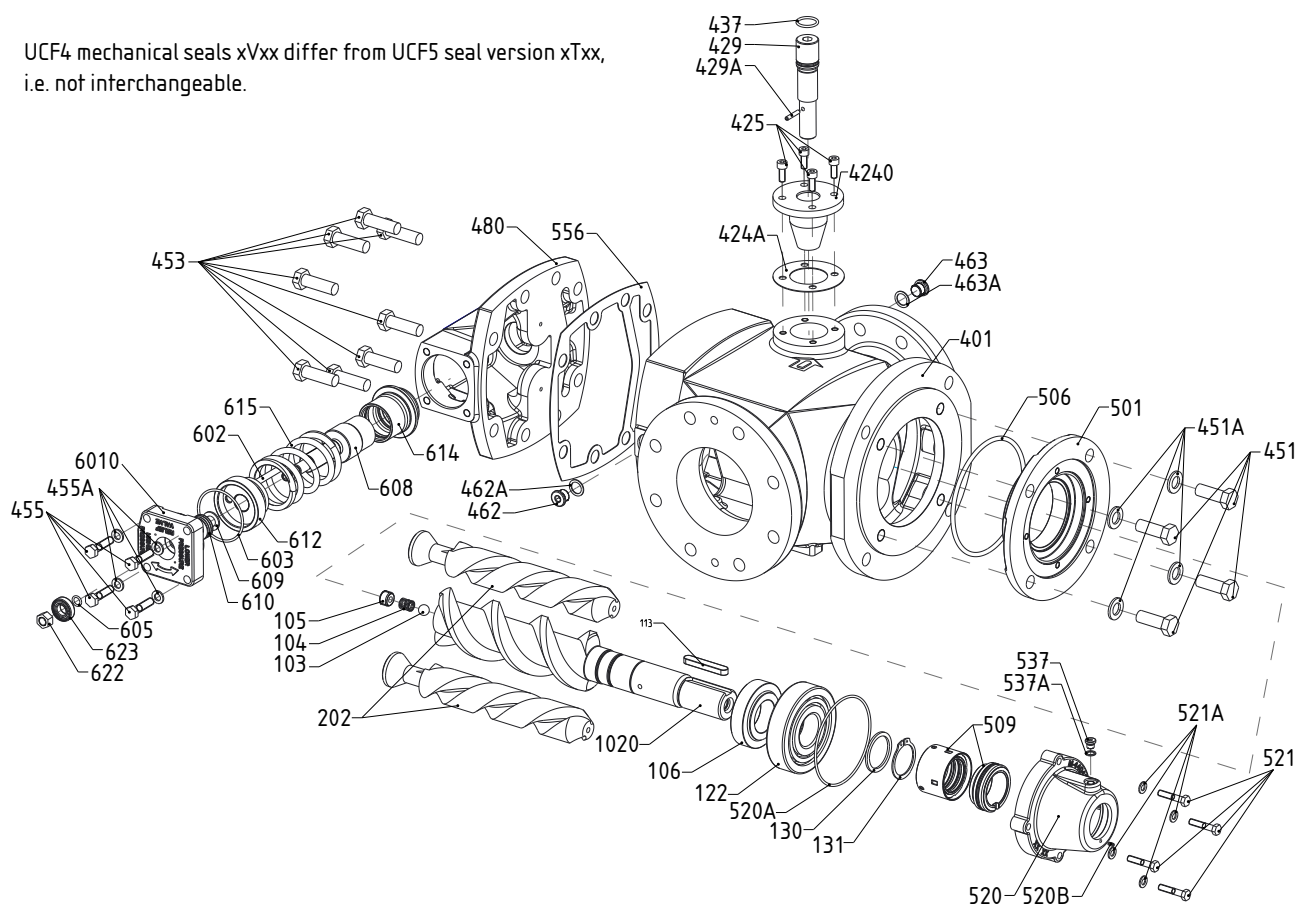
ACF: Pump with DIN flanges
UCF: Pump with ANSI flanges
CW: Clockwise rotation
CCW: Counter clockwise rotation
G011: Rotor set CCW rotation
G012: Rotorset CW rotation
G050: Compl shaft seal
G053: Minor kit (G050+G057)
G054: Major kit
G057: Joint kit
G070: Valve element

Notes:

1) G050 xVxx is obsolete.
G050 xTxx - when replacing xVxx with xTxx seal, remove and discard washer pos. 132.
2) G053 xVxx is obsolete.
G053 xTxx - when replacing xVxx with xTxx seal, remove and discard washer pos. 132.
3) G057 xV/
Txx - Joint Kit G057 is similar independent of change of Shaft Seal G050. If pump still has xVxx Seal - pos. 132 needs to be mounted.
If pump has been upgraded with xTxx Seal, pos. 132 is no longer needed and can be disregarded.

Exploded view

UCF4 mechanical seals xVxx differ from UCF5 seal version xTxx, i.e. not interchangeable.



Ordering code

Pos No	Spare Parts (set)		Part numbers for pump size					
			080	090	100	110	125	
G011	Rotor set	N-lead	192966	192968	192970	192972	192974	
		CCW	K-lead	192967	192969	192971	--	--
		L-lead	--	--	--	192973	192975	
G012	Rotor set	N-lead	192785	192958	192960	192962	192964	
		CW	K-lead	192786	192959	192961	--	--
		L-lead	--	--	--	192963	192965	
G050	Shaft seal	xTxx	194659	194659	194660	194660	194660	
G053	Minor kit	xTxx	194661	194662	194663	194664	194665	
G057	Joint kit		192990	193101	192991	193103	192992	
G070	Valve	xxxP	192553	192553	192554	192554	192555	

Recommended Spare Parts Kits

Every shutdown for service of a plant is costly. The time for repair should therefore be limited to a minimum which can be accomplished by keeping a spare pump. The changed pump can later be repaired at a suitable place and can then be used as a spare pump. For maintenance the following spare parts kits are recommended:

Note:

New coupling needed for sizes 80, 90, 100 and 125 when replacing ACF Gen. 4 pump with ACF Gen. 5 pump.

Kit	Contents	To be used for
G057	Gaskets, o-rings, ball bearing, etc	Dismantling of the pump
G053	G057 + Shaft seal G050	Normal scheduled inspection
G054	G053 + Complete rotor set	Repair after major breakdown or great wear

Mechanical seal valid for both ACF5 and UCF5 xTxx seal versions.

List of components

Valid for all ACG/UCG pumps, size 045/052/060/070. Rotor lead and Generation: D7/K7/N7

With version codes: N} T} B} E} Also valid for pump options: A101, A327, A385

V} F} G}

Example of pump designations

P}

std: ACG 045N7 NVBP; option ACG 070N7 NVBP A101

Pos No	Denomination	Qty	Components included in Spare parts sets:							Note
			G011	G012	G050	G053	G054	G057	G070	
1010	Power rotor CCW-rot.	1	x					(x)		
1020	Power rotor CW-rot.	1		x				x		
106	Balancing piston	1	x	x				x		5
113	Shaft key	1	x	x				x		
120	Distance sleeve	1								
122	Ball bearing	1				x		x		
124	Retaining ring	1				x		x	x	
124A	Support ring	1				x		x	x	
201	Idler rotor CCW-rot.	2	x					(x)		
202	Idler rotor CW-rot.	2		x				x		
359	Distance washer	1								
359A	Support ring	1				x		x	x	
401	Pump body	1								
424	Sleeve	1								4
424A	Washer	1								4
429	Spindle	1								4
437	O-ring	1								4
440	Return valve	1								8
451	Screw	4/6								
453	Screw	4								
462	Plug	2								1
462A	Sealing washer	2				x		x	x	1
473	Grease nipple	1								
473A	Grease nipple cover	1								
480	Valve housing	1								2
5010	Front cover	1								
502	Tension pin	1								6
502A	Plug	1								6
506	Gasket	1				x		x	x	
509	Shaft seal	1			x	x		x		
514	Retaining ring	1				x		x	x	
537	Plug	2								
537A	Sealing washer	2				x		x	x	
551	Rear cover	1								3
556	Gasket	1				x		x	x	
601	Valve cover	1								x
602	Sealing washer	1				x		x	x	x
605	O-ring	1				x		x	x	x
608	Valve spindle	1								x
608A	Retaining ring	1				x		x	x	x
612	Set screw	1								x
614	Valve piston	1								x
615	Valve spring	1								x

Notes:

- 1) Excluded in xxxG
- 2) Excluded in xxxE
- 3) Valid for xxxE
- 4) Valid for pump option A327 & A385, size 70 only
- 5) Included in item 1020 or 1010
- 6) Included in item 5010
- 7) Only sold as G070
- 8) Removed in all pumps - does not need to be replaced

Explanations:

- ACG: Pump with DIN flanges
- UCG: Pump with ANSI flanges
- A101: Nonstandard rotation: CCW (counter clockwise)
 (CW-rotation is standard)
- A327: Pump with Tuning, size 70 only
- A385: Combination of A101+A327, size 70 only
- G011: Rotor set CCW-rotation option
- G012: Rotor set CW-rotation (std)
- G050: Shaft seal
- G053: Minor kit
- G054: Major kit consisting of: G053+G012 (G011)
- G057: Joint kit
- G070: Valve element

ACG K7/N/-pumps as replacement pumps

for old N2/N3/N4-pumps when it is essential to receive identical outer dimensions:

Valid only if the pump assembly is equipped with our aluminum connecting frame with angle bracket and our std shaft coupling type E.

As per our dimension print ACG 0452 (ACG N3x). Besides the K7/N7-pump you shall order.

	045	052	060	070
Set of intermediate plates.				
IEC 80-90, F.size F165	176412	176412	--	--
IEC 100-112, F.size F215	176420	176420	176453	176453
IEC 132, F.size F265	176438	176438	176461	176461
IEC 160 + 180, F.size F300	--	176446	176479	176479
New pump coupling for IEC motor size				
IEC 80	191640	191644	--	--
IEC 90	191641	190645	--	--
IEC 100/112	191642	191646	191649	191649
IEC 132	--	191647	191650	191650
IEC 160	--	191648	191651	191651
IEC 180	--	--	191652	191652

Please note:

When you have to replace a pump ACG N2F you have to order a new shaft coupling. The intermediate plates can not be used as the N2F pump units were equipped with our old NCA coupling and our old cast iron connecting frame. K7/N7 can replace K5/K6/N5/N6 without above extra accessories.

Ordering code

Pos No	Spare parts (set)		Part numbers for pump size			
			045	052	060	070
G011	Rotor set	K-lead CCW-rot	189641	189642	189643	189644
	"	N-lead CCW-rot	186478	186486	186494	186502
G012	Rotor set	K-lead CW-rot	187542	187559	187567	187575
	"	N-lead CW-rot	178913	179507	179515	179523
	"	D-lead CW-rot	--	--	--	194001
G050	Shaft seal	xTxx	174094	174102	174110	174128
	"	xVxx	190335	190336	190338	190340
G053	Minor kit	xTxx	191242	191244	191246	191248
	"	xVxx	191241	191243	191245	191247
G054	Major kit=G012(G011)+G053					
G057	Joint kit		191237	191238	191239	191240
G070	Valve element	xxxG/xxxP	191250	191250	191251	191251
120	Distance sleeve		173112	172908	173575	173237
122	Ball bearing		078576	077461	191181	191182
359	Distance washer		173161	172916	173542	173245
480	Valve housing	xxxP	191022	191025	191028	191031
5010	Front cover		191120	191122	191124	191126
537A	Sealing washer		010975	010975	010975	010975
S2	O-ring	xTxx	190806	190792	190807	191513
S6	O-ring	xTxx	190791	191515	191516	191517
--	Mounting sleeve		188887	188888	188889	188890

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling of the pump

G053 Minor kit

For service

G054 Major kit

For repair after damage or greater wear.

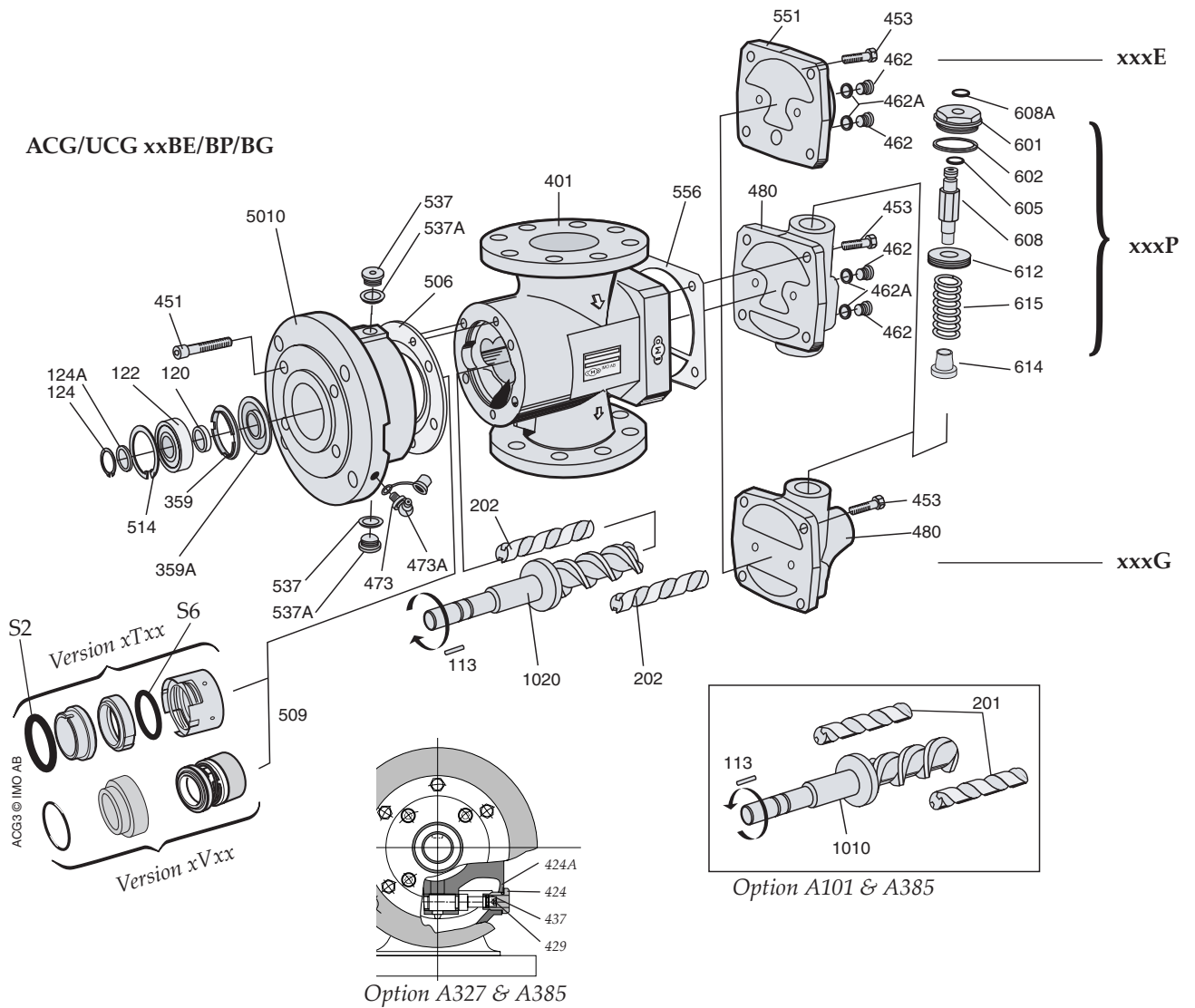
Ordering example:

For IMO-pump ACG 045N7 NVBP
serial number 456789

Shaft seal pos G050 p/n 190335

Ball bearing pos 122 p/n 078576

Exploded view



List of components

Valid for all ACG OptiLine pumps, size 045/052/060/070. Rotor lead and Generation: D8/K8/N8

With version codes: N } H } B } P }

The version code is composed of the letters in the 4 columns.

Example of pump designations std: ACG 052K8 NKBP

J}
K}
L}
M}

Pos No	Designation	Qty	Included components in Spare part sets				
			G012	G054	G057	G070	G098
002	Motor	1					
003	Connecting frame	1					
004	Angle bracket	1					
005	Magnetic coupling complete	1					x
005A	Retaining ring	1		x	x		x
005B	Sealing can	1					x
005C	Inner magnetic rotor	1					x
005D	Outer magnetic rotor	1					x
006A	Screw	4					
007A	Screw	6/8					
007B	O-ring	1		x	x		x
1020	Power rotor	1	x	x			
113	Shaft key	1	x	x			
122	Ball bearing	1		x			
124	Retaining ring	1		x	x		
124A	Support ring	1		x	x		
202	Idler rotor	2	x	x			
401	Pump body	1					
451	Screw	4/6					
453	Screw	4					
462	Plug	2					
462A	Sealing washer	2		x	x		
480	Valve housing	1					
5010	Front cover	1					
502	Plug	2					
506	Gasket	1		x	x		
514	Retaining ring	1		x	x		
556	Gasket	1		x	x		
601	Valve cover	1					x
602	Sealing washer	1		x	x		x
605	O-ring	1		x	x		x
608	Valve spindle	1					x
608A	Retaining ring	1					x
612	Regulating nut	1					x
614	Valve piston	1					x
615	Valve spring	1					x
701	Screw	4					
701A	Washer	4					
702	Screw	4					
702A	Washer	4					
703	Screw	3					
703B	Nut	3					
998	Drive hub	1					
998B	Screw	1					

Explanations:

G012: Rotor set

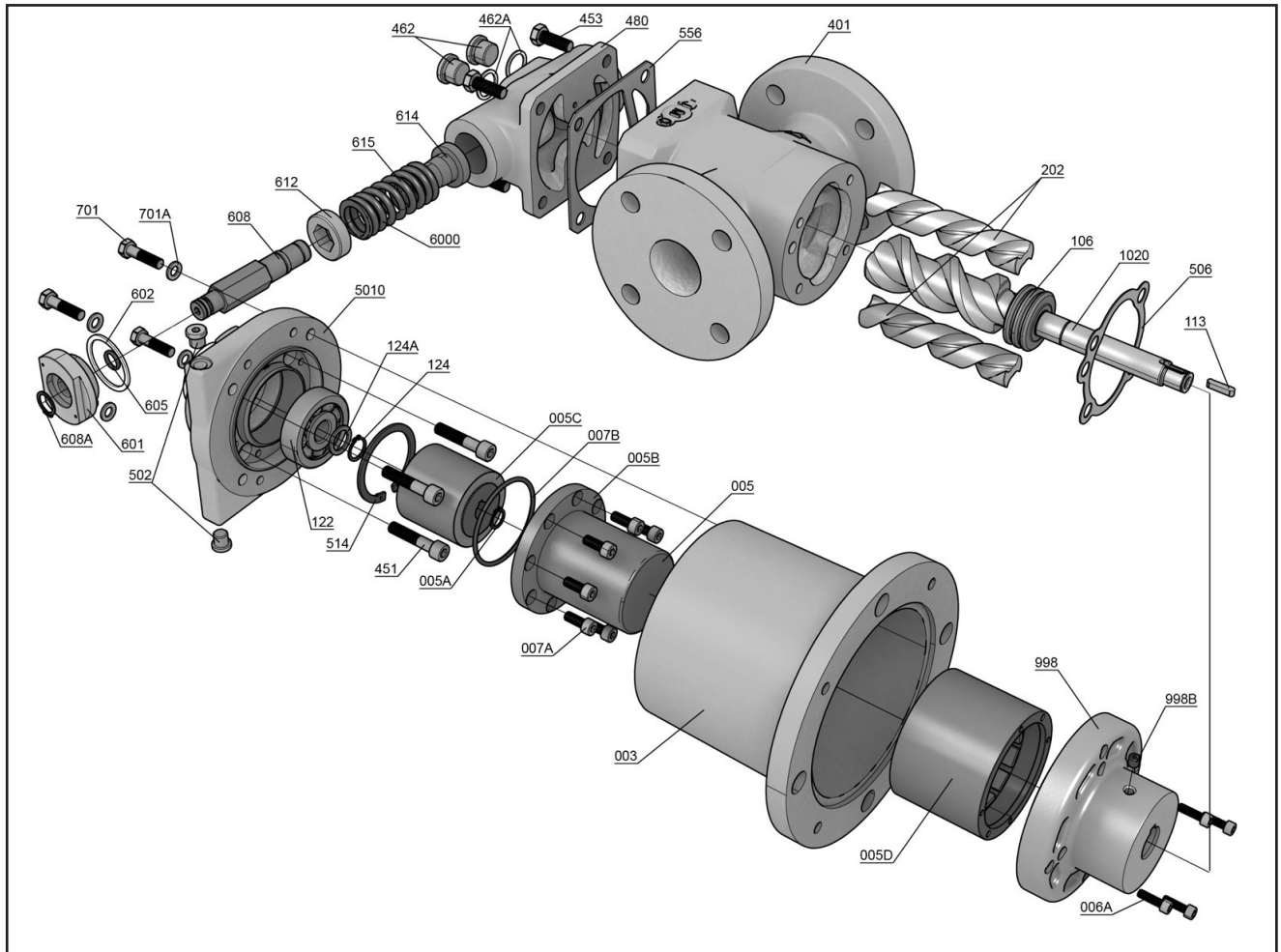
G054: G012+G057 + pos. no 122

G057: Joint kit

G070: Valve element

G098: Magnetic coupling

Exploded view



Ordering Code

Item	Spare Parts sets	Part numbers for pump size				
		045	052	060	070	
G012	Rotor set D-lead				193023	
	N-lead	193015	193017	193019	193021	
	K-lead	193016	193018	193020	193022	
G054	Major kit = G012+G057 + pos.no.122	--	--	--	--	
G057	Joint kit	193031	193032	193033	193034	
G070	Valve element	191250	191250	191251	191251	
G098	Magnetic coupling	H	193035	193035	--	--
		J	193036	193036	--	--
		K	193037	193037	193040	193043
		L	193038	193038	193041	193044
		M	193039	193039	193042	193045
122	Ball bearing	192855	192855	192827	192827	
480	Valve housing	191022	191025	191028	191031	

Recommended Spare Parts Kits and tool kits

Every shutdown for service of a plant is costly. The time for repair should therefore be limited to a minimum which can be accomplished by keeping a spare pump. The changed pump can later be repaired at a suitable place and can then be used as a spare pump. For maintenance the following spare parts kits and tools are recommended:

Kit	Contents	To be used for
G057	Gaskets, o-rings etc.	Dismantling of the pump
G012	Rotorset	Repair after major breakdown or great wear
122	Ball bearing	Repair after major breakdown or great wear
193128	Guide pins pump size 045	For dismantling and assembly of the pump
193129	Guide pins pump size 052	For dismantling and assembly of the pump
193130	Guide pins pump size 060	For dismantling and assembly of the pump
193131	Guide pins pump size 070	For dismantling and assembly of the pump

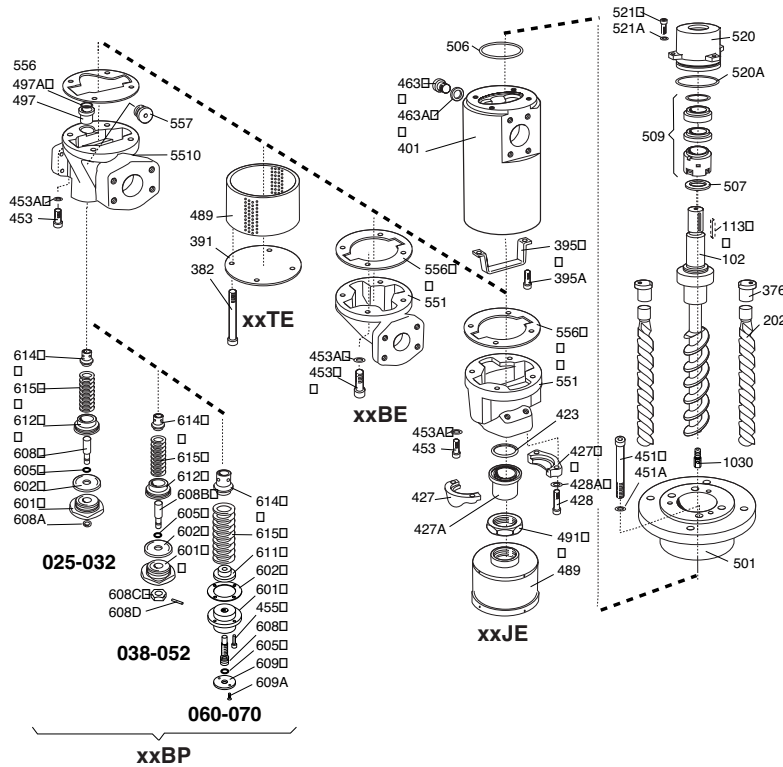
List of components

Valid for all D4 pumps, size 025/032/038/045/052/060/070. Rotor lead and Generation: K2/L2/N2

With version codes: I } R } B } E } The version code is composed of the letters in the 4 columns
L } T } J } P } Also valid for pump options A056, A070, A101, A246, A329, A396
Y } V } T } Example of pump designations std: D4 025L2 LVBE
option: D4 038K2 LVBP A101

Pos No	Denomination	Qty	G011	G012	G050	G053	G057	P.E.	Mounting form				Note
									xxBE	xxJE	xxTE	xxBP	
101	Power rotor(CCW-rot)	1	x					(x)					
102	Power rotor(CW-rot)	1		x				x					
1030	Valve	1	x	x				x					
113	Key	1	x	x				x					
122	Ball bearing	1						(x)					14
124	Retaining ring	1						x					13
124A	Support ring	1						x					13
124B	Washer	1						x					13
139	Balancing washer	1	x	x				x					13
139A	Retaining ring	1	x	x				x					13
201	Idler rotor(CCW-rot)	2	x					(x)					
202	Idler rotor(CW-rot)	2		x				x					
205	Ball bearing	2											15
2080	Cup	2											15
376	Balancing bush	2	x	x				x					
382	Screw	4									x		7
391	Plate	1									x		7
395	Support plate	1						x					
395A	Screw	2						x					
401	Pump body	1						x					
423	O-ring	1								x			10
427	Split flange	2								x			10
427A	Weld stud	1								x			10
428	Screw	4								x			10
428A	Washer	4								x			10
451	Screw	4						x					
451A	Washer	4						x					
453	Screw	4							x	x		x	9
453A	Washer	4							x	x		x	9
455	Screw	4										x	2
463	Plug	1						x					5
463A	Washer	1				x	x	x					5
489	Strainer	1								x	x		8
491	Nut	1								x			1
497	Valve seat	1										x	11
497A	O-ring	1										x	11
501	Front cover	1						x					
506	O-ring	1				x	x	x					
507	Washer	1						x					
509	Shaft seal	1			x	x		x					
520	Cover	1						x					
520A	O-ring	1				x	x	x					
521	Screw	3						x					
521A	Washer	3						x					
551,5510	Inlet chamber	1							x	x		x	9
556	Gasket	1				x	x		x	x		x	9
557	Plug	1										x	11
601	Valve cover	1										x	11
602	Washer	1										x	11
605	O-ring	1										x	11
608	Valve spindle	1										x	6
608A	Retaining ring	1										x	3

Exploded view



Please remember:
D4 032N2 LVBE A056:
Pump incl Inlet chamber
D4 032N2 LVBE G056:
Pump element only
(excl Inlet chamber)
D4 032N2 LVBE:
Pump incl Inlet chamber
D4 032N2 LVBE G102:
Pump element only
(excl Inlet chamber)

Ordering code

Pos No	Spare parts (set)	Part numbers for pump size							Note
		025	032	038	045	052	060	070	
G011	Rotor set CCW-rotation	Contact IMO AB							
G012	Rotor set K-lead CW-rot	--	--	146332	154534	186551	186577	186593	1
	L-lead CW-rot	186544	156117	--	--	--	--	--	1
	N-lead CW-rot	163410	150425	163428	166926	150433	186569	186585	1
G050	Shaft seal xRxx	128314	128314	120873	124610	124610	128728	128728	
	xTxx	168906	168906	172726	172049	172049	168914	168914	
	xTBE A329,A396	189339	189339	189340	189189	189189	189341	189341	9
	xVxx	143859	143859	190336	190338	190338	142299	142299	
G053	Minor kit = G050 + G057								
G057	Joint kit xxxE	185819	185827	185835	185843	185850	185868	185876	2
G102	Pump element (LVBx)	(LVBx)	(LVBx)	(LVBx)	(LVBx)	(IVBx)	(IVBx)	(IVBx)	
	D4 LVBE G102 K-lead CW-rot	--	--	145391	154526	188274	188945	188491	7
	D4 IVBE G102 L-lead CW-rot	146092	146621	--	--	--	--	--	7
	N-lead CW-rot	146670	144147	146639	158469	187609	178095	189104	7
	D4 LVBP G102 K-lead CW-rot	--	--	145300	146308	188733	189957	192005	7
	D4 IVBP G102 L-lead CW-rot	145524	159590	--	--	--	--	--	7
	N-lead CW-rot	152637	146001	143586	144451	188226	188949	192229	7
Pump elements for other versions (xTxx) and options (G056,G070,G101,G246,G329,G396), please contact IMO AB.									
122	Ball bearing A056/A246	106922	106922	017137	107870	017228	110429	110429	2
376	Balancing bush	130245	128272	126987	123927	124172	128660	129023	2
	A329, A396	--	186890	190544	186874	180257	188917	190866	
423	O-ring - inlet	016733	016758	016782	016816	016832	016865	016915	2
	O-ring - outlet	016733	016733	016758	016782	016816	016832	016832	2
489	Strainer xxJE	018796	019034	019323	019711	019992	117382	131961	2
	xxTE	132621	132290	131094	124115	124362	130708	131953	2
497A	O-ring	144519	144519	016691	016717	016725	016758	016758	2
556	Gasket xxxE	132605	132134	121350	124040	124297	130815	131938	2
	xxxP	139790	135988	136762	137083	137331	137539	139618	2
602	Washer xxxP	017871	017871	017889	137141	137141	137554	137554	2
605	O-ring xxxP	187922	187922	143602	088070	088070	144519	144519	2
615	Valve spring xxxP	136044	136044	136804	137133	137133	137596	137596	2
646	Gasket xxxP	135954	135954	139964	139972	139980	139998	139998	2,8

For obsolete version D4 N1/K1/L1

Pos No	Spare parts (set)	Part numbers for pump size								Note
		025	032	038	045	052	060	070		
G050	Radial seal in nitrile	108464	108464	131102	107680	107680	--	--	3	
	Shaft seal in nitrile (xRxx)	128314	128314	120873	124610	124610	128728	128728	4	
	" hard metal (xTxx)	168906	168906	172726	172049	172049	168914	168914	5	
	" in viton (xVxx)	143859	143859	190336	190338	190338	142299	142299	6	

Notes:

- 1) These rotor sets are not valid for pump options A056/G056 & A070/G070. For rotor sets for these pumps, please contact IMO. Refer also to IMO for CCW-rotor sets.
- 2) Also valid for obsolete pumps in forms N1/L1/K1.
- 3) Used for pumps D4 (F/T/V) x1 in sizes 025-052
- 4) Used for pumps D4 (F/T/V) x1 in sizes 060-070 , D4(F/T/V) x1 A072 in sizes 025-052, D4B x1 in all sizes
- 5) Used for pumps D4 (F/T/V) x1 A051 in all sizes, D4B x1 A060 in all sizes
- 6) Used for pumps D4 x1 A073 in all sizes
- 7) xx IVBE for sizes 052-070 xx IVBP for sizes 052-070
- 8) O-ring for obsolete D4 pumps with internal return. Replacement pumps with internal return have the designation A354. Please contact IMO.
- 9) For pumps xTBP A329, A396 are the standard xTxx shaft seals used.

Recommendation:

Set: To be used:

G057 Joint kit

For dismantling of the pump.

G053 Minor kit

For normal scheduled inspection.

G102 (CW) or G101 (CCW) Pump element

For repair after damage or greater wear.

Ordering example:

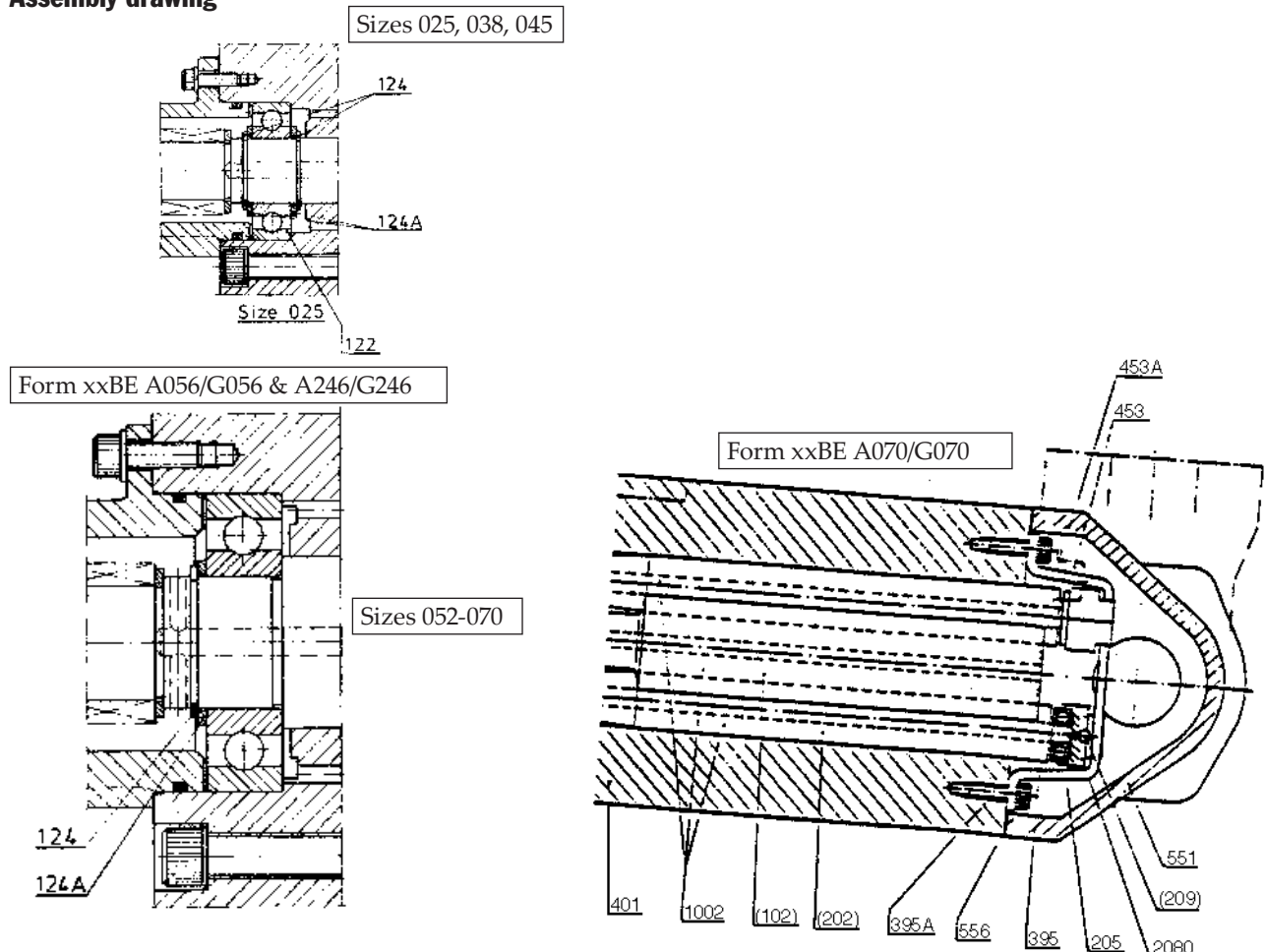
For IMO pump D4 025N2 LVBE serial no 456789:

Rotor set G012: Part no. 163410

Shaft seal G050: Part no. 143859

Pump(element)s in version 1 are obsolete. Deviating parts are the front cover item 501, rotorset G012 and in some cases also the shaft seal G050. For economical reasons, please order a new pump element in version 2 as replacement for old version 1 pumps. Please contact us if you have problems to identify which pump element you require.

Assembly drawing



List of components

Valid for all D6 pumps, size 038/045/052/060/070. Rotor lead and Generation: K3/N3

With version codes: S } R } B } Y } The version code is composed of the letters in the 4 columns

T } F } Z } Also valid for: Pump option A101, A309.

V } J } Example of pump designation std: D6 038N3 STBZ

T } option: D6 045K3 STBZ A101

Pos no	Denomination	Qty	G011	G012	G050	G053	G054	G057	G102	Note
101	Power rotor (CCW)	1	x				(x)			
102	Power rotor (CW)	1		x			x		x	
1030	Return valve	1	x	x			x		x	
113	Key	1	x	x			x		x	
120	Distance washer	1	x	x		x	x	x	x	1
122	Ball bearing	1				x	x	x	x	
123	Locking washer	1				x	x	x	x	2
124	Bearing nut	1				x	x	x	x	2
124	Retaining ring	2				x	x	x	x	1
124A	Support ring	1				x	x	x	x	1
139	Balancing ring	1	x	x			x		x	
139A	Shaft nut	1	x	x			x		x	1
139B	Washer	1	x	x			x		x	1
201	Idler rotor	2	x				(x)			
202	Idler rotor	2		x			x		x	
376	Balancing bush	2	x	x			x		x	
382	Screw	4								4
391	Plate	1								4
395	Supporting plate	1							x	
395A	Screw	1							x	
401	Pump body	1							x	
423	O-ring	1								3
427	Split flange	2								3
427A	Pipe weld	1								3
428	Screw	4								3
428A	Washer	4								3
451	Screw	6							x	
451A	Washer	6							x	
453	Screw	4							x	
453A	Washer	4							x	
463	Plug	1							x	
463A	T-ring	1				x	x	x	x	
489	Strainer	1								3, 4
491	Nut	1								3
501	Front cover	1							x	
506	O-ring	1				x	x	x	x	
507	Support ring	1							x	
507A	Locking washer	1							x	
507B	Washer	1							x	2
509	Mechanical shaft seal	1			x	x	x		x	
514	Retaining ring	1							x	1
514A	Support ring	1							x	1
520	Cover	1					x		x	
520A	O-ring	1				x	x	x	x	
521	Screw	3							x	
521A	Washer	3							x	
521B	Shims	1							x	1
523	Distance washer	1							x	
523A	Spring	2							x	
523B	Shims	2							x	2
551	Inlet chamber	1								5
556	Gasket	1				x	x	x		

Explanations:

A101: Nonstandard rotation: CCW (counter clockwise) CW-rotation is standard)

A309: 1/4" NPT thread in pos.520 for drain

G011: Rotor set CCW-rotation

G012: Rotor set CW-rotation

G050: Shaft seal

G053: G050+G057

G054: G012+G050+G057+520

G057: Joint kit

G102: Pump element CW-rotation

Notes:

1) Valid for xxxY (external bearing)

2) Valid for xxxZ (internal bearing)

3) Valid for xxJx

4) Valid for xxTx

5) Valid for xxBx

Old/Current designation

D6E 038N3 D6 038N3 SVBY

D6F 045K3 D6 045K3 SRBZ

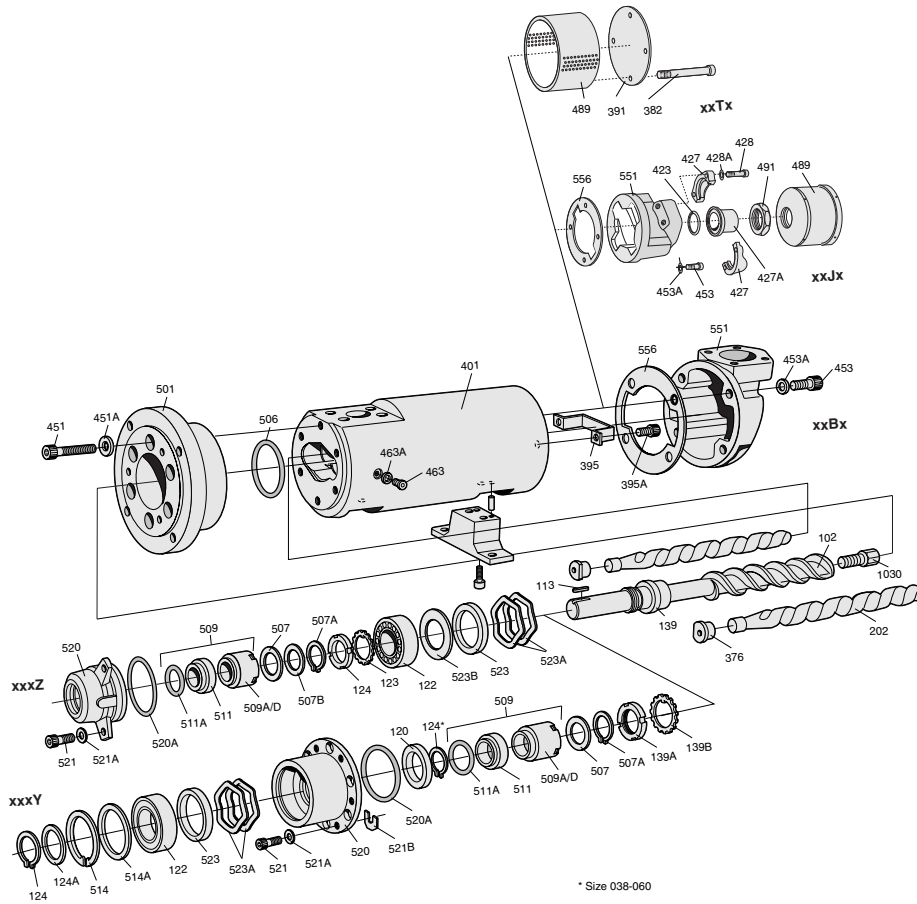
D6T 052N3 D6 052N3 SRTZ

D6H 060K3 D6 060K3 STFZ

Obsolete pumps:

Spares for obsolete pumps in versions N1 & N2, please contact IMO.

Exploded view



Ordering code

Pos No	Spare parts (set)	Part numbers for pump size					Note
		038	045	052	060	070	
G011	Rotor set CCW-rot	Contact IMO AB					
G012	Rotor set CW-rot	Contact IMO AB					
	D6 K3 xxxY K-lead	163048	163063	163089	163105	163121	
	D6 K3 xxxZ K-lead	162941	162966	162982	163006	163022	
	D6 N3 xxxY N-lead	163055	163071	163097	163113	163139	
	D6 N3 xxxZ N-lead	162958	162974	162990	163014	163030	
G050	Shaft seal xRxZ	120873	124610	134908	128728	164921	
	" xTxY				189455	192105	
	" xTxZ	172726	172049		168914	173047	
	" xVxY	159988	159855	159749	159541	159467	
	" xVxZ	190336	190338	190340	142299	168211	
G053	Minor kit = G050+G057						
G054	Major kit = G012(G011)+G050+G057+520						
G057	Joint kit xRxZ	185959	185967	185975	185983	185991	
	" xVxZ	189036	192009			189037	
	" xxxY	186007	186015	186023	186031	186049	
G102	Pump element CW-rot	Contact IMO AB					
122	Ball bearing xxxY	159996	159863	159756	017251	159459	
	" xxxZ	017194	107870	017244	110429	017269	
376	Balancing bush	158964	157701	156976	156828	156836	
506	O-Ring xRxx	016055	016071	016097	016113	016147	
	" xTxx,xVxx	016824	016840	016865	145060	016907	
520	Cover xxxY	159962	159822	159715	159525	159434	1
	" xxxZ	158923	157685	156943	156778	156539	
520A	O-ring xRxx	016071	016071	016113	016139	016154	
	" xTxx,xVxx	016840	016840	145060	117408	016915	
556	Gasket	121350	124040	124297	130815	131938	

Recommendations

Set: To be used:

G057 Joint kit

For dismantling of the pump.

G053 Minor kit

For normal scheduled inspection.

G054 Major kit, or pump element G102 (CW)

For repair after damage or greater wear.

Ordering Example:

For IMO-pump D6 038N3 STBZ
serial no: 234567
Rotor set G012
Part no 162958
Shaft seal G050
Part no 172726

Notes:

1) Not valid for A309

List of components

Valid for all E4 pumps, size 025/032/038/045/052/060/070. Rotor lead and Generation: K1/L1/N1/K4/L4/N4
 With version codes: L } E } B } E } The version code is composed of the letters in the 4 columns
 Y } R } J } Also valid for pump options A101, A141, A291, A337, A406
 V } T } Example of pump designations std: E4 025L1 LRBE
 option: E4052N4 YVJE A141

Pos No	Denomination	Qty	Spare parts set:						Mounting form			Note
			G031 Bearing element	G050 Radial seal	G055 Joint kit	G101 Pump element	G102 Pump element	xxBE inlet	xxJE chamber	xxTE G065		
101	Power rotor CCW-rot	1				x						
102	Power rotor CW-rot	1						x				1
1030	Return valve	1				x	x					
113	Key	1				x	x					
122	Ball bearing	1	x			x	x					
124	Retaining ring	1	x			x	x					
124A	Support washer	1	x			x	x					
201	Idler rotor CCW-rot	2				x						
202	Idler rotor CW-rot	2						x				1
382	Screw	4									x	
401	Pump body	1				x	x		x			
423	O-ring	1										5
427	Split flange	2							x			5
427A	Weld stud	1							x			5
428	Screw	4							x			5
428A	Washer	4							x			5
451	Screw	4										
451A	Washer	4										
453	Screw	2/4							x	x		3
453A	Washer	4							x	x		7
455	Screw	2							x			4
463	Plug	1				x	x					
463A	T-ring	1										
489	Strainer	1							x	x		8, 9
489A	Distance ring	1								x		2
491	Nut	1/2							x			6
501	Connecting frame	1										
506	Gasket	1			x							
509	Radial seal	1		x								
514	Retaining ring	1	x			x	x					
551	Inlet chamber	1				x	x	x				7
556	Gasket	1			x			x	x			7

E4 pumps consist of:
a pump element Gxxx + a inlet chamber G065 xx.

Notes:

1. CCW-rotation version pos no 101, 201
2. Valid for xxTE sizes 045
3. Valid for xxBE: 2 pieces and xxJE 4 pieces
4. Valid for xxBE
5. Valid for xxJE sizes 052-070
6. Valid for xxJE sizes 025-045: 2 pieces and sizes 052-060: 1 piece.
7. Valid for xxJE and xxBE
8. Valid for xxTE and xxJE
9. Excluded in pump option A406

Old/Current designations:

E4F 025N1	E4 025N1 LEBE
E4T 032L1	E4 032L1 LETE
E4V 038N1	E4 038N1 LEJE
E4F 045K1 A149	E4 045K1 YEBE
incl conn.frame	xRxx

Note: The radial seal is included in the conn.frame/front cover and not in the pump itself.
Therefore the pump element has the designation "E" in material code xExx.

Explanations:

Pump accessories
 A101: Nonstandard rotation: CCW (counterclockwise) CW-rotation is standard)
 A141: Pump with special flange (front cover) to replace ALA and B4 pumps.
 A291: Pump with tapered power rotor. Reduced flow
 A337: Combination of A101 + A141
 A406: Pump without xxJx-strainer

E4 Medium pressure pump



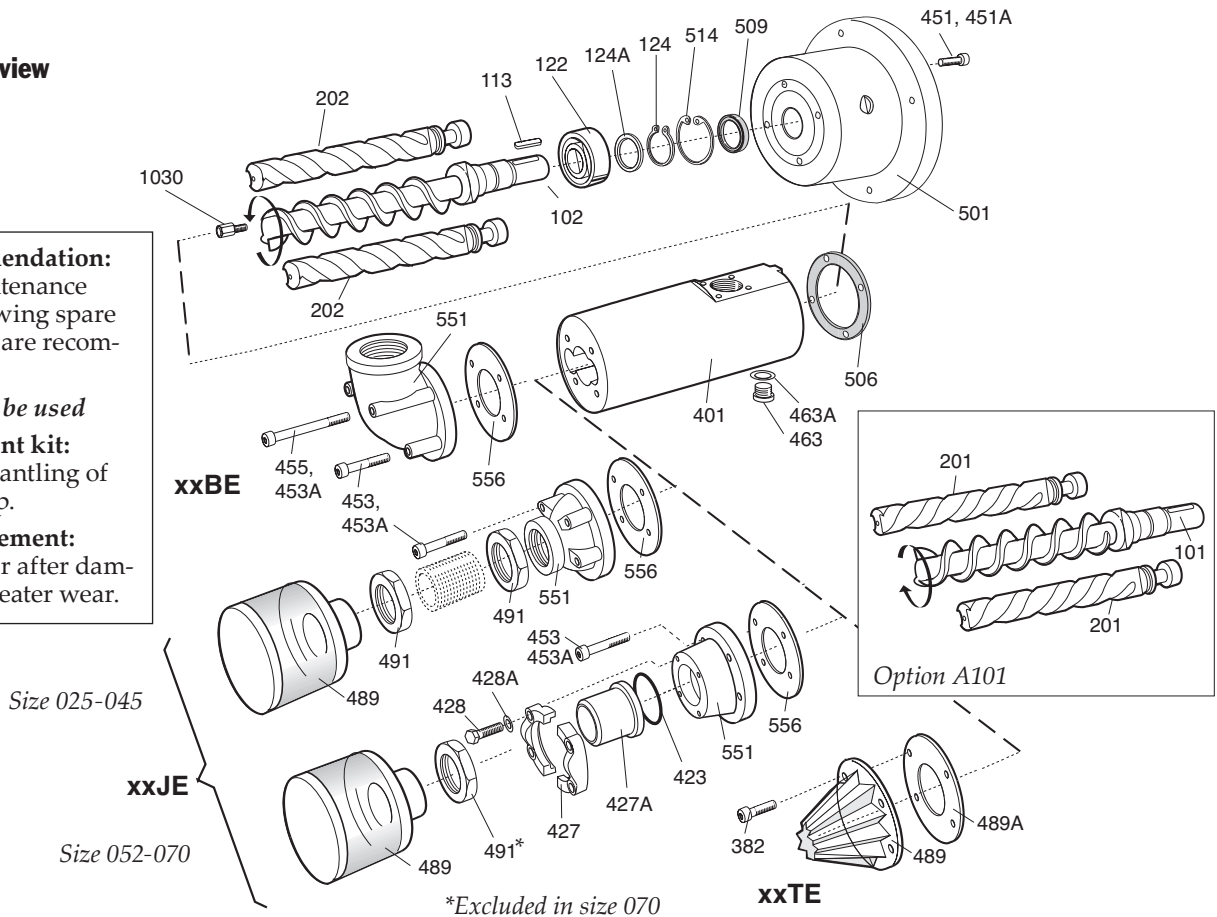
Spare parts book
September 2016

Exploded view

Recommendation:
For maintenance the following spare part sets are recommended

Set To be used
G055 Joint kit:
For dismantling of the pump.

Pump element:
For repair after damage or greater wear.



Ordering code

Pos No	Spare parts (set)	Part numbers for pump size							Note	
		025	032	038	045	052	060	070		
G031	Bearing element	144170	144170	144188	144188	144188	144196	144204		
G050	Radial seal	xRxx	128009	128009	107680	107680	107680	107680	107680	
	"	xVxx	188840	188840	173690	173690	173690	173690	173690	
G055	Joint kit	144212	144212	144212	144220	144238	144246	144253		
G102	Pump element CW-rot.									
	E4 z1 LEBE G102 K-lead	--	--	140533	140558	140574	141069	141085	3	
	"	L-lead	140491	140517	--	--	--	--	3	
	"	N-lead	140483	140509	140525	140541	140566	141051	141077	3
1030	Return valve	145607	145607	145615	145623	145623	145623	145623		
122	Ball bearing	017103	017103	126581	126581	126581	017137	017194		
124	Retaining ring	026963	026963	026997	026997	026997	026997	026997		
124A	Support washer	136879	136879	105700	105700	105700	105700	105700		
423	O-ring - inlet	K1, N1	--	--	--	--	016832	016865	016915	
	"	- outlet	--	--	--	--	016832	016832		
	"	- inlet	K4,L4,N4	016758	016758	016782	016782	016832	--	
	"	- outlet	--	016733	016733	016733	016758	016782	--	
463A	Washer - T-ring	017848	017848	017848	017848	017848	017848	017848		
489	Strainer	xxJx	018796	019034	019323	019711	019992	117382	131961	4
	"	xxTx	126383	126383	126383	126383	127571	132852	129072	
506	Gasket	130476	130476	130476	130476	130609	130609	130609		
514	Retaining ring	077495	077495	027177	027177	027177	027193	027219		
556	Gasket	140004	140004	140004	140012	140020	140921	140939		
Pump connections E4 z1/z4										
z1:	inlet connection	1	1	1	1	2	2	2		
"	outlet connection	1	1	1	1	1	2	2		
z4	inlet connection	2	2	2	2	2				
"	outlet connection	2	2	2	2	2				

Notes: 1) BSP-threaded connection 2) SAE welded connection 3) Pump elements intended for pumps E4 K1/L1/N1 in forms LEBE, LRBE, LVBE, LEJE, LRJE, LVJE, LETE, LRTE, LVTE. These pump elements can also be used with above forms with pump option A141. Pump elements for other versions (z4 and Yxxx) and options (A101, A291 & A337), please contact IMO. 4) Excluded in A406

List of components

Valid for all LPD pumps, size 015/020. Rotor lead and Generation: N1

With version codes: I } V } B } P }

The version code is composed of the letters in the 4 columns.
Also valid for pump options A373 & A394.

Example of pump designations std: LPD 020 N1 IVBP

Pos No	Part Denomination	Qty	Spare parts set:					Note
			G011 Rotor set	G050 Shaft seal	G053 Minor kit	G057 Joint kit	G070 Valve element	
1010	Power rotor	1	x					
134	Locking screw	1	x		x	x		1
162	Shaft sleeve	1	x		x	x		1
201	Idler rotor	2	x					
401	Pump body	1						
453	Screw	4						
509	Mechanical seal	1		x	x			
514	Retaining ring	1						
520	Front cover	1						
521	O-ring	1			x	x		
551	Rear cover	1						
556	Gasket	1			x	x		
605	O-ring	1			x	x	x	
608	Valve set screw	1					x	
608A	Locking clamp	1					x	
608B	Screw	2					x	
608C	Pin	1					x	
6120	Regulating nut	1					x	
(613)	Tension pin	1					x	
614	Valve piston	1					x	
615	Spring	1					x	
622	Screw	2						
623	Plate	1						

Note: 1) Included in 1010

When ordering spare parts, please state the complete pump identification according to its name plate and required spare part set or the required parts position number.

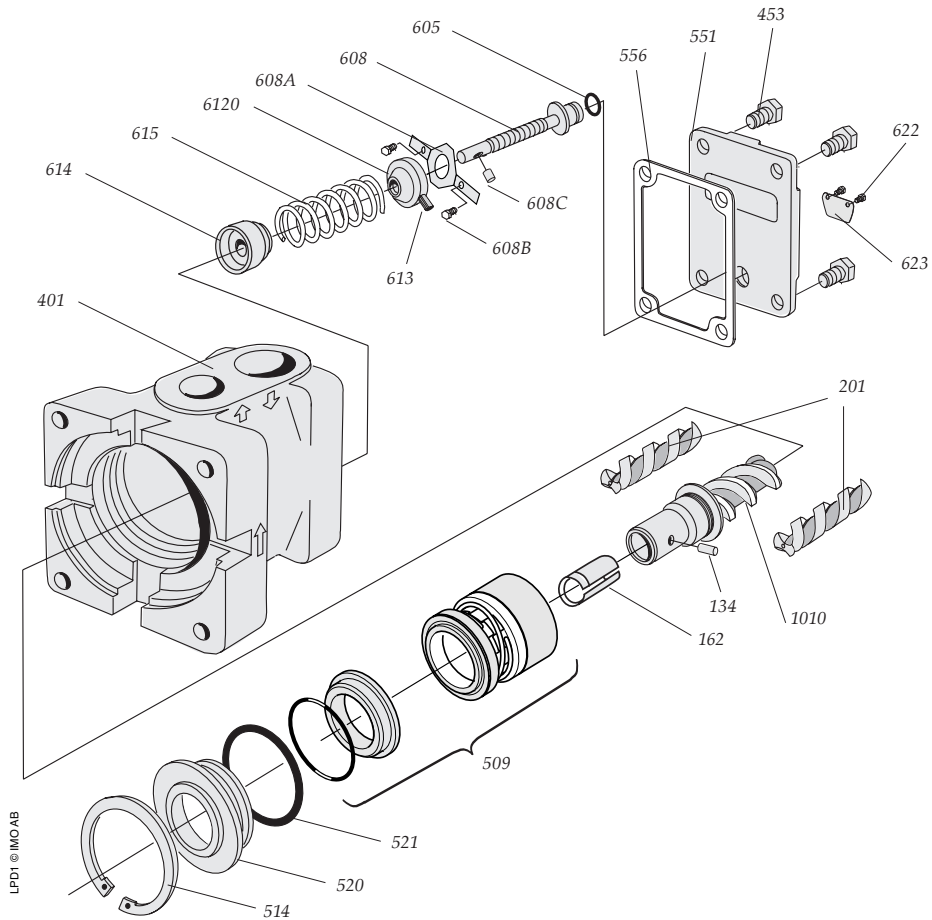
Explanations:

A373: Pump with adjustable valve without valve spring for ekmotor IEC 63 with F115 frame

A394: Pump with adjustable valve without valve spring for elmotor IEC 63 with F130 frame

Exploded view

LPD



Ordering code

Pos No	Spare parts (set)	p/n for pump size		Note
		015	020	
Pump	LPD xxxN1 IVBP	190443	190437	
	LPD 015N1 IVBP A373	189947	--	
	LPD 015N1 IVBP A394	190788	--	
G011	Rotor set ccw-rotation	190767	190768	1
G050	Shaft seal	190334	190334	
G053	Minor kit	190783	190783	
G057	Joint kit	190740	190740	
	" A373, A394	190741	--	
G070	Valve element	190743	190743	
	" A373, A394	190993	--	
162	Shaft sleeve	034652	034652	2
	" A373, A394	189411	--	3

Recommendation:
For maintenance the following spare part sets are recommended:
Set: To be used:
G057 Joint kit
For dismantling of the pump.
G053 Minor kit
For service
Major kit = pump
For repair after damage or greater wear.

Note:

- 1) Not valid for pumps A373, A394
- 2) For IEC71 motor
- 3) For IEC63 motor

Ordering example:

For IMO-pump LPD 020N1 IVBP
serial number 456789
Shaft seal pos G050 p/n 190334

List of components

Valid for all LPE pumps, size 025/032/038. Rotor lead and Generation: D3/K3/L3/N3

With version codes: N} V} B} P} The version code is composed of the letters in the 4 columns.
T} Y} Example of pump designations std: LPE 025L3 NTBP;
option: LPE 038N3 NVBP

PosNo	Designation	Qty	Components included in spare parts set					Notes
			G012	G050	G053	G054	G057	
1020	Power rotor	1	x			x		
113	Key	1	x			x		
122	Ball bearing	1	x		x	x		
125	Secondary seal	1		x	x	x		1
202	Idler rotor	2	x			x		
351	Balancing bush	1	x			x		
401	Pump body	1						
416	Suction flange	1						
417	Screw	8						
418	Gasket to suction flange	1			x	x	x	
423	Gasket to discharge flange	1			x	x	x	
427	Discharge flange	1						
440	Return valve	1						2
451	Screw	4						
453	Screw	4						
462	Plug	1						
462A	Sealing washer	1			x	x	x	
463	Plug	1						
463A	Sealing washer	1			x	x	x	
501	Front cover	1						
506	Gasket	1			x	x	x	
509	Shaft seal	1		x	x	x		
537	Deaeration plug	2						
537A	Washer	2			x	x	x	
551	Rear cover	1						
556	Gasket	1			x	x	x	
557	Plug	1						
557A	Washer	1			x	x	x	
605	O-ring	1			x	x	x	x
608	Valve spindle	1				x		x
608A	Tension pin	1				x		x
6120	Set screw	1				x		x
613	Pin	1				x		x
614	Valve piston	1				x		x
615	Valve spring	1				x		x
(*)	Plug	1			x	x	x	
(*)	Washer	1			x	x	x	

Explanations:

G012: Rotor set
G050: Shaft seal
G053: Minor kit
G054: Major kit
G057: Joint kit
G070: Valve element

Notes:

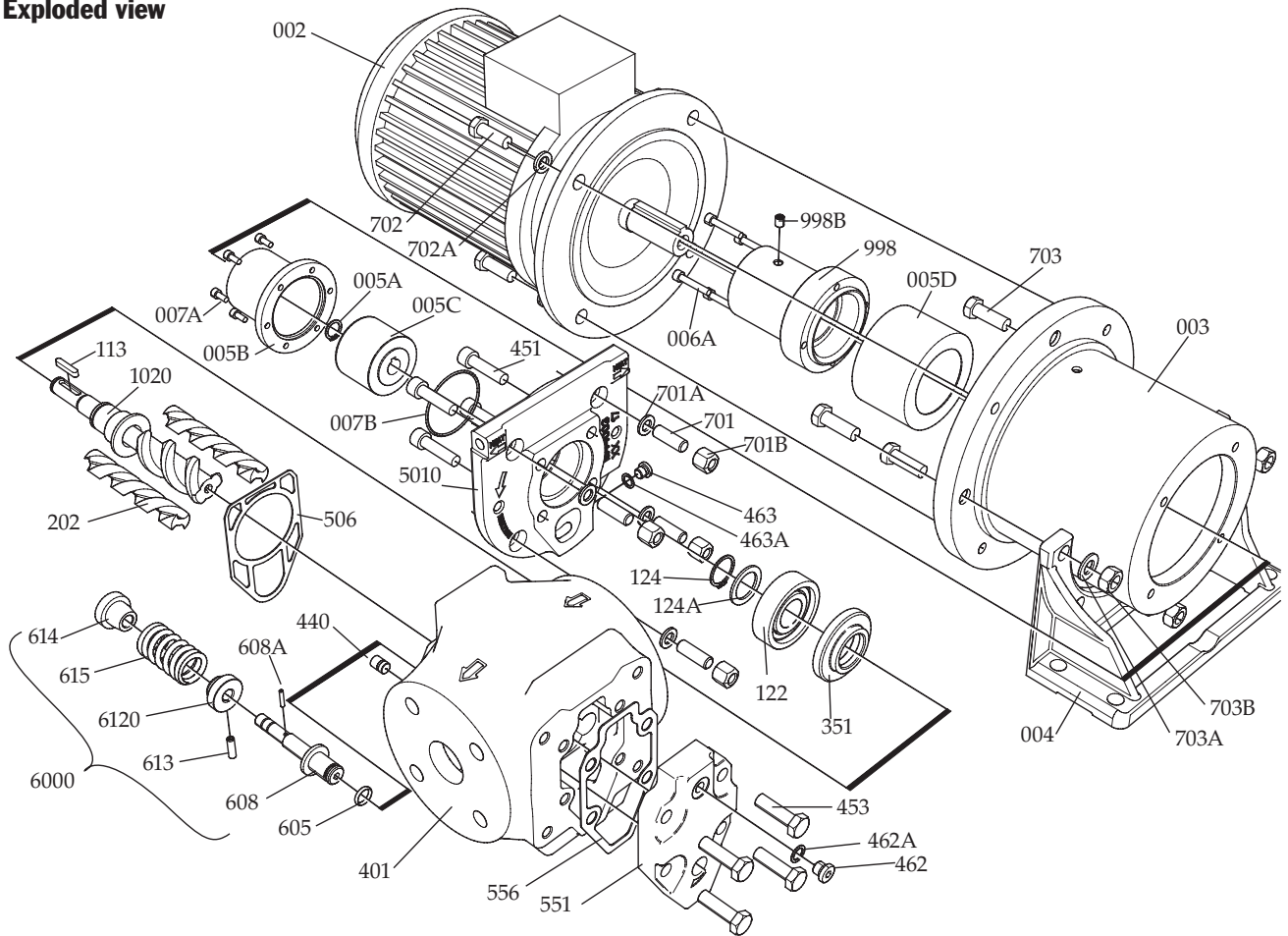
- 1) Version NTxP
- 2) Removed from August 2011

List of components

Valid for all LPE OptiLine pumps, size 025/032/038. Rotor lead and Generation: D4/K4/L4/N4
With version codes, NJBP, NKBP, NLBP & NMBP.

PosNo	Designation	Qty	G012	G054	G057	G070	G098	Notes	Explanations
002	Motor	1							G012: Rotorset
003	Connecting frame	1							G054: Major kit
004	Angle bracket	1							G057: Joint kit
005	Magnetic coupling complete	1					x		G070: Complete valve
005A	Retaining ring	1		x	x		x		G098: Complete magnetic coupling
005B	Sealing can	1					x		
005C	Inner magnetic rotor	1					x		
005D	Outer magnetic rotor	1					x		
006A	Screw	4							Notes:
007A	Screw	6							1) Gaskets for counter flanges
007B	O-ring	1		x	x		x		2) Not sold separately
1020	Power rotor	1	x	x					
112	Balancing piston	1	x	x				2	
113	Shaft key	1	x	x					
122	Ball bearing	1	x	x					
124	Retaining ring	1	x	x	x				
124A	Support ring	1	x	x	x				
202	Idler rotor	2	x	x					
351	Balancing bush	1	x	x					
401	Pump body	1							
418	Gasket	1		x	x			1	
423	Gasket	1		x	x			1	
451	Screw	4							
453	Screw	4							
462	Plug	1							
462A	Sealing washer	1		x	x				
463	Plug	1							
463A	Washer	1		x	x				
5010	Front cover	1							
502	Plug	2							
506	Gasket	1		x	x				
551	Rear cover	1							
556	Gasket	1		x	x				
6000	Compl. Valve	1				x			
(605)	O-ring	1		x	x	x			
(608)	Valve spindle	1				x		2	
(608A)	Tension pin	1				x		2	
6120	Set screw	1				x		2	
(613)	Tension pin	1				x		2	
(614)	Valve piston	1				x		2	
(615)	Valve spring	1				x		2	
701	Screw	4							
701A	Washer	4							
702	Screw	4							
702A	Washer	4							
703	Screw	3							
703A	Washer	3							
998	Drive hub	1							
998B	Screw	1							
998A	Washer	1							
998B	Screw	1							

Exploded view



Ordering code

Pos No	Spare Part (set)	Part numbers for pump size		
		025	032	038
G012	Rotor set	D-lead		193362
	"	K-lead		193360
	"	L-lead	193356	193358
	"	N-lead	193357	193359
G054	Major kit	D-lead		193369
	"	K-lead		193367
	"	L-lead	193363	193365
	"	N-lead	193364	193366
G057	Joint kit		193374	193375
G070	Valve element	189873	189873	189873
G098	Magnetic coupling	xKxx	193370	193370
	"	xLxx	193371	193371
	"	xMxx		193372
	"	xNxx		193373
122	Ball bearing	173765	173765	173591

Recommended Spare Parts Kits and tool kits

Every shutdown for service of a plant is costly. The time for repair should therefore be limited to a minimum which can be accomplished by keeping a spare pump. The changed pump can later be repaired at a suitable place and can then be used as a spare pump. For maintenance the following spare parts kits and tools are recommended:

Kit:	Content:	To be used for:
G057	Gaskets & o-rings	Dismantling of pump
G012	Rotor set	Repair after break down
122	Ball bearing	Repair after break down

List of components

Valid for all LPQ pumps, size 100/110/125/140. Rotor lead and Generation: J1/L1/N1/P1

With version codes: I } R } Y } P }
N } T }

Also valid for pump options A020, A382

Example of pump designations: LPQ 100N1 IRYP

Pos No	Denomination	Qty	Components included in Spare parts sets:					Note	
			G012	G050	G053	G057	G070		G090
1020	Power rotor	1	x					x	
113	Key	1	x						x
122	Ball bearing	1			x				x
123	Locking washer	1			x				x
124	Bearing nut	1			x				x
202	Idler rotor	2	x						x
301	Sleeve	1							x
302	Sleeve	1							x
306	Plug	1							x
308	Guide pin	2							x
314	Screw	1							x
314A	Washer	1							x
361	Screw	4							x
361A	Washer	4							x
362	Transport locking washer	1							x
401	Pump body	1							
425	Screw	4							
427	Tuning cover	2							
429	Spindle	2							
430	Tuning piston	2							x
437	O-ring	2			x	x			
437A	Washer	4							
437B	Cup spring	8							
451	Screw	8							
453	Screw	12							
453A	Washer	12							
455	Screw	3							
455A	Washer	3							
462	Plug	2							
462A	T-ring	2							
463	Drain plug	1							
463A	T-ring	1							
501	Top cover	1							
506	O-ring	1			x	x			
509	Shaft seal	1		x	x				x
520	Seal cover	1							
520A	O-ring	1			x	x			
521	Screw	8							
521A	Washer	8							
537	Deaeration plug	1							
537A	T-ring	1			x	x			
540	Ball	1							
541	Spring	1							
551	Foot	1							
556	O-ring	1							
601	Valve cover	1							x
602	O-ring	1			x	x	x		
605	O-ring	1			x	x	x		
608	Valve spindle	1							x
608A	Support ring	1							x
608B	Retaining ring	1							x
611	Washer	1							x
611A	Washer	1							x
6120	Regulating nut	1							x
613	Pin	1							x
614	Valve piston	1							x
615	Valve spring	1							x
636	Damping bushing	1							x
657	Spring	1							x
658	Distance sleeve	1							x
659	Locking nut	1							x
659A	Support ring	1							x

Explanations:

A020: Surface-treated cast iron pump bodies.

A382: Pump for orimulsion with special ball bearing and hard metal shaft seal

G012: Rotor set CW-rotation (std)

G050: Shaft seal

G053: Minor kit

G057: Joint kit

G070: Valve element

G090: Pump element

Recommendation:

For maintenance the following spare part sets are recommended

Set To be used

G057 Joint kit

For dismantling

G053 Minor kit

For service

G090 Pump element

For repair after damage or greater wear

Ordering example:

For IMO-pump LPQ 125N1 IRYP

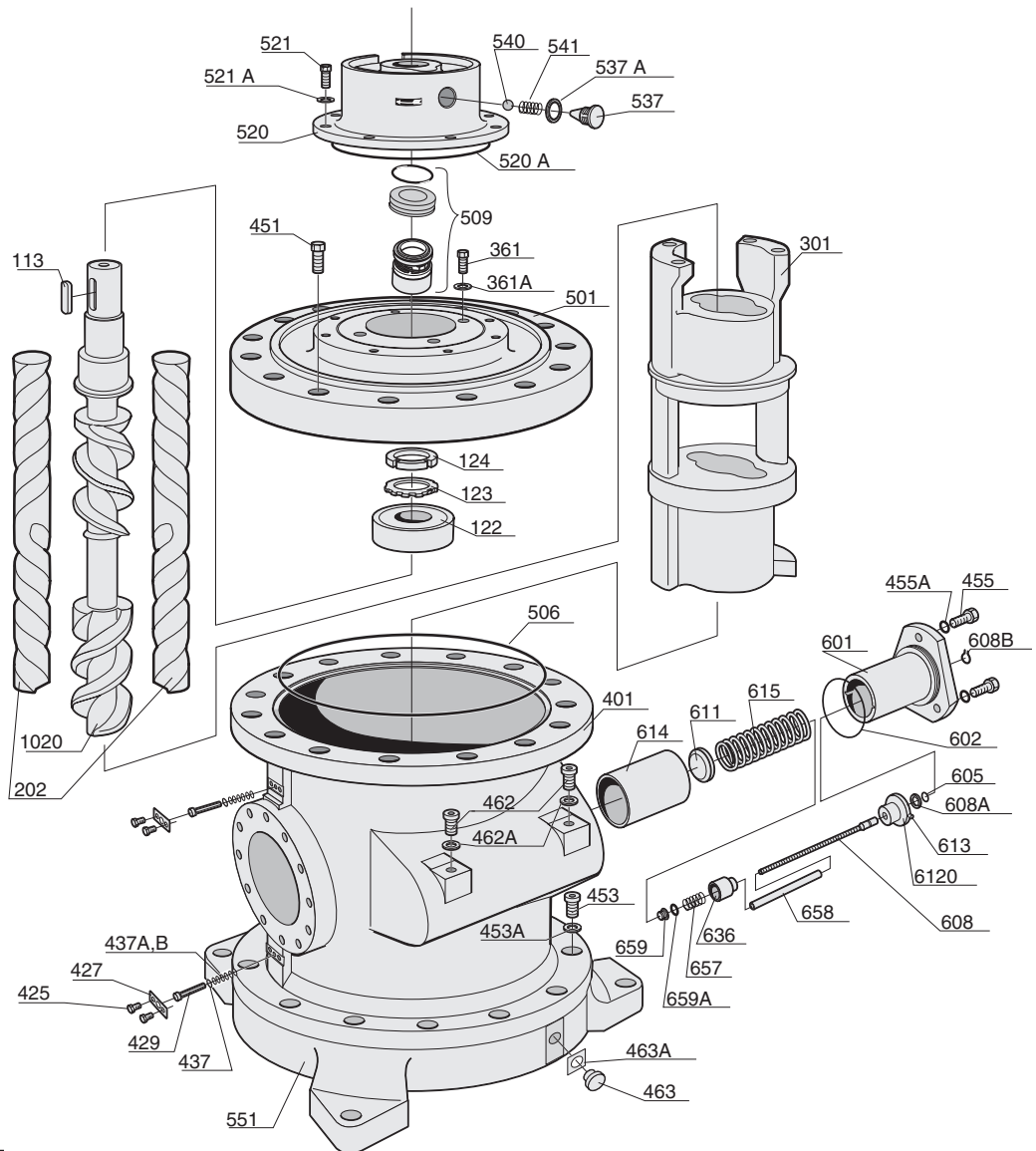
serial number 234567

Joint kit G057 p/n 189848

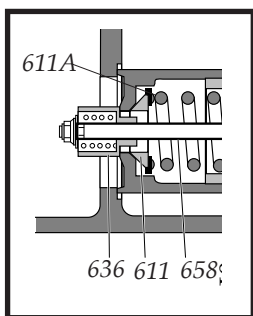
Notes:

- 1) Only for size 140 (See sectional view)
- 2) Valid for size 100-125
- 3) Not valid for A020
- 4) Not valid for A382
- 5) Included in G090 only

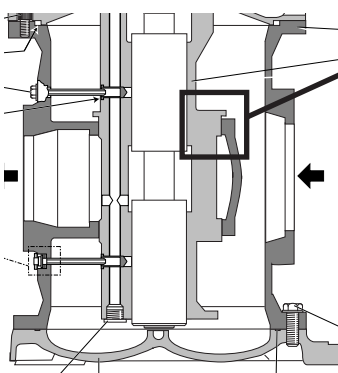
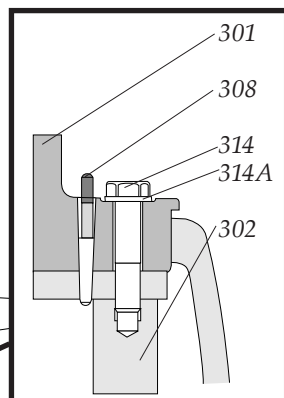
Exploded view
size 100-125



Differences in size 140



Valve element parts



Ordering code

Pos No	Spare parts (set)	Part numbers for pump size				Note		
		100	110	125	140			
G012	Rotor set	J-lead	--	--	189852	--	3	
	"	L-lead	--	188768	188815	--	3	
	"	N-lead	188813	188814	188816	189748	3	
	"	P-lead	--	--	--	189844	3	
G050	Complete shaft seal	xRxx	188530	188530	188530	188530	4	
	"	xTxx	189332	189332	189332	189332		
G053	Minor kit	xTxx	193143	193143	193143	--	4	
	"	xRxx	189850	189850	189850	189851		
G057	Joint kit		189848	189848	189848	189849		
G070	Valve element		188808	188808	188808	189847		
G090	Pump element	J-lead	xRxx	--	--	189853	--	3,4
	"	L-lead	xRxx	--	188769	188811	--	3,4
	"	N-lead	xRxx	188809	188810	188812	189845	3,4
	"	P-lead	xRxx	--	--	--	189846	3,4
122	Ball bearing		188512	188512	188512	188512		
	"	A382	190256	190256	190256	190256		
556	O-ring		188517	188517	188517	188517		
615	Valve spring		022160	022160	022160	022269		

Valve identification



Valve name	Size	Generation	Valve spring pressure	Valid for option	Comments
GAR	012 034 100 112	01	T008 T040 T075 T100	A078 A308 A313	Threaded pipe connection
GAS	015 020 025 040				SAE flanged pipe connection
GAD	065				DIN flanged pipe connection

List of components

Pos No	Denomination	Qty	GAD	GAR	GAS	Note
212	Retaining ring	1	x			
213	Retaining ring	1	x			
423	O-ring	2				1
427	Split flange	4				1
427A	Pipe weld	2				1
428	Screw	8				1
428A	Washer	8				1
451	Screw	4/8	x	x	x	
4800	Valve housing	1	x	x	x	
497	Valve seat	1	x			
497A	Nut	1	x			
497B	Tension pin	1	x			
497C	Pin	1	x			
537	Deaeration plug	1	x	x	x	
537A	Sealing washer	1	x	x	x	
601	Valve cover	1	x	x	x	
601A	Threading adapter	1		x	x	2
602	O-ring	1	x	x	x	
605	O-ring	1	x	x	x	
608	Set screw	1	x	x	x	
609	Stop washer	1		x	x	
609	Nut	1	x			
609A	Screw	2		x	x	
611	Set screw washer	1		x	x	
612	Spring washer	1		x	x	
612A	Spring washer	1	x			
612B	Sleeve	1	x			
612C	Spring washer	1	x			
614	Valve piston	1	x	x	x	
615	Valve spring	1		x	x	4
	-"		x			3
617	Pilot valve	1	x	x	x	
618	Auxiliary spring	1	x	x	x	
623	Stop washer	1	x			5
625	Valve sleeve	1	x	x	x	
626	Cap	1	x	x	x	
626A	Screw	2		x	x	
627	Bonded washer	1	x			
646	O-ring	1	x	x	x	
647	Throttle screw	1	x	x	x	
648	Tension pin	1	x			
658	Distance sleeve	1	x			

Notes:

- 1) Accessories (SAE counter flange) for GAS valves
- 2) Included in valves GAR 100 and 112, GAS 025 and 040
- 3) See assembly drawing on page 65
- 4) Valid for all GAR and GAS versions
- 5) Valid for GAD T008

Old designations **Current designations:**
GAx...../U GAx xxx01 Txxx A313

Obsolete valves:

GAD S6A (valve with hand wheel)
GAD S6B (valve with cap)

Cross reference list:

Old obsolete GAD valve	Today's corre- sponding valve
-----------------------------------	--

GAD 1/2" S6A/S6B	GAR 012
GAD 3/4"	GAR 034
GAD 1"	GAR 100
GAD 1 1/2"	GAR 112
GAD 25	GAS 025
GAD 40	GAS 040
GAD 60	GAD 065

Valve spring option:

Old designation	New designation
615W	T008 (range 2-8 bar)
615A	T040 (range 6-40 bar)
(blank)	T075 (range 15-75 bar)
615C	T100 (range 30-100 bar)

Please keep in mind that the GAR/GAS valves have deviating outer dimension compared with the old GAD valves.

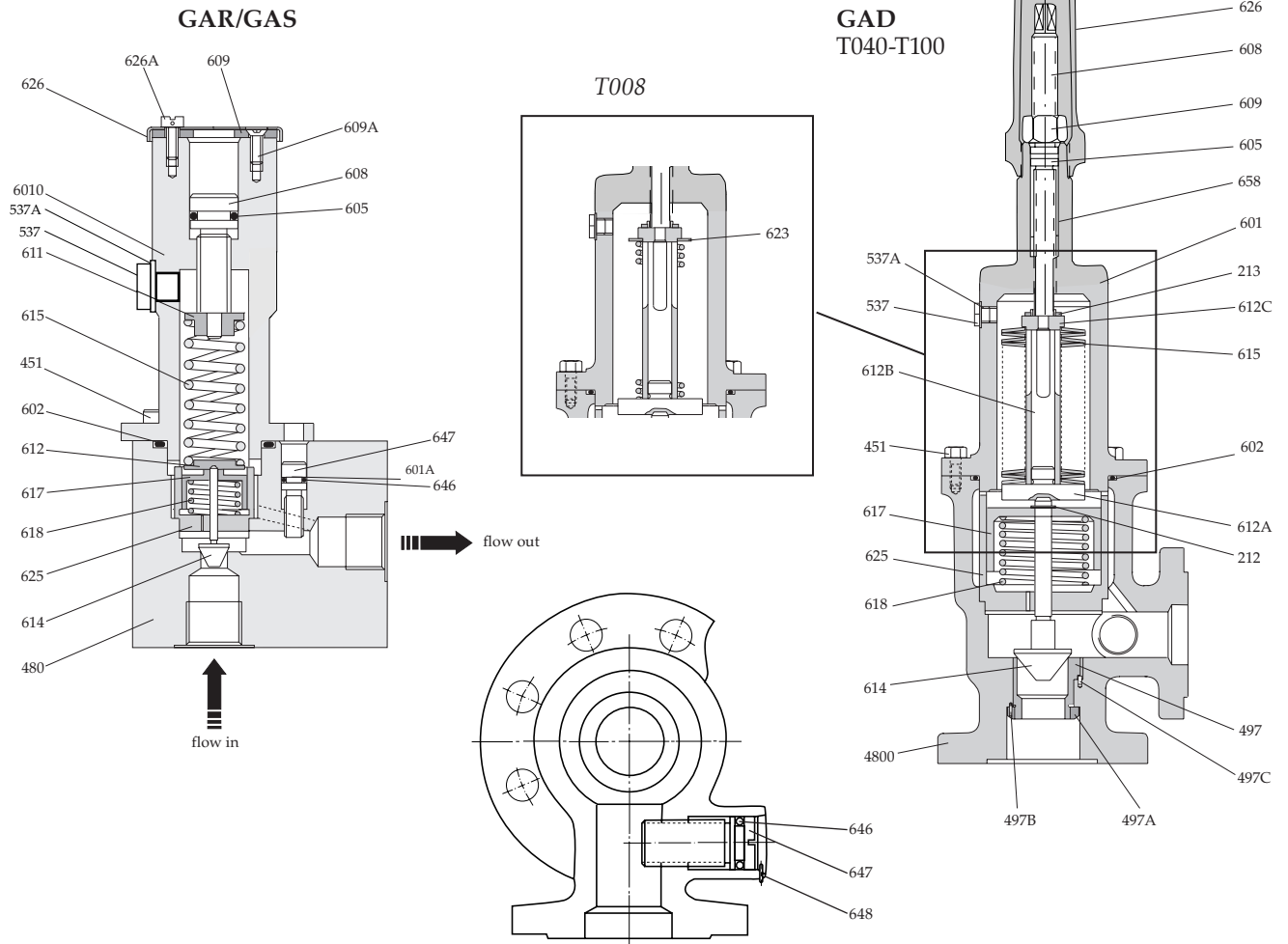
Ordering code

Pos No	Spare part sets	Part numbers for valve size					Note	
		GAR 012	GAR 034	GAR 100	GAR 112	GAD 065		
	Complete Valve	GAR xxx01 T008	135244	134049	134346	134973	--	
	"	GAR xxx01 T040	135236	134031	134338	134965	--	
	"	GAR xxx01 T075	135228	134023	134320	134957	--	
	"	GAR xxx01 T100	149112	141192	145201	153924	--	
			GAS 015	GAS 020	GAS 025	GAS 040		
	"	GAS xxx01 T008	136085	136119	136143	136176	--	
	"	GAS xxx01 T040	136077	136101	136135	136168	--	
	"	GAS xxx01 T075	136069	136093	136127	136150	--	
	"	GAS xxx01 T100	189495	145409	143867	144394	--	
	"	GAD 06501 T008	--	--	--	--	132928	
	"	GAD 06501 T040	--	--	--	--	132902	
	"	GAD 06501 T075	--	--	--	--	132894	
	"	GAD 06501 T100	--	--	--	--	132910	
423	O-ring	in viton	152447	016717	016733	016782	--	8
	"	in nitrile A078	015917	015941	015966	016014	--	
602	O-ring	in viton	016741	016766	016790	016857	016956	8
	"	in nitrile A078		015990	016022	016089	016394	
605	O-ring	in viton	016675	016675	016675	144519	152447	8
	"	in nitrile A078	015826	015826	015826	134304	015917	
614	Valve piston		052506	052654	052829	053017	053199	6
615	Valve spring	T008	022426	022533	022590	022665	095240	6
	"	T040	022400	022517	022574	022640	022699	6
	"	T075	022392	022491	022558	022624	022681	6
	"	T100	022418	022525	022582	022657	022681	6
617	Pilot valve		052514	052662	052837	053025	053207	6,7
618	Spring T040/075/100		022442	022509	022566	022632	022715	6
	"	T008	022459	022541	022608	022673	022723	6
625	Valve sleeve		052522	052670	052845	053033	053215	6
627	Bonded washer		--	--	--	--	017889	
646	O-ring	in viton	146076	146076	088062	144519	016725	8
	"	in nitrile A078	134114	134114	015800	134304	015958	

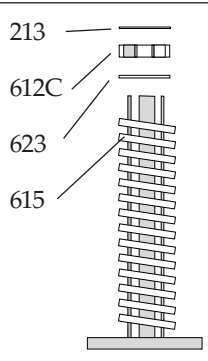
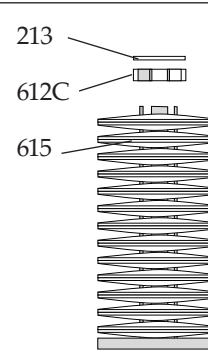
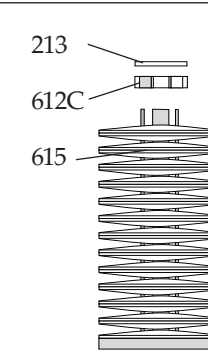
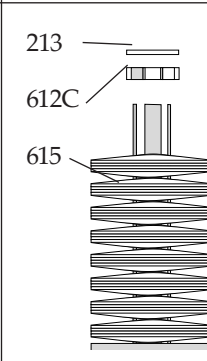
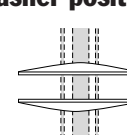
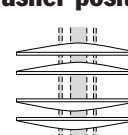
Notes:

- 6) Also valid for obsolete models GAD S6A/S6B
- 7) Not valid for A313
- 8) Not valid for A078

Assembly drawing



GAD spring 615 – Assembly drawings

T008	T040	T075	T100
1 Valve spring	26 Washers	25 Washers	32 Washers
 <p>213 612C 623 615</p>	 <p>213 612C 615</p>	 <p>213 612C 615</p>	 <p>213 612C 615</p>
	Washer positions		Washer positions
			
Range: 2-8 bar	Range: 6-40 bar	Range: 15-75 bar	Range: 30-100 bar

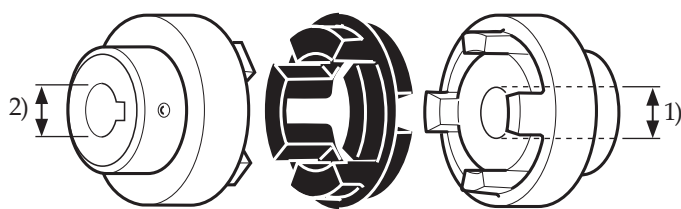


Fig 1. model (Coupling size) Exxx

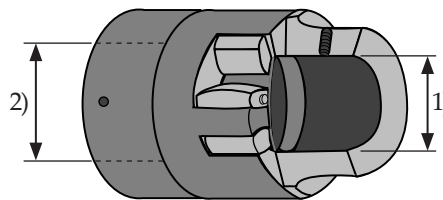


Fig 2. model (Coupling size) Axx

Ordering code

Pump Size	Gene-ration	Pump shaft diameter in mm ¹⁾	Motor IEC size	Motor shaft diameter in mm ²⁾	Coupling size	Part numbers for coupling complete coupling	rubber ring
ACD 025	No coupling, pump and motor are short coupled						
ACE/ 025-032	3	14	71	14	A24	191653	190619
LPE			80	19	A24	191654	190619
			90	24	A24	191655	190619
			100-112	28	A24	191656	190619
038	3	19	80	19	A24	191657	190619
			90	24	A24	191658	190619
			100-112	28	A24	191693	190619
			132	38	A28	191660	190621
ACF/ 80	5	42	132	38	E97	192993	124453
UCF			160	42	E97	192994	124453
			180	48	E112	192995	124412
			200	55	E128	192996	124461
90	5	42	132	38	E112	192997	124412
			160	42	E112	192998	124412
			180	48	E112	192995	124412
			200	55	E128	192996	124461
			225	60	E148	193001	124479
100	5	55	160	42	E128	193002	124461
			180	48	E128	193003	124461
			200	55	E128	193004	124461
			225	60	E148	193005	124479
			250	65	E148	193006	124479
			280	75	E168	193007	124487
110	5	55	160	42	E128	193002	124461
			180	48	E128	193003	124461
			200	55	E128	193004	124461
			225	60	E148	193005	124479
			250	65	E148	193006	124479
			280	75	E168	193007	124487
125	5	55	160	42	E128	193002	124461
			180	48	E128	193003	124461
			200	55	E128	193004	124461
			225	60	E148	193005	124479
			250	65	E148	193006	124479
			280	75	E168	193007	124487
ACG/ 045	7	19	80	19	A19	191691	193403
UCG			90	24	A19	191692	193403
			100-112	28	A24	191693	190619
			132	38	A28	191694	190621
052	7	24	80	19	A19	191695	193403
			90	24	A19	191696	193403
			100-112	28	A24	191697	190619
			132	38	A28	191698	190621
			160	42	A38	191699	193404
060-070	7	28	100-112	28	A24	191700	190619
			132	38	A28	191701	190621
			160	42	A38	191702	193404
			180	48	A42	191703	193406

Pump Size	Generation	Pump shaft diameter in mm ¹⁾	Motor IEC size	Motor shaft diameter in mm ²⁾	Coupling size	Part numbers for coupling complete coupling	rubber ring			
D4	025-032	1-2	19	80	19	E67	191640	124438		
				90	24	E67	191641	124438		
				100-112	28	E82	191741	124446		
				132	38	E97	191742	124453		
				160	42	E97	191743	124453		
	038	1-2	24	180	48	E112	191744	124412		
				100-112	28	E82	191646	124446		
				132	38	E97	191746	124453		
				160	42	E97	191747	124453		
				180	48	E112	191748	124412		
	045-052	1-2	32	200	55	E128	191749	124461		
				225-2p	55	E128	191750	124461		
				100-112	28	E82	191751	124446		
				132	38	E97	191752	124453		
				160	42	E97	191753	124453		
180				48	E112	191754	124412			
200				55	E128	191755	124461			
225-2p				55	E128	191755	124461			
225-4-8p				60	E148	191788	124479			
250-2p				60	E148	191788	124479			
052	1-2	32	250-4-8p	65	E148	191759	124479			
			280-2p	65	E148	191759	124479			
			280-4-8p	75						
			315-2p	65	E148	191759	124479			
			060-070	1-2	42	132	38	E97	192993	124453
						160	42	E97	192994	124453
						180	48	E112	192995	124412
						200	55	E128	192996	124461
						225-2p	55	E128	192996	124461
						225-4-8p	60	E148	191768	124479
250-2p	60	E148				191768	124479			
250-4-8p	65	E148				191770	124479			
280-2p	65	E148				191770	124479			
280-4-8p	75	E168				191772	124487			
D6	038	3	28	315-2p	65	E148	191770	124479		
				315-4-8p	80	E194	191774	124495		
				160	42	E97	193158	124453		
				180	48					
				200	55	E128	193159	124461		
	045	3	32	225-2p	55					
				225-4-8p	60					
				250-2p	60	E148	193160	124479		
				250-4-8p	65					
				280-2p	65					
				280-4-8p	75					
				160	42					
				180	48	E112	191754	124412		
				200	55					
				225-2p	55					
045	3	32	225-4-8p	60						
			250-2p	60						
			250-4-8p	65						
			280-2p	65						
			280-4-8p	75						
045	3	32	315-2p	65	E148	191790	124479			
			315-4-8p	80						

Notes:

- 1) Pump shaft diameter. 'X' indicate that the shaft key groove are according to an old Swedish standard SMS 31
- 2) Motor shaft diameter, see figures on page 56.

Pump	Size	Gene- ration	Pump shaft diameter in mm ¹⁾	Motor IEC size	Motor shaft diameter in mm ²⁾	Coupling size	Part numbers for coupling complete coupling	rubber ring	
D6	052	3	38	200	55	E128	193163	124461	
				225-2p	55				
				225-4-8p	60	E148	193164	124479	
				250-2p	60				
				250-4-8p	65	E148	193165	124479	
				280-2p	65				
				280-4-8p	75				
				315-2p	65	E148	193165	124479	
				315-4-8p	80				
		060	3	42	250-2p	60	E148	191768	124479
				250-4-8p	65				
				280-2p	65	E148	191770	124479	
				280-4-8p	75				
				315-2p	65				
				315-4-8p	80				
				355-2p	70				
	070	3	48	250-2p	60				
				250-4-8p	65				
				280-2p	65				
				280-4-8p	75				
				315-2p	65				
				315-4-8p	80				
				355-2p	70				
E4	025-032	1	19	71	14	E50	191775	124420	
				80	19	E67	191640	124438	
				90	24	E67	191641	124438	
				100-112	28	E82	191741	124446	
				132	38	E97	191742	124453	
		032	1	19	160	42	E97	191743	124453
					180	48	E112	191744	124412
		038-052	1	32	100-112	28	E82	191751	124446
		038-060	1	32	132	38	E97	191752	124453
		038-070	1	32	160	42	E97	191753	124453
	180				48	E112	191785	124412	
		045-070	1	32	200	55	E128	191786	124461
		052-070	1	32	225-2p	55	E128	191787	124461
					225-4-8p	60	E148	191788	124479
					250-2p	60	E148	191789	124479
					250-4-8p	65	E148	191790	124479
					280-2p	65	E148	191790	124479
					280-4-8p	75			
					070	1	32	315-2p	65
					315-4-8p	80			
LPD	015-020			No coupling, pump and motor are short coupled					
LPQ	100-140	1	60	200	55	E148	191730	124479	
				225	60	E148	191731	124479	
				250	65	E148	191732	124479	
				280	75	E168	191733	124487	
				315	80	E194	191734	124495	
	125-140	1	60	315	80	E194	191734	124495	
UCF	see ACF								
UCG	see ACG								

Notes:

- 1) Pump shaft diameter
- 2) Motor shaft diameter, see figures on page 56.

The ball bearing sets consists of: ball bearing, driving end ball bearing, non driving end

ABB (ASEA)	PART.NO	BROOK CROMPTON (Brook Hansen)	PART.NO	SIEMENS	IEC	PART.NO
M2VA 71	189225	WU-DA 71	189738	1LA7 070-073	71	189225
M2VA 71BB,BC,C*	152041	WU-DA 80	190244	1LA7 080-083	80	191494
M2VA 80	153007	WU-DA 90	190245	1LA7 090-096	90	191495
M2AA 90	152058	WU-DA 100	189316	1LA7 106-107	100	191496
M3AA 90	152058	WU-DA 112	189316	1LA7 113	112	191496
M2AA 100	168336	WU-DA 132	192101	1LA7 130-134	132	189382
M3AA 100	168336	WU-DA 160	192425	1LA7 163-166	160	189610
M3AA 112	189360	WU-DA 180	189914	1LG4 183-188	180	191497
M3AA 112MB*	189361	WU-DF 200	192100	1LG4 206-208	200	191498
M3AA 132	188910	WU-DF/WP-UDF 225S	188877	1LG4 220-228	225	191499
M3AA 132SC,MB,MC*	189382	WU-DF/WP-UDF 225M	188976	1LG4 253-258	250	191500
M3AA160	191488	WU-DF/WP-UDF 250 2-Pole	188976	1LG4 280-288	280 2pole	191501
M3AA 180	191489	4-8 "	188977	1LG4 310-313	280 4-8-pole	191502
M3AA 200	191490	WU-DF/WP-UDF 280 2-Pole	188976		315 2-pole	191503
M3AA 225	189920	4-8 "	188978		315 4-8 pole	188979
M3AA 250	191491	WU-DF/WP-UDF 315 2-Pole	188977			
M2CA 280 2-Pole	191492	4-8 "	188979			
4-8 "	188977					
M2CA 315 2-Pole	191492					
4-8 "	191493					

HOYER	PART.NO
IEC 71	189228
IEC 80	189228
IEC 90	189231
IEC 100	188911
IEC 112	189230
IEC 132	194098
IEC 160	189522
IEC 180	194100
IEC 200	194101
IEC 225, 2P	194101
IEC 250, 2P	194101
IEC 280, 2P	194103
IEC 315, 2P	194104
IEC 225, 4-8P	194102
IEC 250, 4-8P	194103
IEC 280, 4-8P	194104
IEC 315, 4-8P	194106

*) High output (HO) motors

BALL BEARING SETS FOR OBSOLETE MOTORS:

MT/M2AA 63	189225	MBT 112	168831	UD 63	186676
MT/M2AA 71	152041	MBT 132	168344	UD 71	186676
MT/M2AA 80	153007	MBT 160	168351	UD 80	186684
MT/M2AA 90	152058	MBT 180	168369	UD 90	186692
MT/M2AA 100	168336	MBT 200	172551	UD 100	186627
M2AA 112 M	189360	MBT 225	172569	UD 112	186627
M2AA 112 MB	189361	MBT 250	172569	UD 132	186700
M2AA 132 S, SA, SB, M, MA	188910			UD 160	186718
M2AA 132 MB 6-POLE	188910			UD 180	186726
M2AA 132 MB 4-8-P; MC, SC	189382				
M2AA 160	189610				
M2AA 180	189611				
M2AA 200	190652				
M2AA 225	189920				

Section D

Obsolete products



Please note, when selling an obsolete pump you also have to inform your customer until which year spares will be available. The normal 10 years spare parts obligation is only valid for current products.

Spare parts for the below mentioned pump series and sizes are not longer available as they are withdrawn from production with the exception for parts of type A, B and C

AAD/AAE sizes 025-038
AAG/AAH sizes 045-070
ALA sizes 025-052
ALD sizes 025-052
ALG sizes 060-070
ANA sizes 015-020
AND/ANG/ANL sizes 025-070
APD sizes 025-052
APG sizes 060-110
B4 sizes 025-070
E4C - " -
E4S - " -

- A Mechanical shaft seals as noted in SHAFT SEALS FOR WITHDRAWN PUMPS in this section
- B Standard components such as O-rings and ball bearings will be available in many cases. Please contact IMO AB
- C IMO unique components that are also included in current pump series, for example valve components

List of components

Valid for all pumps in sizes: AAA 015/020; Rotor diameter and generation N1 (015) & N2 (020)
With version codes: I } R } B } E } The version code is composed of the letters in the 4 columns
V }
Also valid for pump option A102
Example of pump designations std: AAA 015N1 IRBE
option: AAA 020N2 IVBE A102

PosNo	Denomination	Qty	Spare parts set:				015N1 IxBE	020N2 IxBE	Note
			G011 Rotor set CCW	G012 Rotor set CW	G050 Shaft seal				
G011	Rotor set CCW-rot.	1				obsolete	obsolete		
G012	" CW-rot	1				obsolete	obsolete		
G050	Shaft seal xRxx	1				116178	116186		
"	" xVxx	1				164640	164657		
101	Power rotor CCW	1	x						
102	Power rotor CW	1		x					
114	Pin	1	x	x		--			
115	Thrust washer	1	x	x		--			
201	Idler rotor CCW	2	x						
202	Idler rotor CW	2		x					
351	Balancing cover	1					--	1	
359	Distance piece	1					--		
401	Pump body	1							
451	Screw	4				--			
453	Screw	4							
501E	Front cover	1				--			
506	Gasket	1				--	018408		
507	Washer	1			x	--			
509A	Bush	1			x				
509B	Sealing bush	1			x				
509C	Rubber ring xRxx	2			x	012203	012203		
509C	Rubber ring xVxx	2			x	012211	012211		
509D	Washer	2/4			x				
509E	Spring	1			x				
510	Gland washer	1			x				
510A	Gasket	1			x		--		
510A	O-ring	1			x	--			
515	Gland nut	1				031674	031674		
551	Rear cover	1							
556	Gasket	1				018358	018408		

Notes: 1) Included in item 401

Older versions

AAA 15-3 NA: (foot-mounted version)
All parts excl. front cover item 501 are applicable.

AAA 20-3 NA: (foot-mounted version)
All parts excl. pump body item 401, front cover item 501 are applicable.
G050 has to be completed with item 515.

AAA 20-3 NE/N2E:
When ordering new shaft seal the gland nut item 515 has to be ordered.

UAA IRBE (pump with NPT-thread connection)
All parts excl. pump body item 401 are applicable.

Explanations:

A102: Nonstandard rotation: CW (clockwise) (as CCW-rotation is standard)

G011: Rotor set CCW rotation (Standard)

G012: Rotor set CW rotation (Option)

G050: Shaft seal

G053: Minor kit, consisting of G050 + G057

G054: Major kit, consisting of G050, G057 + G011(G012)

G057: Joint kit; size 015 - item 556, size 020 - item 506 and 556

Old

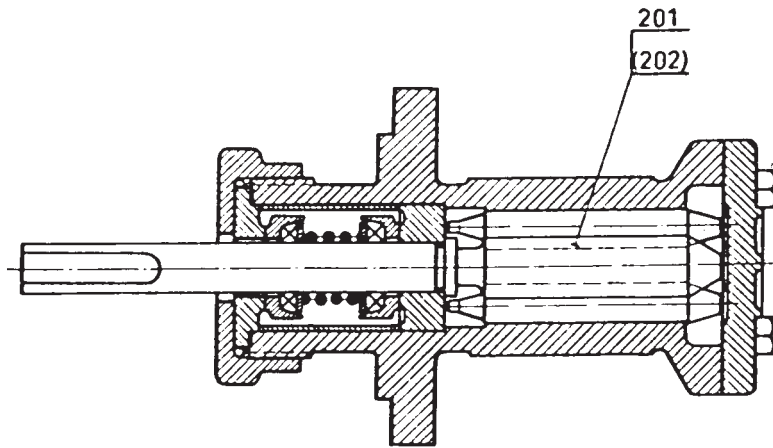
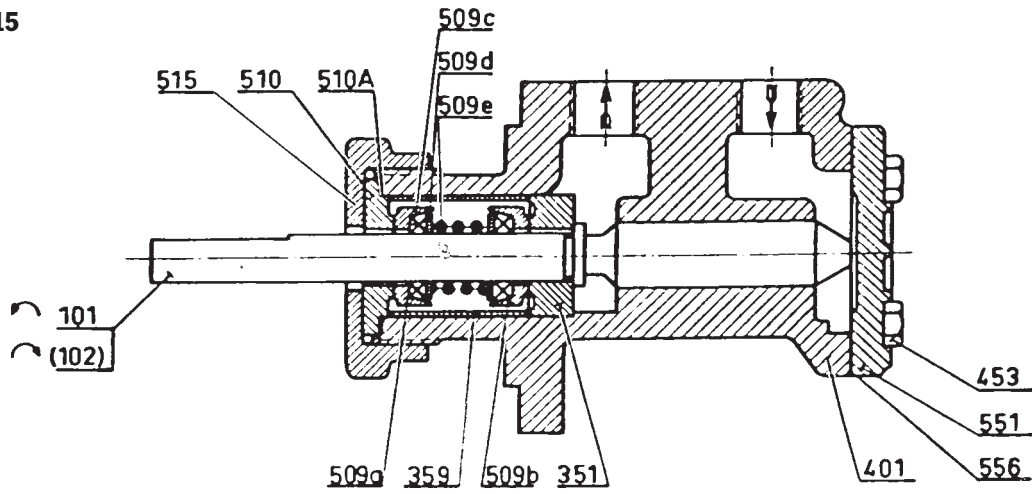
AAA 15-3 NE
AAA 20-3 N2EX/102
AAA xx-3 xx/V

Current designations

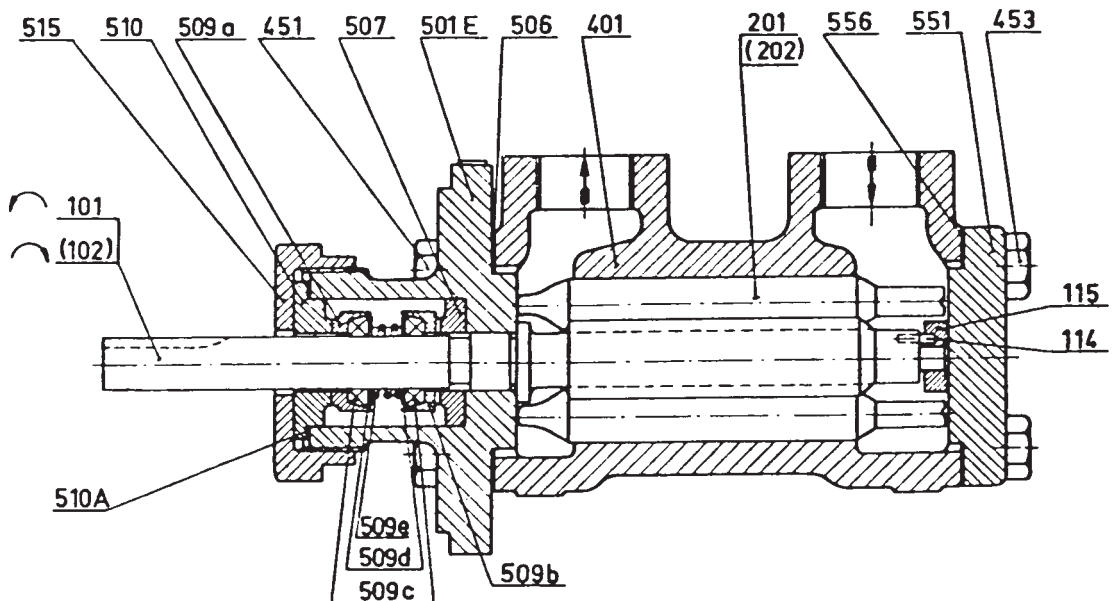
AAA 015N1 IRBE
AAA 020N2 IRBE A102
AAA xxxNz IVBE

Assembly drawing

Size 015



Size 020



List of components

Valid for all pumps in sizes: ABF 080, 090, 100, 110, 125 & 140; Rotor diameter and generation L2/L4/N2/N4/P4
With version codes: I } R } Y } P } The version code is composed of the letters in the 4 columns

Also valid for pump option A020 & A561

Example of pump designations std: ABF 080N2 IRYP

option: ABF 140P4 IRYP A561

Pos No	Denomination	Qty	G011	G031	G041	G050	G053	G054	G057	G070	G090	Note
1010	Power rotor	1	x					x			x	
106	Balancing piston	1	x					x			x	
114	Tension pin	1	x					x			x	
115	Thrust washer	1	x					x			x	
116	Thrust washer	1	x					x			x	
117	Locking ring	1	x					x			x	
201	Idler rotor	2	x					x			x	
301	Sleeve	1									x	
307	Screw	6									x	
307A	Locking wire	1									x	
313	Drain tube	1									x	
3510	Front balancing cover	1									x	
354	Bearing bush	1		x							x	
355	Set screw	1		x							x	
355A	Washer	1		x							x	
356	Tension pin	1		x							x	
357	Thrust washer	1		x							x	
358	Locking ring	1		x							x	
361	Screw	4									x	
362	Washer	4									x	
368	Plug	1									x	
373	Thrust pad	2			x						x	
375	Balancing bush	1			x						x	
376	Balancing bush	2			x						x	
377	Screw	1			x						x	
3800	Balancing cover	1									x	
381	Plug	2									x	
382	Screw	4									x	
383	Washer	4									x	
401	Pump body	1										
451	Stud bolt	8										
452	Nut	8										
455	Stud bolt	8										
456	Nut	8										
462	Plug	1										
462A	Washer	1					x	x	x			
464	Plug	2										
464A	Washer	2					x	x	x			
466	Cover	1										
466A	O-ring	1					x	x	x			
467	Screw	6										
467A	Washer	6										
501	Top cover	1										
504	Screw	4										
506	Joint	1					x	x	x			
509A	Sealing bush	1				x	x	x			x	
509C	Rubber ring	1				x	x	x			x	
509D	Washer	1				x	x	x			x	
509E	Spring	1				x	x	x			x	
511	Gland	1				x	x	x			x	
511A	Joint	1				x	x	x			x	
561	Heating element	1										1
562	Nut	4										1
563A	Joint	1										1
564	Cover	1										1

Pos No	Denomination	Qty	G011	G031	G041	G050	G053	G054	G057	G070	G090	Note
601	Valve cover, upper	1								x		
602	Joint	1					x	x	x	x		
605	O-ring	1					x	x	x	x		
606	Valve cover, lower	1								x		
607	Joint	1								x		
608	Valve spindle	1								x		
6120	Regulating nut	1								x		
613	Pin	1								x		
614	Valve piston	1								x		
615	Valve spring	1						x		x		
621	Hand wheel	1								x		
622	Nut	1								x		
622A	Key	1								x		
623	Plate	1								x		
636	Chock valve	1/3								x		2
655	Guiding washer	1								x		
656	Guiding socket	1								x		
657	Spring	1								x		
658	Distance sleeve	1								x		

Notes:

- 1) Included in pump option IRYP A561 (pump with heating device)
- 2) Incl. in item 6140. Valid for sizes 100-140.
- 3) These items will only be delivered if components still are available

Explanations:

A020: Surface-treated cast iron pump bodies.
 A561: Pump including heating device
 G011: Rotor set
 G031: Front balancing cover
 G041: Rear bearing element
 G050: Shaft seal
 G053: Minor kit (G050 + G057)
 G054: Major kit = G050+G057+G011+Item 615
 G057: Joint kit
 G070: Valve element
 G090: Pump element

Old designation

ABF 80-3 N2M
 ABF 110-3 N4M
 ABF 125-3L N4M/Y
 ABF 140-3P N4M561A
 Sizes 80-100 in generation N2M=z2
 Sizes 110-140 in generation N4M=z4

Current designation

ABF 080N2 IRYP
 ABF 110N4 IRYP
 ABF 125L4 IRYP A020
 ABF 140P4 IRYP A561

Also valid for older generations of pumps:

ABF 110-140 N2M:
 All parts, except item 401 pump body, are applicable.
ABF NM, NM 401 or NM 410 (all sizes)
 All parts, except item 401, 501, 601, 606 and 622A pump body, are applicable.
 These pumps have welded pump bodies.
ABB N3B(Y) (all sizes): Foot mounted version
 All parts included in pump element G090 and valve element G070 are identical with ABF parts.

**** Spares of ABF pumps in sizes 080-140 were available until 2003. After that date only the spare parts sets G050 & G057 will be available for sale at least up the the end of 2017.**

Ordering code

Pos No	Spare parts (set)	Part numbers for pump size						Note
		080	090	100	110	125	140	
G050	Shaft seal	116251	116269*	116277	116285	116293	116301	1
G057	Joint kit	183699	183699	183707	183715	183723	183731	
506	Gasket - Joint	021477	021477	021568	021782	021923	022087	
509C	Rubber ring	012690	012690	012765	012815	012906	012948	
608	Valve spindle	046581	046581	048967	048967	051243	051243	
614	Valve piston	046599	046599	048975	048975	051250	051250	
615	Valve spring	021451	021451	021766	021766	022061	022061	
657	Spring	090654	090654	090662	090662	090670	090670	

Notes:

*) For pump ABB 90-3 N3B: Shaft seal G050 p/n 116251;

1) Not valid for pump option A020.

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling of the pump.

G053 Minor kit

For service

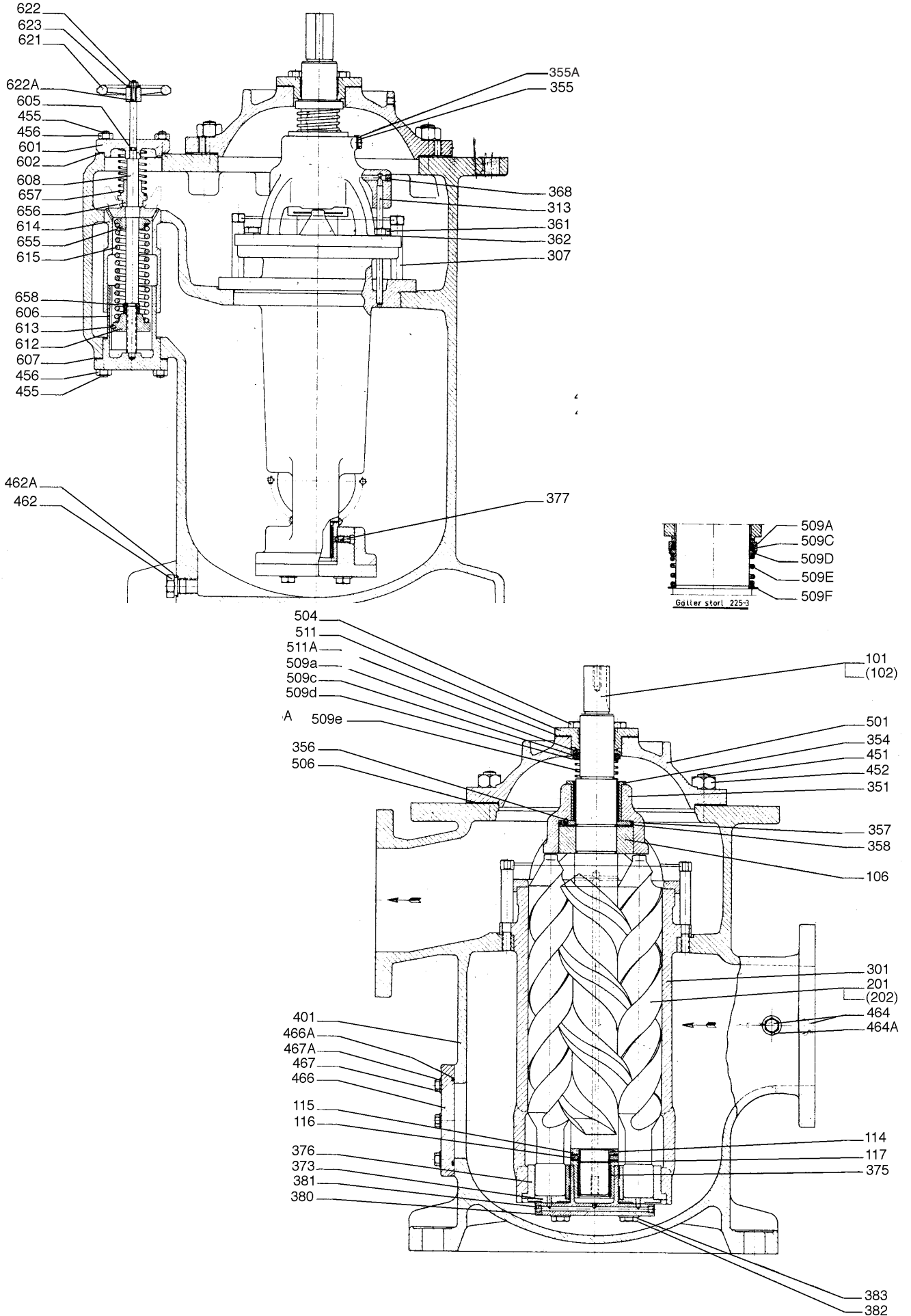
Ordering example:

For IMO-pump ABF 080N2 IRYP

Serial number 345678

Shaft seal G050 p/n 116251

**** Spares of ABF pumps in sizes 080-140 were available until 2003. After that date only the spare parts sets G050 & G057 will be available for sale at least up to the end of 2017.**



List of components

Valid for all pumps in sizes: ABQ 100, 110, 125 & 140; Rotor diameter and generation L5/N5/P5
 With version codes: I } R } Y } P } The version code is composed of the letters in the 4 columns
 Also valid for pump option A020 & A561
 Example of pump designations std: ABQ 100N5 IRYP
 option: ABQ 140P5 IRYP A561

Pos No	Denomination	Qty	Components included in Spare parts sets:							Note	
			G011	G020	G041	G050	G053	G054	G057		G070
1010	Power rotor	1	x					x		x	
105	Plug	1	x					x		x	
105A	Ball	1	x					x		x	
114	Tension pin	2	x					x		x	
115	Thrust washer	2	x					x		x	
116	Thrust washer	2	x					x		x	
117	Locking ring	2	x					x		x	
201	Idler rotor	2	x					x		x	
301	Sleeve	2		x						x	
303	Distance ring	1		x						x	
308	Pin	2/4		x						x	
308A	Nut	2/4		x						x	
308B	Washer	2/4		x						x	
314	Screw	4		x						x	2
315	Screw	18		x						x	1
315	Nut	4		x						x	2
315A	Locking washer	8		x						x	2
315B	Washer	18		x						x	1
330	Flange	1		x						x	2
331	Screw	4		x						x	2
332	Washer	4		x						x	2
375	Bush	2			x					x	
377	Set screw	2			x					x	
380	Thrust balancing cover	2								x	
382	Screw	8								x	
383	Washer	8								x	
401	Pump body	1									
451	Stud bolt	16/18									
452	Nut	16/18									
455	Stud bolt	8									
456	Nut	8									
463	Plug	1									
463A	Washer	1					x	x	x		
464	Plug	2									
464A	Washer	2					x	x	x		
464C	Washer	1					x	x	x		3
466	Cover	1									
466A	O-ring	1					x	x	x		
467	Screw	6									
467A	Washer	6									
501	Top cover	1									
504	Screw	4									
506	Joint	1					x	x	x		
507	Bottom ring	1				x	x	x		x	
509A	Sealing bush	2				x	x	x		x	
509C	Rubber ring	2				x	x	x		x	
509D	Washer	2				x	x	x		x	
509E	Spring	1				x	x	x		x	
510	Seat	1				x	x	x		x	
511	Gland	1				x	x	x		x	
511A	Joint	1				x	x	x		x	
511C	O-ring	1				x	x	x		x	
536	Eye bolt	2									
537	Deaeration plug	1									

Pos No	Denomination	Qty	Components included in Spare parts sets:								Note
			G011	G020	G041	G050	G053	G054	G057	G070	
537A	Washer	1					x	x	x		
537B	Plug	1									
537C	Washer	1					x	x	x		
601	Valve cover, upper	1								x	
602	Joint	1					x	x	x	x	
605	O-ring	1					x	x	x	x	
606	Valve cover, lower	1								x	
607	Joint	1					x	x	x	x	
608	Valve spindle	1								x	
6120	Regulating nut	1								x	
613	Pin	1								x	
6140	Valve piston	1								x	
615	Spring	1						x		x	
621	Hand wheel	1								x	
622	Nut	1								x	
622A	Key	1								x	
623	Plate	1								x	
636	Chock valve incl in 6140	2/3								x	
655	Guiding washer	1								x	
656	Guiding socket	1								x	
657	Spring	1								x	
658	Distance sleeve	1								x	

Notes:

- 1) Valid for size 100
- 2) Valid for size 110-140
- 3) Valid for size 110

Explanations:

A020: Surface-treated cast iron pump bodies.
 A561: Pump including heating device
 G011: Rotor set
 G020: Sleeve element
 G041: Rear bearing element
 G050: Shaft seal
 G053: Minor kit (G050+G057)
 G054: Major kit = G050+G057+G011+Item 615
 G057: Joint kit
 G070: Valve element
 G090: Pump element

Old designation

ABQ 100-3 DN5M
 ABQ 110-3L DN5M/Y
 ABQ 125-3 DN5M 561A

Current designation

ABQ 100N5 IRYP
 ABQ 110L5 IRYP A020
 ABQ 125N5 IRYP A561

Also valid for older generations of pumps

ABQ 110-140 DN3M:
 All parts, except item 401 pump body and valve parts items 601-658 are applicable.
ABQ 100-140 DN4M:
 All parts, except item 401 pump body are applicable.
ABL DN3B (foot mounted version):
 Parts included in G041 and G050 are applicable.

***Spares of ABQ sizes 100-125 were available up to end of year 2003. After that date only the spare parts sets G050 & G057 will be available for sale at least up to the end of 2017.**

Ordering code

Pos No	Spare parts (set)	Part numbers for pump size				Note
		100	110	125	140	
G050	Shaft seal	116210	116228	116236	116244	1
G057	Joint kit	183749	183756	183764	183772	
506	Gasket - Joint	021501	021683	021865	021865	
509C	Rubber ring	012906	012989	012989	013060	
511A	Gasket - Joint	011486	011494	011494	011502	
6140	Valve piston	051250	--	--	--	2

Notes:

- 1) Not valid for pump option A020.
- 2) See note (at the bottom of page 83) regarding availability of components.

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling of the pump.

G053 Minor kit

For service

Ordering example:

For IMO-pump ABQ 100N5 IRYP

Serial number 345678

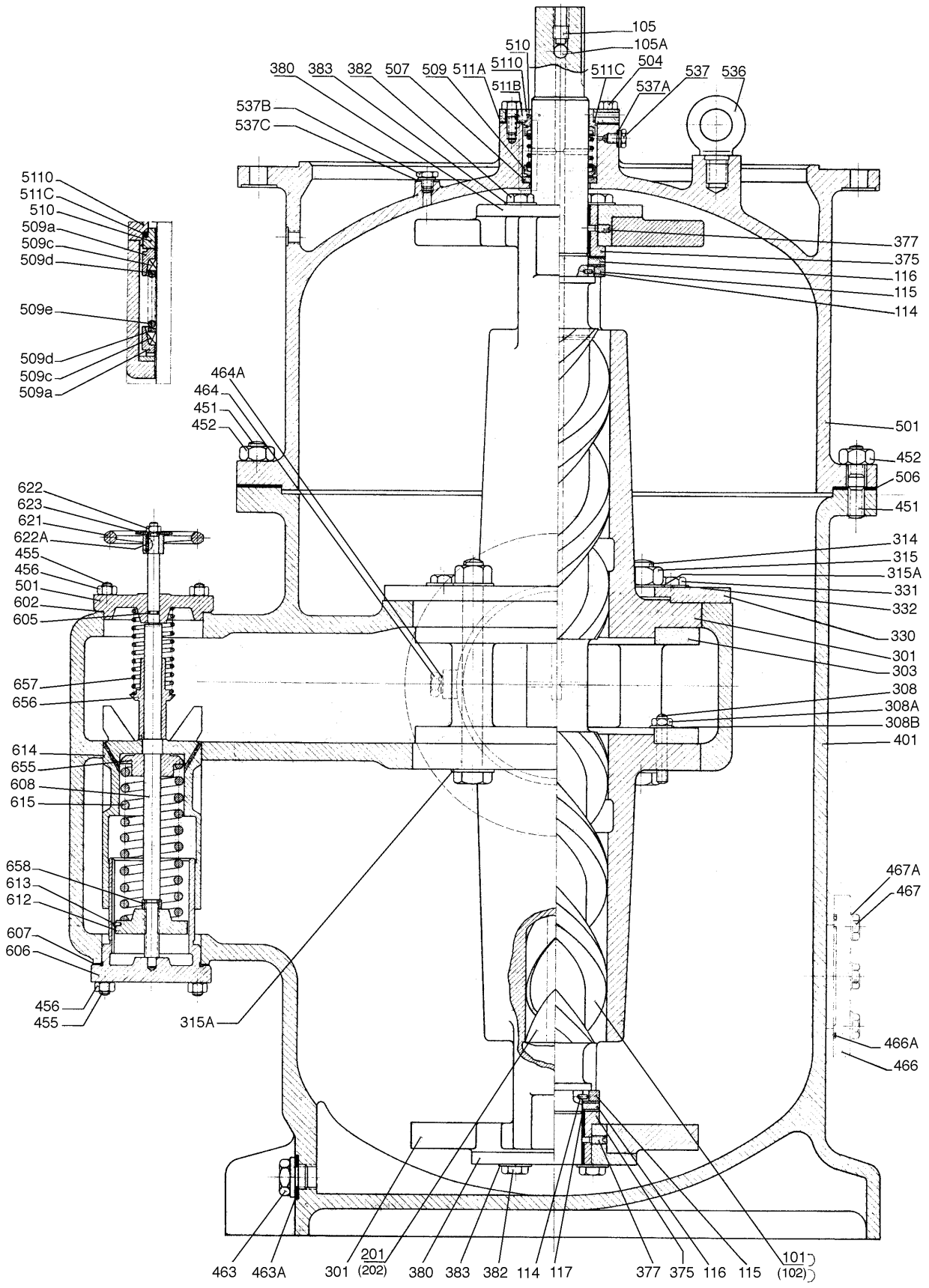
Shaft seal G050 p/n 116210

ABQ Size 100-140 pumps

Obsolete product - spares available up to end of 2003 (140: 2005)*



Spare parts book
September 2016



*Spares of ABQ sizes 100-125 were available up to end of year 2003. After that date only the spare parts sets G050 & G057 will be available for sale at least up to the end of 2017.

List of components

Valid for all pumps in sizes: ABQ 160; Rotor diameter and Generation: B5/L5/N5

With version codes: I} R} Y} O} Also valid for pump option A020, A317

P} Example of pump designations: ABQ 180N5 IRYP

Pos No	Denomination	Qty	Components included in Spare parts sets:							Note	
			G012	G020	G050	G053	G054	G057	G070		G090
1020	Power rotor	1	x				x			x	
105	Set screw	1	x				x			x	
105A	Ball	1	x				x			x	
113	Key	1	x				x			x	
117	Locking ring	1	x				x			x	
120	Distance sleeve	1	x				x			x	1
122	Ball bearing	1	x				x			x	
202	Idler rotor	2	x				x			x	
301	Sleeve	1		x						x	
302	Sleeve	1		x						x	
303	Distance ring	1		x						x	
308	Pin	4		x						x	
315	Screw	6		x						x	
315A	Locking washer	6		x						x	
331	Screw	12		x						x	
331A	Locking plate	12		x						x	
354	Bearing bush	1								x	
382	Screw	4								x	
382A	Washer	4								x	
390	Distance sleeve	4								x	
391	Bearing plate	1								x	
401	Pump body	1									
451	Screw	24									
455	Screw	8							x		
460	Pin	2									
462	Plug	1									
462A	Washer	1				x	x	x			
463	Plug	1									
463A	Washer	1				x	x	x			
464	Plug	2									
464A	Washer	2				x	x	x			
466	Bottom cover	1									
466A	Gasket	1				x	x	x			
467	Screw	16									
467A	Washer	16									
5010	Top cover	1									
502	Pin	1									
504	Screw	1									
506	Gasket	1				x	x	x			
507	Bottom ring	1			x	x	x			x	
509A	Sealing ring	1			x	x	x			x	
509C	Rubber ring	1			x	x	x			x	
509D	Washer	1			x	x	x			x	
509E	Spring	1			x	x	x			x	
510	Seat	1			x	x	x			x	
510A	O-ring	1			x	x	x			x	
5110	Seal cover	1									
511A	O-ring	1				x	x	x		x	
511B	Tension pin	1									
536	Eye bolt	2									
537	Deaeration plug	1									

Explanations:

A020: Surface-treated cast iron pump bodies

G012: Rotor set CW-rotation (std)

G020: Sleeve element

G050: Shaft seal

G053: Minor kit

G054: Major kit (G050+G057 + G012+615)

G057: Joint kit

G070: Valve element

G090: Pump element

Notes:

1) Valid for size 160

ABQ Size 160 Low pressure pump
Obsolete product - spares available up to end of 2018



Spare parts book
 September 2016

Pos No	Denomination	Qty	Components included in Spare parts sets:							
			G012	G020	G050	G053	G054	G057	G070	G090
537A	Washer	1				x	x	x		
537B	Deaeration plug	1								
537C	Washer	1				x	x	x		
601	Upper valve cover	1								x
602	O-ring	2				x	x	x		x
605	O-ring	1				x	x	x		x
606	Lower valve cover	1								x
608	Valve spindle	1								x
608A	Washer	1								x
608B	Ball bearing	1								x
608C	Retaining ring	1								x
6120	Regulating nut	1								x
613	Pin	1								x
6140	Valve piston	1								x
615	Valve spring	1					x			x
621	Hand wheel	1								x
622	Nut	1								x
622A	Key	1								x
623	Valve plate	1								x
636	Chock valve	4								x
655	Guiding washer	1								x
656	Guiding sleeve	1								x
657	Spring	1								x

Old designation
 ABQ 160-3 DN5M

Current designations:
 ABQ 160N5 IRYP

Ordering code

Pos No	Spare parts (set)		Part no for pump size 160	Note
G012	Rotor set	B-lead	144600	2
	"	L-Lead	144592	2
	"	N-lead	144618	2
G020	Sleeve element		obsolete	2
G050	Shaft seal		108696	2
G053	Minor kit		192204	2
G057	Joint kit		183780	
G070	Valve element	xxxO	116103	1
	"	xxxP	116095	1
G090	Pump element	B-lead	obsolete	2
	"	L-lead	obsolete	2
	"	N-lead	obsolete	2
122	Ball bearing		109710	
605	O-ring		015917	1
615	Valve spring	xxxO	108704	1
	"	xxxP	109660	1

Recommendation:

For maintenance the following spare part sets are recommended:

Set: *To be used:*

G057 Joint kit:

For dismantling of the pump.

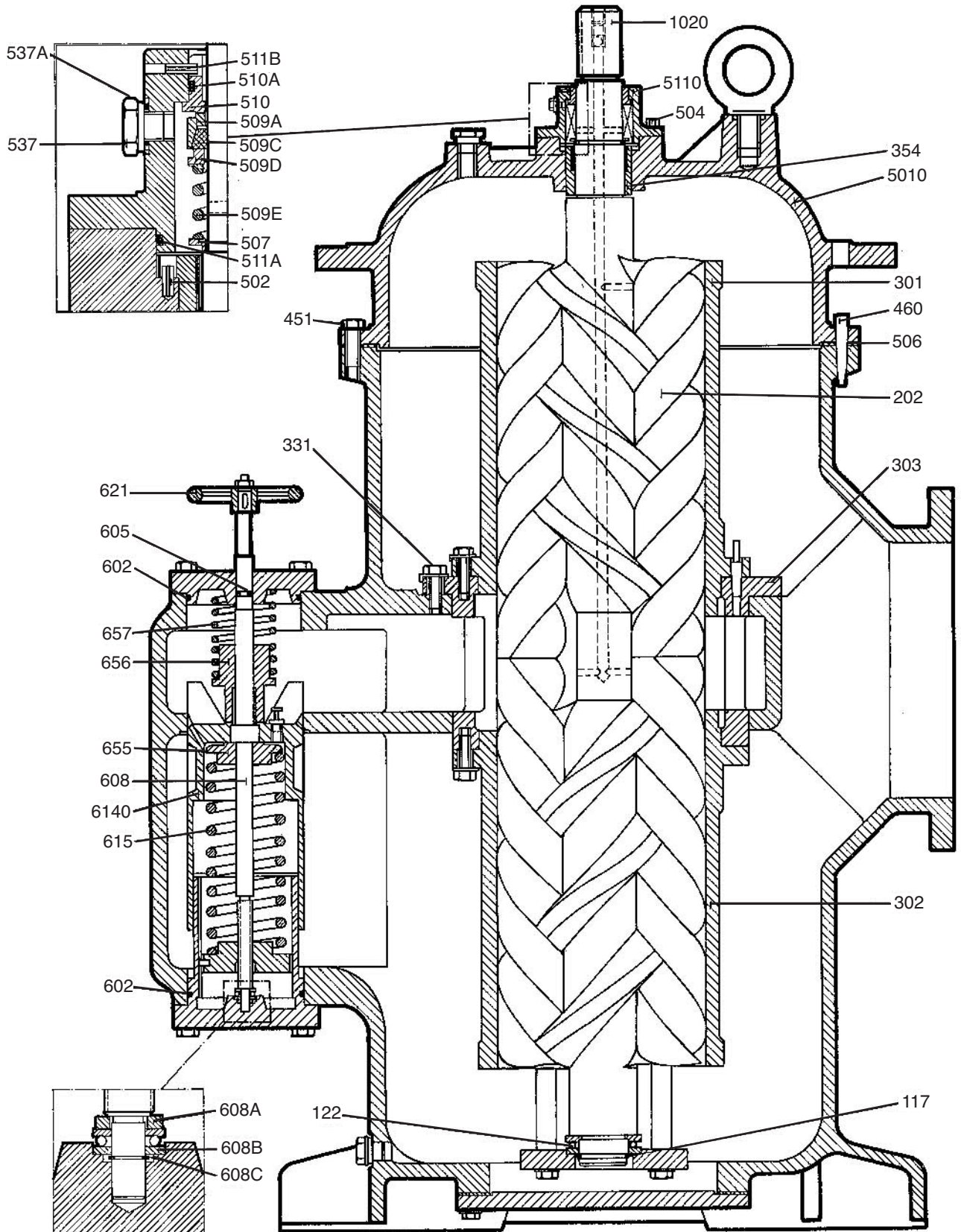
G053 Minor kit

For service

Notes:

- 1) Not valid for pump option A317
- 2) Not valid for pump option A020

Assembly drawing



List of components

Valid for all pumps in sizes: ABQ 180; Rotor diameter and Generation: B5/L5/N5

With version codes: I } R } Y } O } Also valid for pump option A020, A317

P } Example of pump designations: ABQ 180N5 IRYP

Pos No	Denomination	Qty	Components included in Spare parts sets:							Note	
			G012	G020	G050	G053	G054	G057	G070		G090
1020	Power rotor	1	x				x			x	
105	Set screw	1	x				x			x	
105A	Ball	1	x				x			x	
113	Key	1	x				x			x	
117	Locking ring	1	x				x			x	
120	Distance sleeve	1	x				x			x	1
122	Ball bearing	1	x				x			x	
202	Idler rotor	2	x				x			x	
301	Sleeve	1		x						x	
302	Sleeve	1		x						x	
303	Distance ring	1		x						x	
308	Pin	4		x						x	
315	Screw	6		x						x	
315A	Locking washer	6		x						x	
331	Screw	12		x						x	
331A	Locking plate	12		x						x	
354	Bearing bush	1								x	
382	Screw	4								x	
382A	Washer	4								x	
390	Distance sleeve	4								x	
391	Bearing plate	1								x	
401	Pump body	1									
451	Screw	24									
455	Screw	8							x		
460	Pin	2									
462	Plug	1									
462A	Washer	1				x	x	x			
463	Plug	1									
463A	Washer	1				x	x	x			
464	Plug	2									
464A	Washer	2				x	x	x			
466	Bottom cover	1									
466A	Gasket	1				x	x	x			
467	Screw	16									
467A	Washer	16									
5010	Top cover	1									
502	Pin	1									
504	Screw	1									
506	Gasket	1				x	x	x			
507	Bottom ring	1			x	x	x			x	
509A	Sealing ring	1			x	x	x			x	
509C	Rubber ring	1			x	x	x			x	
509D	Washer	1			x	x	x			x	
509E	Spring	1			x	x	x			x	
510	Seat	1			x	x	x			x	
510A	O-ring	1			x	x	x			x	
5110	Seal cover	1									
511A	O-ring	1				x	x	x		x	
511B	Tension pin	1									
536	Eye bolt	2									
537	Deaeration plug	1									

Explanations:

A020: Surface-treated cast iron pump bodies

G012: Rotor set CW-rotation (std)

G020: Sleeve element

G050: Shaft seal

G053: Minor kit

G054: Major kit (G050+G057 + G012+615)

G057: Joint kit

G070: Valve element

G090: Pump element

Notes:

1) Valid for size 160

ABQ Size 180 Low pressure pump
Obsolete product - spares available up to end of 2018



Spare parts book
 September 2016

Pos No	Denomination	Qty	Components included in Spare parts sets:							
			G012	G020	G050	G053	G054	G057	G070	G090
537A	Washer	1				x	x	x		
537B	Deaeration plug	1								
537C	Washer	1				x	x	x		
601	Upper valve cover	1								x
602	O-ring	2				x	x	x		x
605	O-ring	1				x	x	x		x
606	Lower valve cover	1								x
608	Valve spindle	1								x
608A	Washer	1								x
608B	Ball bearing	1								x
608C	Retaining ring	1								x
6120	Regulating nut	1								x
613	Pin	1								x
6140	Valve piston	1								x
615	Valve spring	1					x			x
621	Hand wheel	1								x
622	Nut	1								x
622A	Key	1								x
623	Valve plate	1								x
636	Chock valve	4								x
655	Guiding washer	1								x
656	Guiding sleeve	1								x
657	Spring	1								x

Old designation **Current designations:**
 ABQ 180-3L DN5M 615A ABQ 180L5 IRYO

Ordering code

Pos No	Spare parts (set)	Part no for pump size 180		
G012	Rotor set	B-lead	--	2
	"	L-Lead	116079	2
	"	N-lead	116061	2
G020	Sleeve element		obsolete	2
G050	Shaft seal		108696	2
G053	Minor kit		192205	2
G054	Major kit=G050+G057+G011+615			
G057	Joint kit		183798	
G070	Valve element	xxxO	116103	1
	"	xxxP	116095	1
122	Ball bearing		109710	
605	O-ring		015917	1
615	Valve spring	xxxO	108704	1
	"	xxxP	109660	1

Recommendation:

For maintenance the following spare part sets are recommended:

Set: *To be used:*

G057 Joint kit:

For dismantling of the pump.

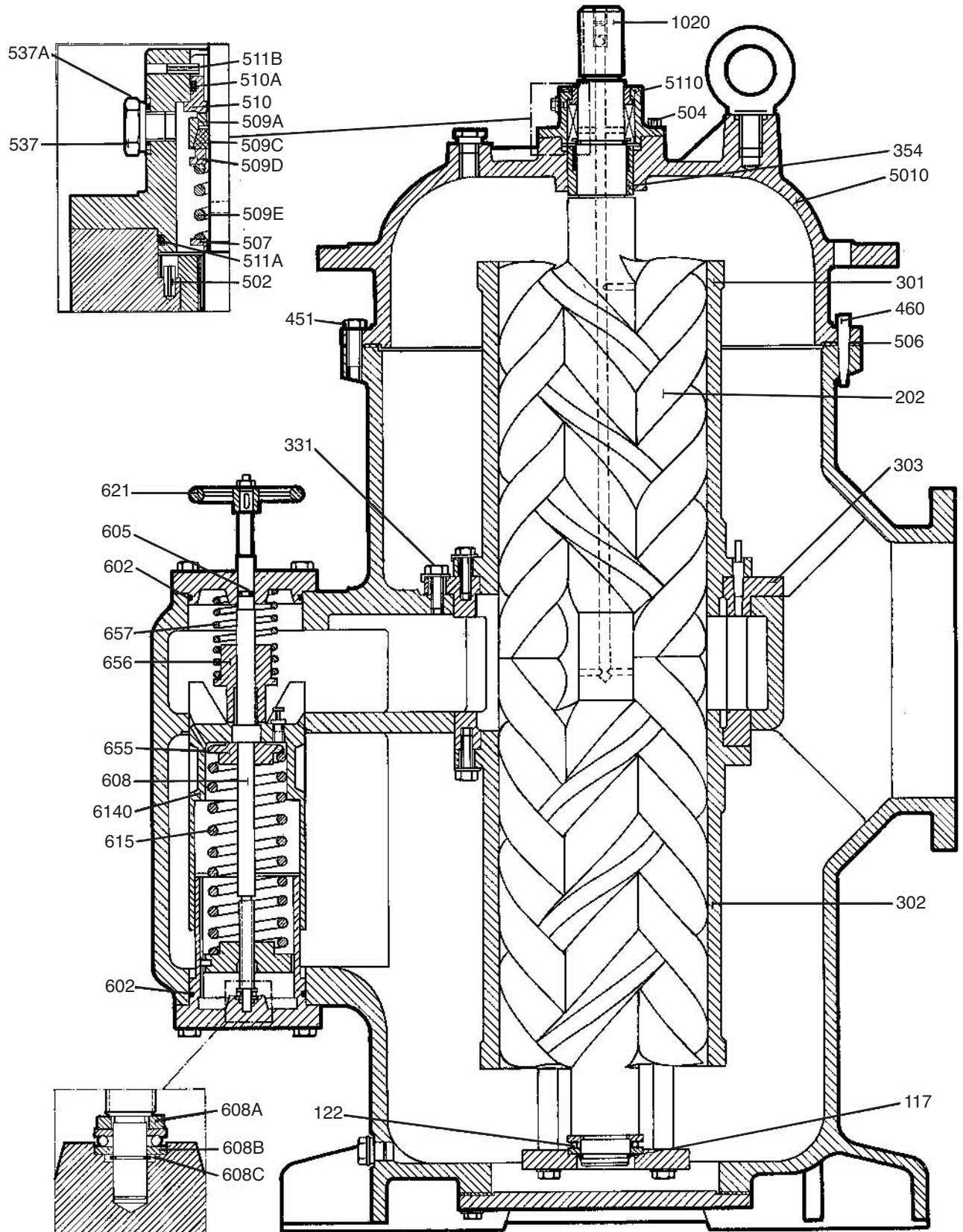
G053 Minor kit

For service

Notes:

- 1) Not valid for pump option A317
- 2) Not valid for pump option A020

Assembly drawing



Spares available up to end of 2017.

List of components

Valid for all pumps in sizes: ACE 025/032/038 Rotor diameter & Generation: L1/L2, K1/K2, N1/N2

With version codes: I } R } B } E } Also valid for pump options: A020, A090, A101, A368 & IXBO A076

N } T } F } O } The version code is composed of the letters in the 4 columns.

Y } V } P } Example of pump designations

std: ACE 025L2 NTBP; option: ACE 038N1 IXBO A076

Pos No	Denomination	Qty	Components included in Spare parts sets:						Note
			G011 Rotor set	G012 Rotor set	G050 Shaft seal	G053 Minor kit	G054 Major kit	G057 Joint kit	
1010	Power rotor CCW-rot.	1	x					(x)	1, 2
1020	Power rotor CW-rot.	1		x				x	1
(112)	Collar	1	x	x				x	1
113	Key	1	x	x				x	1
122	Ball bearing	1				x	x	(x)	7
124	Retaining ring	1				x	x	x	
201	Idler rotor CCW-rot	2	x					(x)	1, 2
202	Idler rotor CW-rot	2		x				x	1
401	Pump body	1							
416	Inlet flange	1							
417	Screw	8							
418	Gasket	1				x	x	x	
423	Gasket	1				x	x	x	
427	Outlet flange	1							
443	Drip nipple	1							
451	Screw	4							
453	Screw	4							
473	Grease nipple	1							
473A	Protective cover	1							
480	Valve housing	1							3
5010	Front cover	1							
502	Pin	1							5
506	O-ring	1				x	x	x	
509	Shaft seal	1			x	x	x		
514	Retaining ring	1				x	x	x	
551	Rear cover	1							6
556	Gasket	1				x	x	x	3
605	O-ring	1				x	x	x	3
606	Lower cover	1							3
607	Seal ring	1				x	x	x	3
612	Set screw	1							3
613	Pin	1							3
614	Valve piston	1							3
615	Valve spring	1					x		3, 4

Notes:

- Delivered as complete rotor set only.
CW=clockwise rotation;
CCW=counter clockwise rotation.
- Pumps with CCW-rotation have the additional pump designation 'A101'.
- Included in version code xxxP/xxxO.
- Available in two alternatives:
for max 16 bar - version code xxxP,
for max 6 bar - version code xxxO.
- Included in version code Nxxx.
- Included in version code xxxE.
- New spare part set G057 excluding ball bearing introduced. Old set available during a transition period. Part numbers, see ordering code.

ACE (K1/K2/L1/L2/N1/N2) Low pressure pump
Obsolete product - Current ACE (K3/L3/N3) See section C



Spare parts book
 September 2016

Spares available up to end of 2017.

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling of the pump

G053 Minor kit

For service

G054 Major kit

For repair after damage or greater wear.

Ordering example:

For IMO-pump ACE 032N2 NTBP,
 serial number 456760:

Shaft seal pos G050 p/n 190811

Valve spring pos 615 p/n 154054

Old designation:	Replaced by gen 1:	Replaced by gen 2:	Current designation:
ACE 25-2 NC	ACE 025N1 IRBP	ACE 025N2 NVBP	ACE 025N3 NVBP
ACE 25-2L NC 615A	ACE 025L1 IRBO	ACE 025L2 NVBO	ACE 025L3 NVBP
ACE 032N2	ACE 032N2 NTBP		ACE 032N3 NTBP
ACE 032N2 615A	ACE 032N2 NTBO		ACE 032N3 NTBP
ACE 38-2 NC/101	ACE 038N1 IRBP A101	ACE 038N2 NVBP A101	ACE 038N3 NVBP A101
ACE 38-2 NC/60	ACE 038N1 YVBP	ACE 038N2 NTBP	ACE 038N3 NTBP
	ACE 025L1 IVBP	ACE 025L2 NVBP	ACE 025L3 NVBP
	ACE 038K1 IVBP A020		ACE 038K3 NVBP
	ACE 032N1 IXBO A076	ACE 032N2 NXBO A076	ACE 032N3 NTBP
	ACE 032N1 IVBP A090		contact IMO
	ACE 032N2 NTBP A368		ACE 032N3 NTBP

Pumps for HFO application should be replaced by our ACE OptiLine, magnetic coupled pump. Pump duty required for correct selection.

Replacing ACE pumps generation 1 and 2 by current pump in generation 3

Existing Pump Unit Pump Model	Existing Motor IEC size	Frame	Replace bare shaft pump by model	Replace complete shaft coupling Part No
ACE 025L1/N1	71	130	ACE 025L3/N3	191603
or L2/N2	80	165		191604
	90	165		191605
	100/112	215		192175
ACE 032L1/N1	71	130	ACE 032L3/N3	191603
or L2/N2	80	165		191604
	90	165		191605
	100/112	215		192175
ACE 038K1/N1	80	165	ACE 038K3/N3	191640
or K2/N2	90	165		191641
	100/112	215		191741
	132	265		191742

The existing shaft coupling for pump size 025 can be used also after the changing the pump into generation 3. The designations of the shaft couplings may refer to other pump series as the same coupling is used to several pump series.

		Part numbers for pump size		
		025	032	038
Pump	ACE xxxL3 NTBP	189899	189894	--
	ACE xxxL3 NVBP	189897	189892	--
	ACE xxxK3 NTBP	--	--	189889
	ACE xxxK3 NVBP	--	--	189886
	ACE xxxN3 NTBP	189898	189893	189888
	ACE xxxN3 NVBP	189686	189787	189788
	ACE xxxN3 NVBP A101	190837	191066	190851

Spares available up to end of 2017.

Ordering code

Pos No	Spare parts (set)	Part no for pump size			Note
		025	032	038	
G011	Rotor set CCW-rot N-lead	obsolete	obsolete	obsolete	
G012	Rotor set CW-rot K-lead	--	--	156166	
	" L-lead	162560	187500	--	
	" N-lead	096735	100420	099820	
G050	Shaft seal xRxx	192086	192088	192089	
	" xTxx	190810	190811	190812	
	" xVxx	192691	192692	192693	
	" A076	--	182238	182246	
	" A368	190810	190811	190812	
G053	Minor kit xTxx	189191	189193	189195	3
	" xVxx	189434	189435	189436	3
G054	Major kit=G012(G011)+G053+615				
G057	Joint kit				
	incl. ball bearing xTxx, xVxx	179614	179622	179630	3
	Joint kit xRxx	192090	192091	192092	
	excl. ball bearing xTxx, xVxx	191434	191435	191436	
122	Ball bearing	077453	078576	077461	
	" A090	191679	191681	--	
480	Valve housing	obsolete	obsolete	obsolete	2
5010	Front cover	153999	154039	154088	1
502	Tension pin Nxxx	027326	027326	027326	
612	Set screw	076711	076711	077214	
613	Tension pin	027276	027276	027284	
614	Valve piston	076729	076729	077222	
615	Valve spring xxxO	154419	154419	154427	
	" xxxP	154054	154054	154104	
S2	O-ring xTxx	190806	190807	190808	
S6	O-ring xTxx	190791	190793	190792	

Notes:

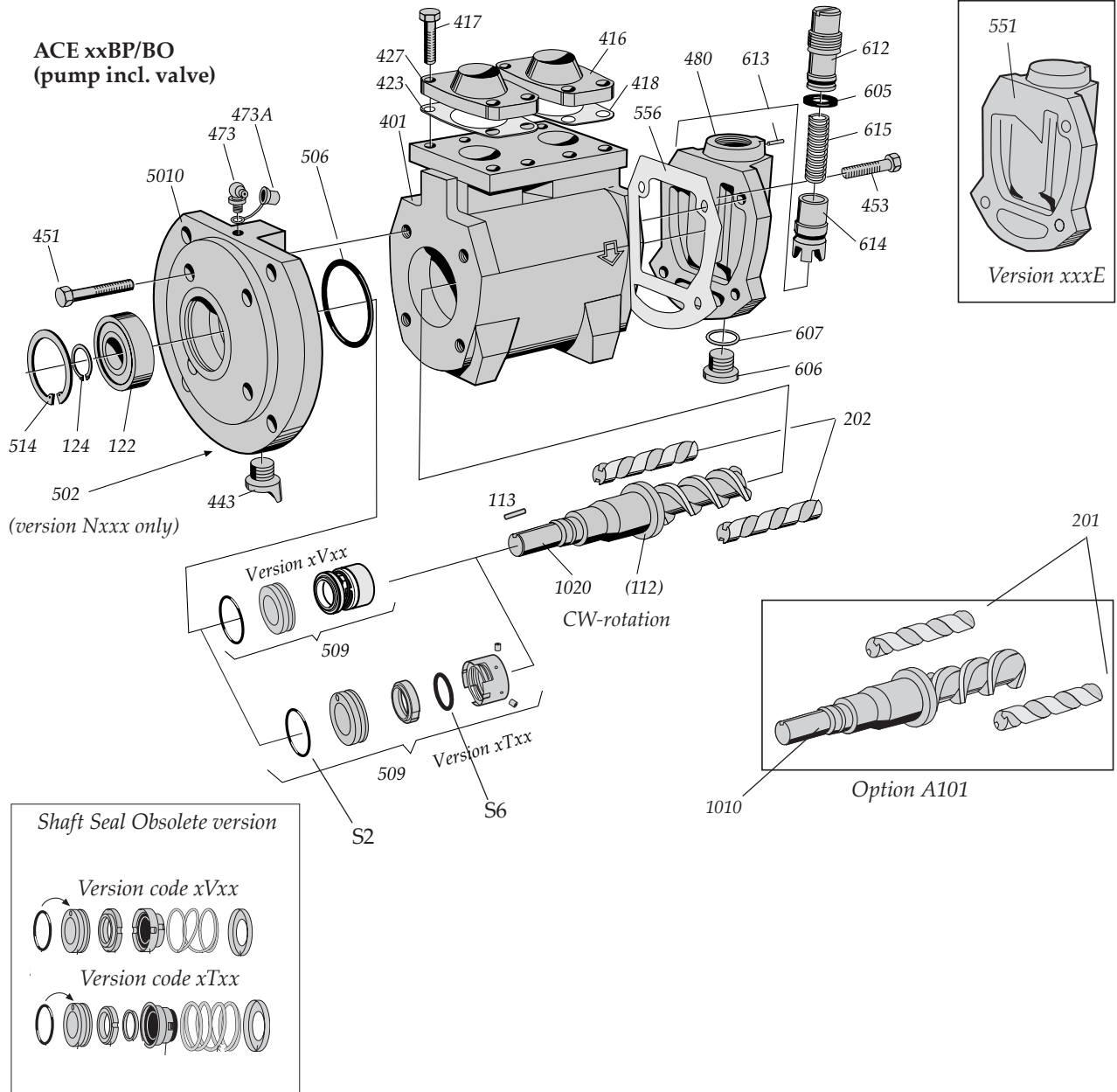
- 1) When ordering a front cover Nxxx, tension pin pos 502 should also be ordered.
- 2) Not valid for A020
- 3) Not valid for A090

Note:

Available spares for T4 valve block can be found under current products, ACE (D3/K3/L3/N3) Low pressure pumps.

Spares available up to end of 2017.

Exploded view



Spares available up to end of 2019.

List of components

Valid for all pumps in sizes: ACE 025/032/038 Rotor diameter and Generation: D3/K3/L3/N3

With version codes: N } K } B } P } The version code is composed of the letters in the 4 columns.

L }

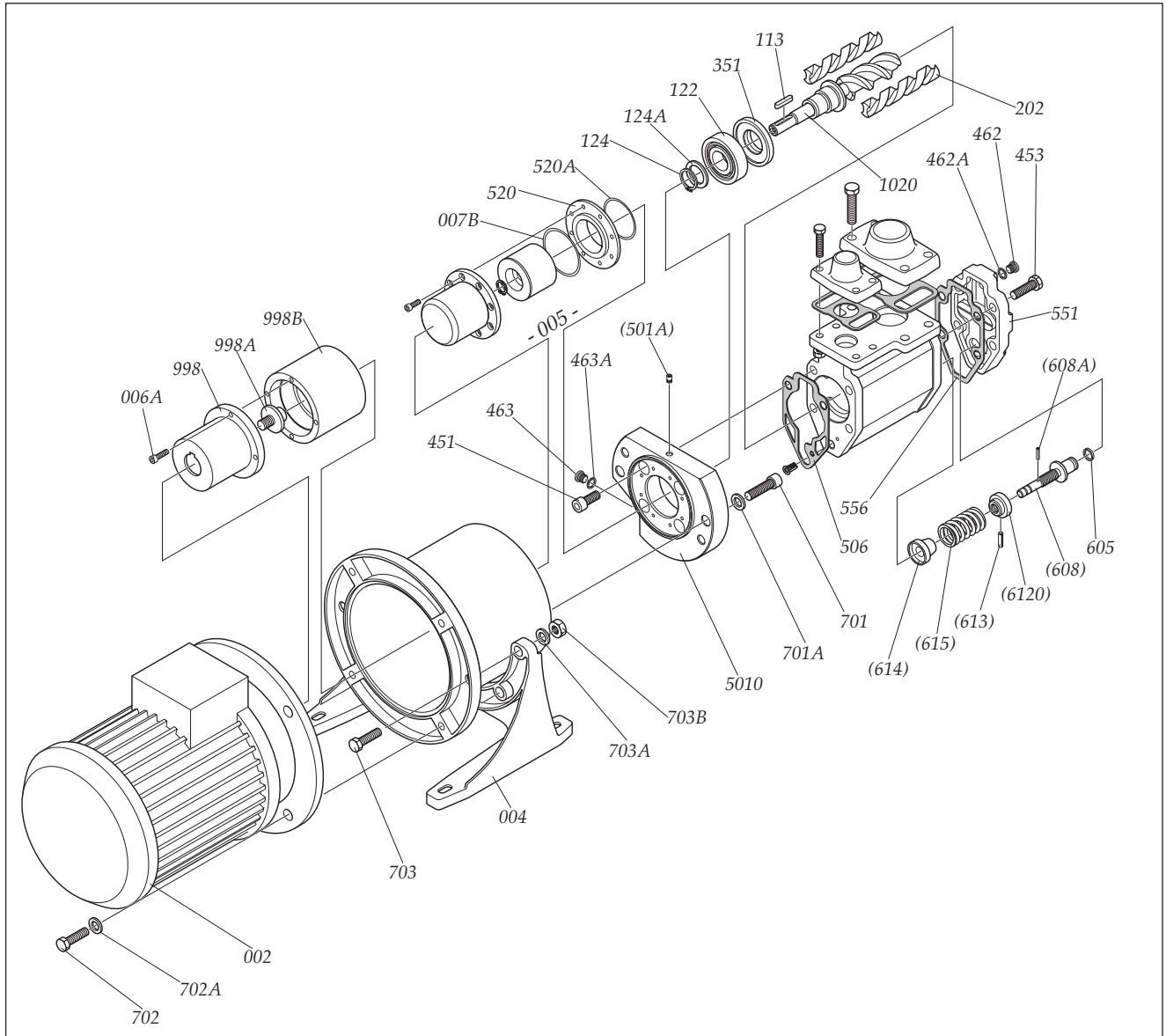
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Example of pump designations std: ACE 025L3 NKBP

Pos No	Denomination	Qty	Components included in spare parts set					Notes	Explanations:
			G012	G054	G057	G070	G098		
002	Motor	1							G012: Rotor set
003	Connecting frame	1							
004	Angle bracket	1							G054: Major kit
005	Magnetic coupling	1					x		
005A	Retaining ring	1		x	x			x	G057: Joint kit
006A	Screw	1							
007A	Screw	1							G070: Complete valve element
007B	O-ring	1		x	x			x	
1020	Power rotor	1	x	x					G098: Compl magnetic coupling
105	Nozzle	1	x	x				3	
112	Balancing piston	1	x	x				3	
113	Key	1	x	x					
122	Ball bearing	1	x	x					
124	Retaining ring	1	x	x					
124A	Support washer	1	x	x					
202	Idler rotor	2	x	x					
351	Balancing bush	1	x	x					
401	Pump body	1							Notes:
418	Gasket	1		x	x			1	
423	Gasket	1		x	x			1	1) Gaskets for counter flanges
440	Return valve	1							
451	Screw	1							2) Sizes 025-032 only
453	Screw	1							
462	Plug	1							3) Not sold separately
462A	Sealing washer	1		x	x				
463	Plug	1							
463A	Sealing washer	1		x	x				
5010	Front cover	1							
506	Gasket	1		x	x				
520	Cover	1						2	
520A	O-ring	1		x	x			2	
551	Rear cover	1							
556	Gasket	1		x	x				
605	O-ring	1		x	x	x			
608	Valve spindle	1				x		3	
608A	Tension pin	1				x		3	
6120	Set screw	1				x		3	
613	Pin	1				x		3	
614	Valve piston	1				x		3	
615	Valve spring	1				x		3	
701	Screw	2							
701A	Washer	2							
702	Screw	4							
702A	Washer	4							
703	Screw	3							
703A	Washer	3							
703B	Nut	3							
998	Drive hub	1							
998A	Washer	1							
998B	Screw	1							

Exploded view

Spares available up to end of 2019.



Ordering code

Item	Spare Parts sets	Part numbers for pump size			
		025	032	038	
G012	Rotor set	D-lead	--	--	193064
		K-lead	--	--	192246
	"	L-lead	192242	192244	-
	"	N-lead	192243	192245	192247
G054	Major kit	D-lead	--	--	193065
		K-lead	--	--	192252
	"	L-lead	192248	192250	--
	"	N-lead	192249	192251	192253
G057	Joint kit	192260	192261	192262	
G070	Valve element	189873	189873	189873	
G098	Magnetic coupling K	L	192254	192254	--
		L	192255	192255	192258
	"	M	--	192256	192259
122	Ball bearing	173765	173765	173591	
Tool H	Guide pins	193086	193086	193086	

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G054 Major kit

For repair after damage or greater wear.

G057 Joint kit

For dismantling the pump.

Ordering example:

For IMO-pump ACE 032N3 NKBP, serial number 456789:

Ball bearing pos 122 p/n 173765

Valve element pos G070 p/n 189873

Guide pins, Tool H, recommended for dismantling and assembling

Spares available up to end of 2018.

List of components

Valid for all ACF/UCF Generation 4 pumps with lead and sizes: 080/090/100 K4/N4; 110/125 L4/N4
with version codes: I } R } B } E } Also valid for pump options A020, A084, A087, A101.
N } V } F } O } The version code is composed of the letters in the 4 columns
P } Example of pump designations std: ACF 080N4 IRBO
option: ACF 100K4 NVBP A101

Pos No	Denomination	Qty	Components included in Spare parts sets:							Valid for N2F & N2F/60	Note
			G011	G012	G050	G053	G054	G057	G070		
1010	Power rotor (CCW-rot.)	1	x				(x)				
1020	Power rotor (CW-rot.)	1		x			x				
113	Key	1	x	x							
122	Ball bearing	1				x	x	(x)			8
123	Locking washer	1				x	x	(x)			8
124	Bearing nut	1				x	x	(x)			8
130	Support ring	1				x	x	x			
132	Retaining ring	1				x	x	x			
201	Idler rotor (CCW-rot.)	2	x				(x)				
202	Idler rotor (CW-rot.)	2		x			x				
401	Pump body	1									
424	Tuning cover	1									
424A	Gasket	1				x	x	x			
425	Screw	4									
429	Throttle spindle	1									
429A	Tension pin	1									
430	Piston	1									1
432	Tension pin	1									1
437	O-ring	1				x	x	x			
451	Screw	4-6									
453	Screw	8									
455	Screw	8									
462	Plug	1								x	
462A	Sealing washer	1				x	x	x		x	
463	Plug	1								x	
463A	Sealing washer	1				x	x	x		x	
480	Valve housing	1								x	5
501	Front cover	1									
506	O-ring	1				x	x	x		x	
509A	Rotating ring	1			x	x	x				2
509C	Rubber ring	1			x	x	x				
509D	Washer	1			x	x	x				
509E	Spring	1			x	x	x				
511	Seat	1			x	x	x				2
511A	O-ring	1			x	x	x				
520	Bearing disc	1									
521	Screw	4								x	
526	Grease nipple	1								x	7
526A	Protective cap	1								x	7
537	Deaeration plug	1									
537A	Washer	1									
551	Rear cover	1									3
556	Gasket	1				x	x	x		x	
601	Top cover	1							x	x	5
602	Gasket	2				x	x	x	x	x	5,6
605	O-ring	1				x	x	x	x	x	5
606	Bottom cover	1							x	x	5
608	Valve spindle	1							x	x	5
612	Regulating nut	1							x	x	5
613	Pin	1							x	x	5
6140	Valve piston	1							x	x	5
615	Valve spring	1							x	x	5
621	Wheel	1							x	x	5
622	Nut	1							x	x	5

ACF/UCF (K4/L4/N4) Low pressure pump
Obsolete product - Current ACF (K5/L5/N5) See section C



Spare parts book
 September 2016

Spares available up to end of 2018.

Pos No	Denomination	Qty	Components included in Spare parts sets:							Valid for N2F & N2F/60	Note
			G011	G012	G050	G053	G054	G057	G070		
622A	Key	1							x	x	5
623	Valve plate	1							x	x	5
636	Shock valve	0-2							x	x	4, 5
655	Washer	1							x	x	5
656	Sleeve	1							x	x	5
657	Spring	1							x	x	5
658	Distance sleeve	1							x	x	5

Explanations:

ACF: Pump with DIN flanges

UCF: Pump with ANSI flanges

A020: Surface-treated cast iron pump bodies.

A050: Unpainted pump

A084: Pump with lifetime ballbearing

A087: Combination of A101 + A084

A101: Nonstandard rotation: CCW (counter clockwise) CW-rotation is standard)

G011: Rotor set CCW-rot.

G012: Rotor set CW-rot.

G050: Complete shaft seal

G053: Minor kit

G054: Major kit

G057: Joint kit

G070: Valve element

Old designation

Current designation

ACF 80-3 N4F

ACF 080N4 IRBO

ACF 90-3 N4F 615B

ACF 090N4 IRBP

ACF 100-3 N4F A051

ACF 100N4 IVBO

ACF 110-3L N4F/Y

ACF 110L4 IRBO A020

ACF 125-3L N4F A101

ACF 125L4 IRBO A101

Obsolete pumps

N2F & N2F/60: (ACF only)

N2F & N2F/60 pump has different Shaft Seal, p/n for this seal can be found in the obsolete section: Shaft Seals for withdrawn pumps.

N3F: (ACF only)

Most parts are also valid for N3F-pumps. Should you however need new pump body item 401 - please order new ACF Gen. 5 pump.

Notes:

- 1) Valid for sizes 100 - 125
- 2) Delivered only as shaft seal G050
- 3) Valid for pump xxxE, item no 601 - 658, 480 excluded
- 4) Number of shock valves: size 080-090 :0
100-110: 1, 125: 2
- 5) Valid for pump xxxO/xxxP
- 6) On some older drawings is one pce noted as 602 and the other as 607.
- 7) Excluded in A084 & A087, replaced by a plugg.
- 8) New spare part set G057 excluding ball bearing, washer and nut introduced. Old set available during a transfer period. Part numbers, see ordering code.

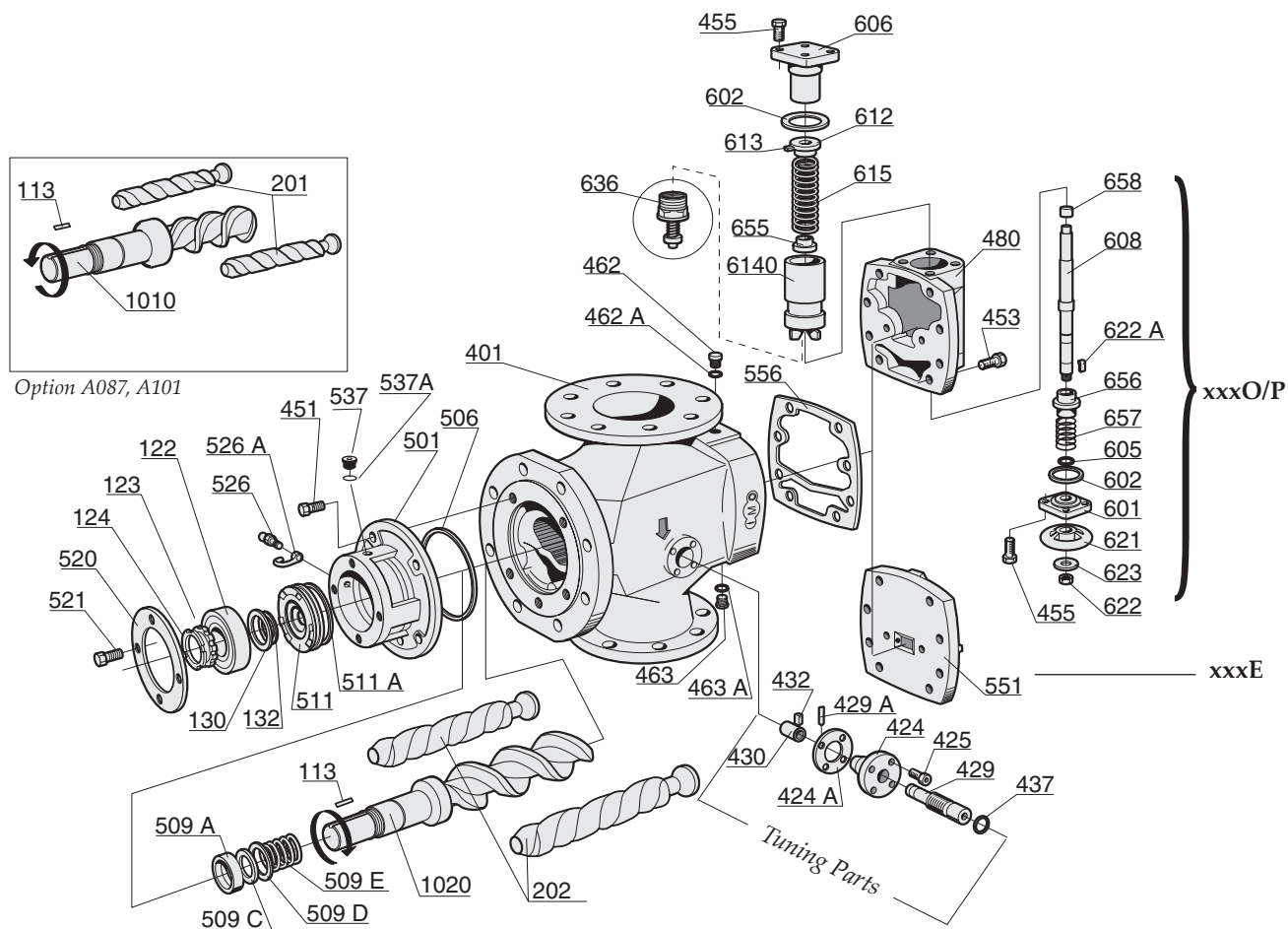
Spares available up to end of 2018.

Ordering code

Pos No	Spare Parts (set)		Part numbers for pump size					Note
			080	090	100	110	125	
G011	Rotor set	K-lead CCW-rot	189665	189666	189667	--	--	5
	"	L-lead	--	--	--	--	--	
	"	N-lead	188661	171249	175638	--	--	5
G012	Rotor set	K-lead CW-rot	187518	187526	187534	--	--	
	"	L-lead	--	--	--	105452	105478	
	"	N-lead	105411	105429	105437	105445	105460	
G050	Shaft seal	xRxx	105486	105494	105502	105502	105502	
	"	xVxx	175562	183467	175570	175570	175570	
G053	Minor kit	N3E/N3F (xRxx)	191593	191595	191597	191599	192276	4
	"	N4 xRxx	191593	191595	191597	191599	191601	4,8
	"	N4 xVxx	191594	191596	191598	191600	191602	4,8
G054	Major kit=G012(G011)+G053+615							
G057	Joint kit	N4 xRxx incl ball bearing	183335	183350	183376	183392	183418	4,8
	"	xVxx - " -	183343	183368	183384	183400	183426	4,8
	"	N3_ xRxx excl ball bearing	191412	191414	191416	191418	192275	
	"	N4 - " -	191412	191414	191416	191418	191420	8
	"	xVxx - " -	191413	191415	191417	191419	191421	8
G070	Valve element	IRxO	066092	066092	066704	066704	067363	1
	"	IRxP	189662	189662	189663	189663	189664	1
	"	IVxO	191564	191564	191566	191566	191568	
	"	IVxP	191565	191565	191567	191567	191569	
122	Ball bearing		104257	104356	017293	017293	017293	4
	"	A084/A087	017251	159459	188141	188141	188141	6
123	Locking washer		017483	104364	094805	094805	094805	
124	Nut		017475	104372	094797	094797	094797	
424	Tuning cover		154658	154658	154658	154658	154658	
424A	Gasket		154666	154666	154666	154666	154666	
425	Screw		124636	124636	124636	124636	124636	
429	Throttle spindle		159038	159038	154674	154674	154674	
429A	Tension pin		158337	158337	158337	158337	158337	
430	Piston		--	--	159046	159046	158311	
432	Tension pin		--	--	179127	179127	179127	
437	O-ring	xRxx	015933	015933	015933	015933	015933	
	"	xVxx	016709	016709	016709	016709	016709	
480	Valve housing	Ixxx	088039	088039	088047	088047	088054	1
506	O-ring	N3E/N3F (xRxx)	016444	016477	016493	016519	016519	
	"	N3E/N3F A051 (xVxx)	016972	164293	160697	152868	152868	
	"	N4 xRxx	016444	016477	016493	016519	016527	8
	"	N4 xVxx	016972	164293	160697	152868	117325	8
509C	Rubber ring	xRxx	012765	012815	012948	012948	012948	
	"	xVxx	012781	012831	076745	076745	076745	
556	Gasket		021386	021386	021717	021717	021873	1
608	Valve spindle		046581	046581	048967	048967	051243	1
614	Valve piston		046599	046599	048975	048975	051250	1
615	Valve spring	xxxO	021451	021451	021766	021766	022061	1
	"	xxxP	021352	021352	021774	021774	022079	1
657	Spring		090654	090654	090662	090662	090670	1
	Name plate		169870	169870	169870	169870	169870	
	Grease gun		188824	188824	188824	188824	188824	4

Spares available up to end of 2018.

Exploded view



Recommendation

For maintenance the following spare parts kits are recommended:

Set *To be used:*

G057 **Joint kit**
 For dismantling of the pump

G053 **Minor kit**
 For service

G054 **Major kit**
 For repair after damage or greater wear

Ordering example:

For IMO-pump ACF 080N4 IRBO
 serial number 456789:
 Minor kit G053, p/n 078576

Notes:

- 1) Also valid for pump N2F & N2F/60
- 2) Also valid for pump N3F but above tuning parts must be ordered. The pump will then, with the change of pump body, be upgraded to form N4.
- 4) Not valid for A084 and A087.
- 5) Valid for A087 & A101
- 6) Valid for A084 & A087
- 7) Production is discontinued, components may still be available in stock, please contact IMO AB.
- 8) Size 125: Pumps in generation N4 delivered during 1985-summer 1986 have the old N3 (smaller) o-ring.
 p/n nitrile 016519 / viton 152868 (size 209,3x5,7)
 All N4-pumps delivered since summer 1986 are equipped with the current bigger o-ring
 p/n nitrile 016527/ viton 117325 (size 219,3x5,7)

Spares available up to end of 2017

List of components

Valid for all pumps in sizes: ACG 045/052/060/070. Rotor diameter & Generation N2/N3/N4

With version code: I } V } B } E } Also valid for pump options: A101
N } F } G } The version code is composed of the letters in the 4 columns.
Y } O } Example of pump designations
P } ACG 045N3 IVBP; option 052N4 NVBO A101

Pos No	Denomination	Qty	Components included in Spare parts set:							Valid for model N2F & N2F/60	Note
			G011	G012	G050	G053	G054	G057	G070		
1010	Power rotor	1	x				(x)		x		
1020	Power rotor	1		x				x	x		
106	Balancing piston	1	x	x				x	x		
114	Pin	1	x	x				x	x		
115	Sealing washer	1			x	x		x	x		
120	Distance sleeve	1									
122	Ball bearing	1				x	x	(x)		4	
124	Retaining ring	1	x	x		x	x	x	x		
124A	Support ring	1	x	x		x	x	x			
169	O-ring	1			x	x		x	x		
201	Idler rotor	2	x					(x)	x		
202	Idler rotor	2		x				x	x		
359	Distance washer	1									
359A	Nilos- ring	1				x	x	x			
401	Pump body	1									
451	Screw	4/6									
453	Screw	4									
462	Plug	2								1	
462A	Sealing washer	2				x	x	x	x	1	
473	Grease nipple	1									
473A	Plastic plug	1									
480	Valve housing	1							x	2	
5010	Front cover	1									
502	Tension pin	1							x		
506	Joint	1				x	x	x	x		
509A	Sealing bush	1			x	x	x		x		
509B	O-ring	1			x	x	x		x		
509D	Cup	1			x	x	x		x		
509E	Washer	1			x	x	x		x		
509F	Spring	2			x	x	x		x		
514	Retaining ring	1						x	x		
551	Rear cover	1								3	
556	Joint	1				x	x	x	x		
601	Valve cover, upper	1							x		
602	Seal ring	1				x	x	x	x		
605	O-ring	1				x	x	x	x		
606	Valve cover, lower	1							x		
607	Seal washer	1				x	x	x	x		
608	Valve spindle	1							x		
612	Regulating nut	1							x		
614	Valve piston	1							x		
615	Valve spring	1						x	x		
621	Hand wheel	1							x		
622	Tension pin	1							x		
631	Spring seat	1							x		

Explanations:

ACG: Pump with DIN-Flanges
UCG: Pump with ANSI-Flanges
A101: Nonstandard rotation: CCW (counter clockwise). CW-rotation is standard)
G011: Rotor set
G012: Rotor set
G050: Shaft seal
G053: Minor kit (G050 + G057)
G054: Major kit consisting of: G012+ G050+ G057+615
G057: Joint kit
G070: Valve element

Obsolete pumps:

N2F and N2F/60:
Available parts are noted
Replacement pump is N4 NVBP (or N7 NVBP)
"N3" always "Ixxx"
(or "Yxxx") "N4" always ""Nxxx"

The ACG N2/N3/N4 are replaced by ACG K7/N7. See section C

Notes:

- 1) Valid for xxxE and xxxP/O
- 2) Valid for xxxG and xxxP/O
- 3) Valid for xxxE
- 4) A new spare part set G057 excluding ball bearing is introduced. Old set is available during a transitional period. Part numbers, see ordering code.

Old designation

ACG45-2 N3F
ACG52-2 N3F 615A
ACG60-2 N3G
ACG70-2 N3E
ACGxx-2 N3F/Y

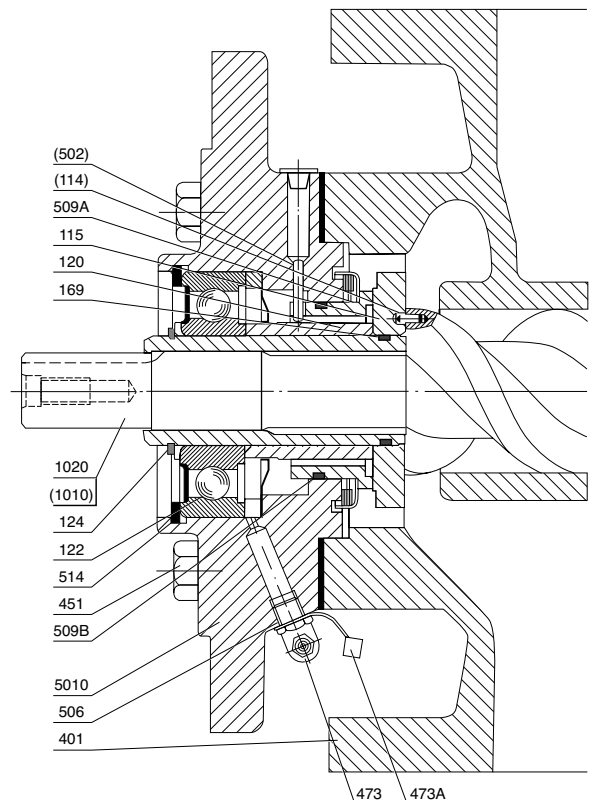
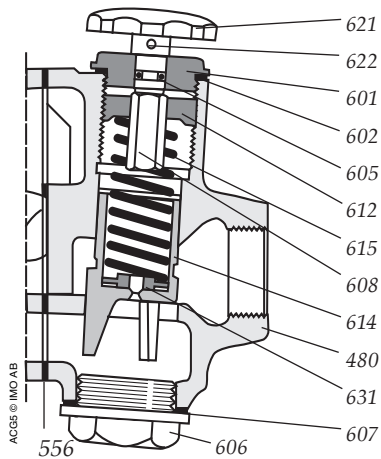
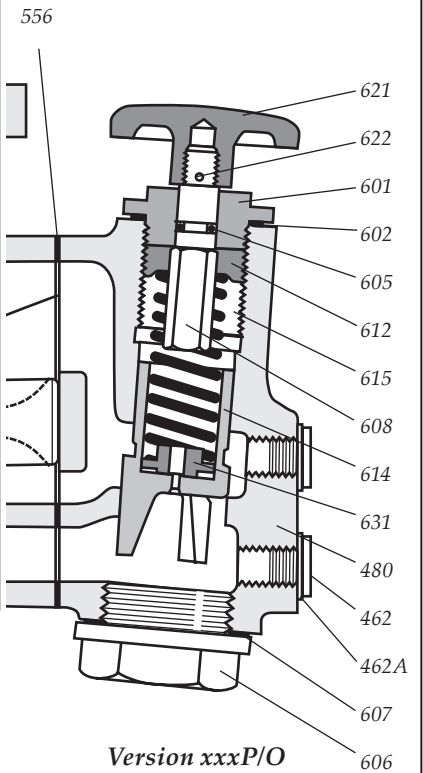
Current designation

ACG 045N3 IVBP
ACG 052N3 IVBO
ACG 060N3 IVBG
ACG 070N3 IVBE
ACG xxxN3 YVBP

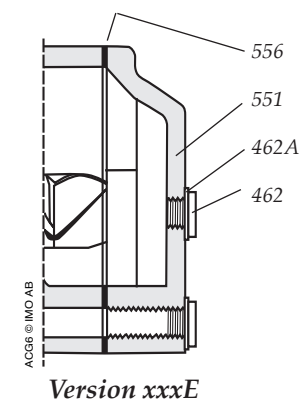
Spares available up to end of 2017

Ordering code

Pos No	Spare parts (set)	Part numbers for pump size				Valid for N2F & N2F/60
		045	052	060	070	
G012	Rotor set CW-rot	131177	131185	131193	131201	x
G050	Shaft seal	069633	069641	069658	069666	x
G053	Minor kit = G050+G057					
G054	Major kit = G012+G050+G057+615					
G057	Joint kit Ixxx	185736	185751	185777	185793	
	Incl ball bearing Nxxx/Yxxx	185744	185769	185785	185801	
	" excl ball bearing (all)	191426	191427	191428	191429	
G070	Valve element xxxG/xxxP	077933	077933	077941	077941	x
120	Distance sleeve	123505	123539	123588	123612	
122	Ball bearing Ixxx	123885	123703	123760	104257	
	" Nxxx/Yxxx	076075	076083	153882	157461	
359	Distance washer	123497	123547	123570	123620	
480	Valve housing	obsolete	obsolete	obsolete	obsolete	x
5010	Front cover	obsolete	obsolete	obsolete	obsolete	
502	Tension pin	027367	027367	027367	027367	x
509C	Spring set (509D+E+F)	077396	077404	077412	077420	x
514	Retaining ring	027177	027193	027227	027235	
608	Valve spindle	039743	039743	039743	039743	x
614	Valve piston	039768	039768	043083	043083	x
615	Valve spring xxxO	157370	157370	157388	157388	x
	" xxxG/xxxP	074294	074294	074302	074302	x
631	Spring seat	039784	039784	043091	043091	x



Version xxxG



ACG6 © IMC AB

ACG5 © IMC AB

Spares available up to end of 2017

List of components

Valid for all pumps in sizes: ACG/UCG 045/052/060/070; Rotor diameter & Generation: K5/N5

With version codes: I } T } B } E } Also valid for pump options: A101, A327

N } V } F } G } Example of pump designations

O } std: ACG 045N5 IVBP; option ACG 070N5 IVBO A101

P }

Pos No	Denomination	Qty	Components included in Spare parts sets:							Note
			G011	G012	G034	G050	G053	G054	G057	
1010	Power rotor CCW-rot	1	x						(x)	
1020	Power rotor CW-rot	1		x					x	
106	Balancing piston	1	x	x					x	6
113	Shaft key	1	x	x					x	
120	Distance sleeve	1								
122	Ball bearing	1					x	x	(x)	9
124	Retaining ring	1					x	x	x	
124A	Support ring	1					x	x	x	
133	Dust protection ring	1					x	x	x	
201	Idler rotor CCW-rot.	2	x						(x)	
202	Idler rotor CW-rot.	2		x					x	
359	Distance washer	1								
359A	Support ring	1					x	x	x	
401	Pump body	1								
424	Sleeve	1								4
424A	Washer	1								4
429	Spindle	1								4
437	O-ring	1								4
451	Screw	4/6								
453	Screw	4								
462	Plug	2								1
462A	Sealing washer	2					x	x	x	1
463	Plug	1								8
463A	Sealing washer	1								8
473	Grease nipple	1								
473A	Grease nipple cover	1								
480	Valve housing	1								2
5010	Front cover	1			x					
502	Tension pin	1								7
502A	Plug	1								7
506	Gasket	1					x	x	x	
509	Shaft seal	1			x		x	x		
514	Retaining ring	1					x	x	x	
520	Cover	1								
520A	Screw	4								
537	Plug	1			x					
537A	Sealing washer	1			x					
540	Steel ball	1			x					5
541	Spring	1			x					5
542	Screw nozzle	1			x					5
545	Tension pin	1								7
551	Rear cover	1								3
556	Gasket	1					x	x	x	
601	Valve cover	1								x 2
602	Sealing washer	1					x	x	x	x 2
605	O-ring	1					x	x	x	x 2
606	Valve housing plug	1								x 1,2
607	Sealing washer	1					x	x	x	x 1,2
608	Valve spindle	1								x 2
612	Set screw	1								x 2
614	Valve piston	1								x 2
615	Valve spring	1						x		x 2
621	Set knob	1								x 2
622	Locking pin	1								x 2
631	Spring seat	1								x 2

Explanations:

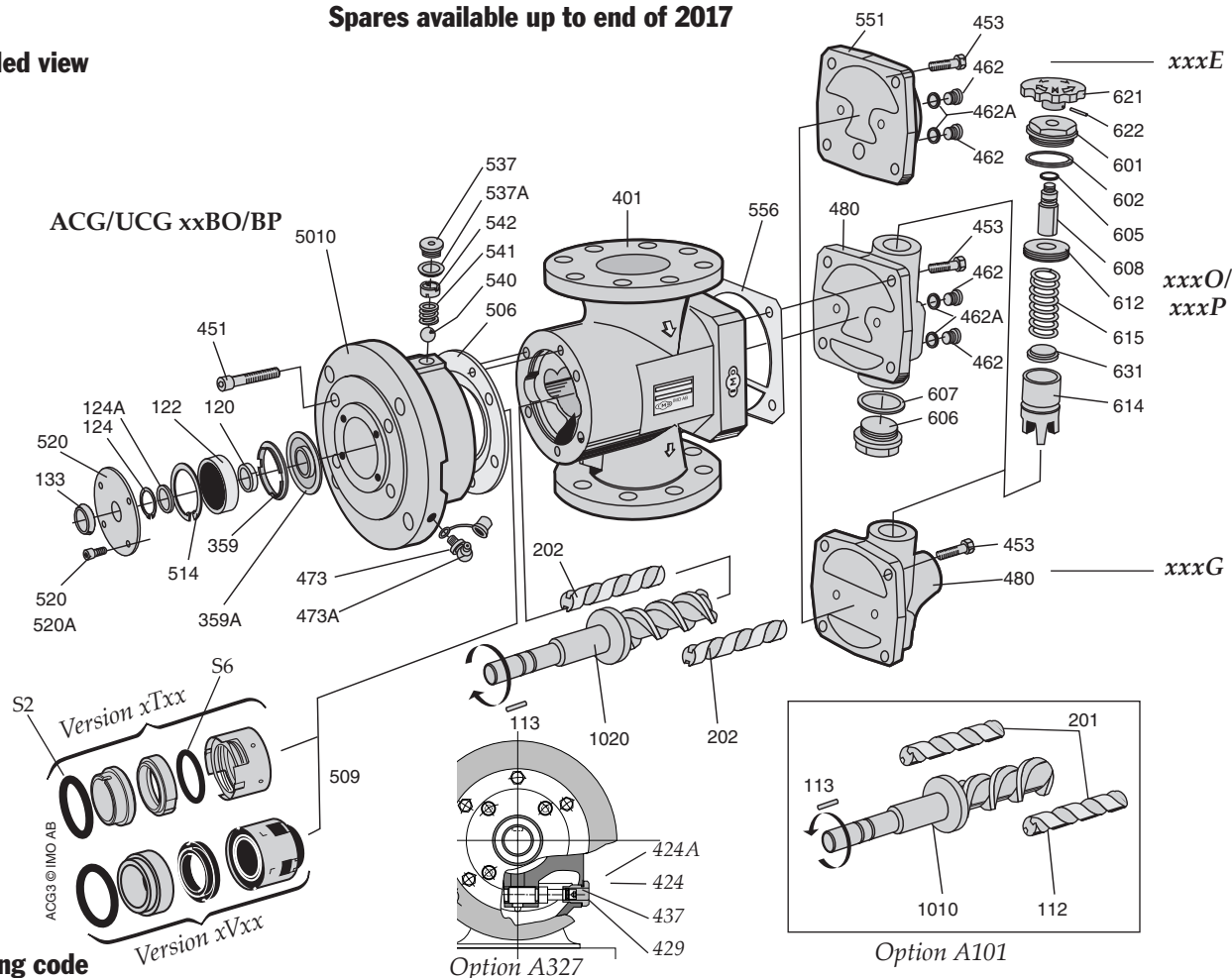
- ACG: Pump with DIN flanges
- UCG: Pump with ANSI flanges
- A101: Nonstandard rotation: CCW (counter clockwise). CW-rotation is standard)
- A327: Pump with Tuning
- G011: Rotor set CCW-rotation option
- G012: Rotor set CW-rotation (std)
- G034: complete front-cover
- G050: Shaft seal
- G053: Minor kit
- G054: Major kit consisting of: G053+G012 (G011)+615
- G057: Joint kit
- G070: Valve element

Notes:

- 1) Excluded in xxxG
- 2) Excluded in xxxE
- 3) Valid for xxxE
- 4) Valid for pump option A327
- 5) Valid for generation 5
- 6) Included in item 1020 or 1010
- 7) Included in item 5010
- 8) Items 463 & 463A have been removed from pumps manufactured from summer 1992 and onwards
- 9) A new spare part set G057 excluding ball bearing is introduced. Old set is available during a transition period. Part numbers, see Ordering code

Spares available up to end of 2017

Exploded view



Ordering code

Pos No	Spare parts (set)	Part numbers for pump size				
		045	052	060	070	
G011	Rotor set CCW-rot	K-lead	189641	189642	189643	189644
	"	N-lead	186478	186486	186494	186502
G012	Rotor set CW-rot	K-lead	187542	187559	187567	187575
	"	N-lead	178913	179507	179515	179523
G034	Front cover	obsolete	obsolete	obsolete	obsolete	obsolete
G050	Shaft seal	xTxx	174094	174102	174110	174128
	"	xVxx	190335	190336	190338	190340
G053	Minor kit	xTxx	189197	189199	189201	189203
	"	xVxx	189196	189198	189200	189202
G054	Major kit=G012(G011)+G053+615					
G057	Joint kit incl ball bearing		179531	179549	179556	179564
	Joint kit excl ball bearing		191422	191423	191424	191425
G070	Valve element	xxxG/xxxP	077933	077933	077941	077941
	"	xxxO	189622	189622	189645	189645
120	Distance sleeve		173112	172908	173575	173237
122	Ball bearing	Ixxx/Yxxx	173757	017178	155523	017194
	"	Nxxx	173757	173765	173591	173260
133	Dust protection ring		173138	172981	173609	173278
359	Distance washer		173161	172916	173542	173245
480	Valve housing	obsolete	obsolete	obsolete	obsolete	obsolete
502	Tension pin		027367	027367	027367	027367
537A	Sealing washer		010975	010975	010975	010975
608	Valve spindle		039743	039743	039743	039743
614	Valve piston		039768	039768	043083	043083
615	Valve spring	xxxG/xxxP	074294	074294	074302	074302
	"	xxxO	157370	157370	157388	157388
631	Spring seat		039784	039784	043091	043091
S2	O-ring	xTxx	190806	190792	190807	191513
S6	O-ring	xTxx	190791	191515	191516	191517

Recommendation:

For maintenance the following spare part sets are recommended:

Set: To be used:

G057 Joint kit

For dismantling of the pump

G053 Minor kit

For service

G054 Major kit

For repair after damage or greater wear.

Pumps for HFO application should be replaced by our ACG OptiLine, magnetic coupled pump. Pump duty required for correct selection.

Ordering example:

For IMO-pump ACG 045N5 IVBP, serial number 457450

Shaft seal
 pos G050 p/n 190335

Valve spring
 pos 615 p/n 074294

Spares available up to end of 2017

List of components

Valid for all pumps in sizes: ACG/UCG 045/052/060/070; Rotor diameter and generation: K6/N6

With version codes: I } T } B } E } The version code is composed of the letters in the 4 columns
N } V } F } O } Also valid for pump options: A020, A101, A327
R } P } Example of pump designations
G } std: ACG 045N6 IVBP; option ACG 070N6 IVBO A101

Pos No	Denomination	Qty	Components included in Spare parts sets:							Note
			G011	G012	G050	G053	G054	G057	G070	
1010	Power rotor CCW-rot.	1	x					(x)		
1020	Power rotor CW-rot.	1		x				x		
106	Balancing piston	1	x	x				x	5	
113	Shaft key	1	x	x				x		
120	Distance sleeve	1								
122	Ball bearing	1				x	x	(x)	7	
124	Retaining ring	1				x	x	x		
124A	Support ring	1				x	x	x		
133	Dust protection ring	1				x	x	x		
201	Idler rotor CCW-rot.	2	x					(x)		
202	Idler rotor CW-rot.	2		x				x		
359	Distance washer	1								
359A	Support ring	1				x	x	x		
401	Pump body	1								
424	Sleeve	1							4	
424A	Washer	1							4	
429	Spindle	1							4	
437	O-ring	1							4	
440	Return valve	1								
451	Screw	4/6								
453	Screw	4								
462	Plug	2							1	
462A	Sealing washer	2				x	x	x	1	
473	Grease nipple	1								
473A	Grease nipple cover	1								
480	Valve housing	1							2	
5010	Front cover	1								
502	Tension pin	1							6	
502A	Plug	1							6	
506	Gasket	1				x	x	x		
509	Shaft seal	1			x	x	x			
514	Retaining ring	1				x	x	x		
520	Cover	1								
520A	Screw	4								
537	Plug	2								
537A	Sealing washer	2								
545	Tension pin	1							6	
551	Rear cover	1							3	
556	Gasket	1				x	x	x		
601	Valve cover	1						x	2	
602	Sealing washer	1				x	x	x	2	
605	O-ring	1				x	x	x	2	
606	Valve housing plug	1						x	2	
607	Sealing washer	1				x	x	x	2	
608	Valve spindle	1						x	2	
608A	Retaining ring	1						x	2	
612	Set screw	1						x	2	
614	Valve piston	1						x	2	
615	Valve spring	1					x	x	2	
631	Spring seat	1						x	2	

Explanations:

ACG: Pump with DIN flanges
UCG: Pump with ANSI flanges
A020: Surface-treated cast iron pump bodies.
A101: Nonstandard rotation: CCW (counter clockwise). CW-rotation is standard)
A327: Pump with Tuning
G011: Rotor set CCW-rotation option
G012: Rotor set CW-rotation (std)
G050: Shaft seal
G053: Minor kit (G050 + G057)
G054: Major kit consisting of: G053 + G012 (G011) + 615
G057: Joint kit
G070: Valve element

Notes:

- 1) Excluded in xxxG
- 2) Excluded in xxxE
- 3) Valid for xxxE
- 4) Valid for pump option A327
- 5) Included in item 1020 or 1010
- 6) Included in item 5010
- 7) A new spare part set G057 excluding ball bearing is introduced. Old set is available during a transition period. Part numbers, see Ordering code

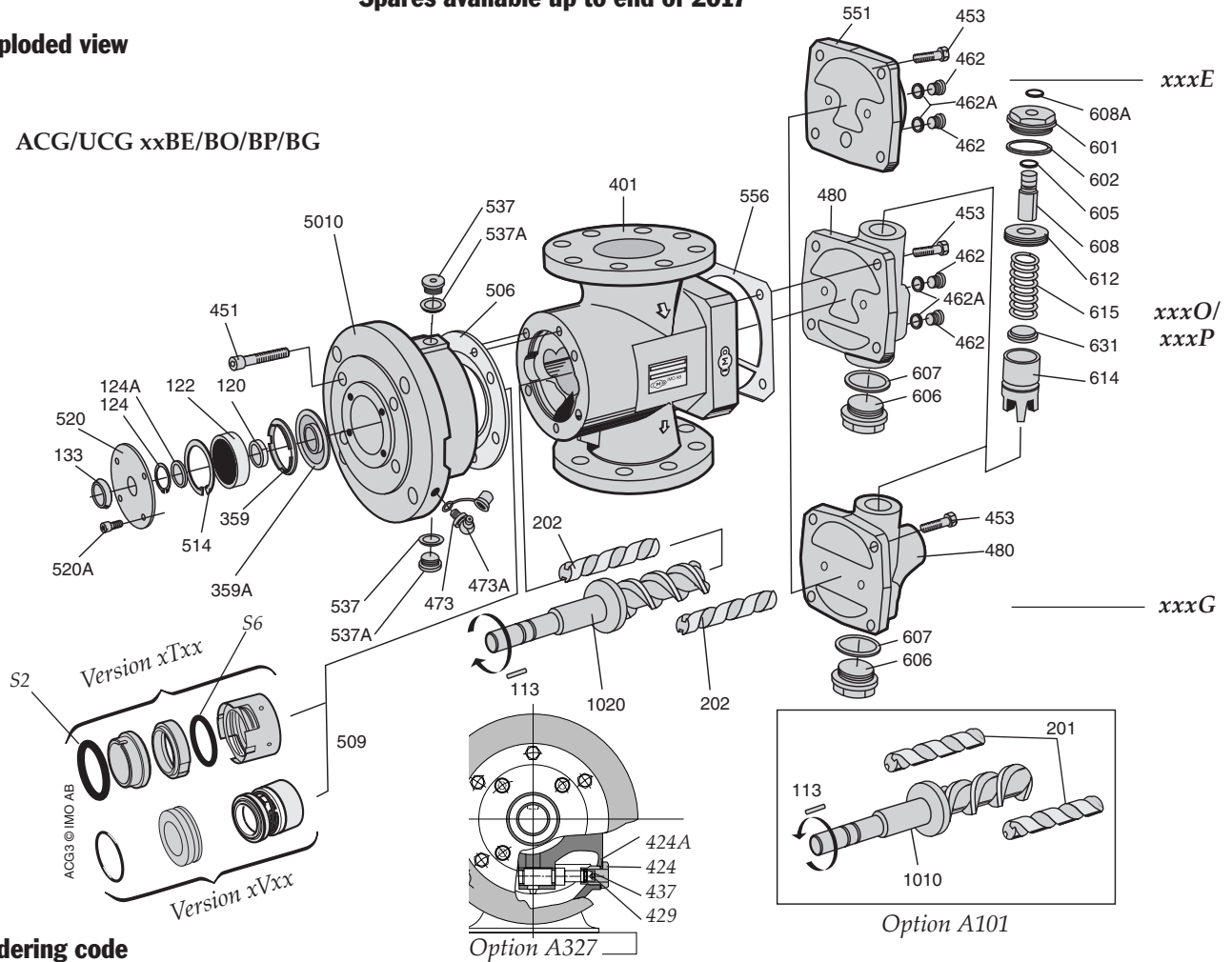
Please note:

ACG K6/N6 are replaced by K7/N7, see section C.

Spares available up to end of 2017

Exploded view

ACG/UCG xxBE/BO/BP/BG



Ordering code

Pos No	Spare parts (set)	Part numbers for pump size				
		045	052	060	070	
G011	Rotor set CCW-rot	K-lead	189641	189642	189643	189644
	"	N-lead	186478	186486	186494	186502
G012	Rotor set CW-rot	K-lead	187542	187559	187567	187575
	"	N-lead	178913	179507	179515	179523
G050	Shaft seal	xTxx	174094	174102	174110	174128
	"	xVxx	190335	190336	190338	190340
G053	Minor kit	xTxx	189197	189199	189201	189203
	"	xVxx	189196	189198	189200	189202
G054	Major kit=G012(G011)+G053+615					
G057	Joint kit incl ball bearing		179531	179549	179556	179564
	"- excl ball bearing		191422	191423	191424	191425
G070	Valve element	xxxG/xxxP	190201	190201	190202	190202
	"	xxxO	190200	190200	190203	190203
120	Distance sleeve		173112	172908	173575	173237
122	Ball bearing		173757	173765	173591	173260
133	Dust protection ring		173138	172981	173609	173278
359	Distance washer		173161	172916	173542	173245
480	Valve housing		obsolete	obsolete	obsolete	obsolete
5010	Front cover		obsolete	obsolete	obsolete	obsolete
502	Tension pin		027367	027367	027367	163956
537A	Sealing washer		010975	010975	010975	010975
608	Valve spindle		190002	190002	190002	190002
614	Valve piston		039768	039768	043083	043083
615	Valve spring	xxxG/xxxP	074294	074294	074302	074302
	"	xxxO	157370	157370	157388	157388
631	Spring seat		039784	039784	043091	043091
S2	O-ring	xTxx	190806	190792	190807	191513
S6	O-ring	xTxx	190791	191515	191516	191517

Recommendation:
 For maintenance the following spare part sets are recommended:
Set: To be used:
G057 Joint kit
 For dismantling of the pump
G053 Minor kit
 For service
G054 Major kit
 For repair after damage or greater wear.
 Pumps for HFO application should be replaced by our ACG OptiLine, magnetic coupled pump. Pump duty required for correct selection.

Ordering example:
 For IMO-pump ACG 045N6 IVBP, serial number 496890
 Shaft seal
 pos G050 p/n 190335
 Valve spring
 pos 615 p/n 074294

List of components

Pos No	Denomination	Qty	Mounting form		Spare parts sets:					Note	
			NMH 65G	NMS 65G	11G	12G	20G	50G	90G		
101	Power rotor CCW-rot	1			x					(x)	
102	Power rotor CW-rot.	1				x				x	
103	Ball	1			x	x				x	
104	Spring	1			x	x				x	
105	Hole screw	1			x	x				x	
106	Balancing piston	1			x	x				x	
120	Distance sleeve	1								x	
120A	O-ring	1								x	3,4
120A	Distance sleeve	1								x	1
122	Ball bearing	1								x	
122A	Nilos ring	1								x	3,4
123	Locking washer	1								x	
124	Bearing nut	1								x	
139	Sealing washer	1							x	x	2
140	O-ring	1							x	x	
2010	Idler rotor (CCW-rot)	2			x					(x)	
2020	Idler rotor (CW-rot)	2				x				x	
209	Tension pin incl in 20x0	2			x	x				x	
211	Thrust collar incl in 20x0	2			x	x				x	
301	Sleeve	1						x		x	
307	Screw	4							x	x	
329	O-ring	1						x		x	
340	Mandrel	1						x		x	6
341	Flange	1									3
341A	Joint	1									3
355	Screw incl in 4010	2									
382	Screw	4								x	
382A	Washer	4								x	
390	Distance tube	4								x	
391	Bearing plate	1								x	
4010	Pump body	1									
423	O-ring	1									5
453	Screw	4+4	x	x				x		x	
453A	Nut	4+4						x		x	
460	Pin	2									3,4
462	Plug, sizes 080-090 only	1	x								
463	Plug	1									
463A	Washer	1									
502	Tension pin incl in 5110	1								x	2
509A	Sealing bush	1							x	x	2
509B	O-ring	1							x	x	2
509C	Spring	2							x	x	2
509D	Washer	1							x	x	2
5110	Gland	1								x	2
511A	O-ring	1								x	2
520	Washer	1									
521	Screw	4									
527	Sealing cover	1								x	
529	V-ring	1								x	3,4
551	Inlet chamber	1	x	x							
556	O-ring	1	x	x							

Explanations:

65G: Inlet chamber
11G: Rotor set (CCW-rot, non std)
12G: Rotor set (CW-rot, std)
20G: Sleeve element
50G: Shaft seal
90G: Pump element

Valid for pumps:

ALB xx-4 NM (normal lead)
xx-4B NM (low lead)
xx-4H NM (high lead)

Pumps incl inlet chamber:

NMH (radial inlet)
NMS (axial inlet)

Valid for pump options:

N (submerged ver. excl shaft seal)
NM/101
NM/101/52
NM/101/341/52
NM/101/401A/52
NM/101/401B/52
NM/401A/52
NM/52

101: CCW-rotation

52: Cast iron parts unpainted and all O-rings in Viton

341: Pump with special pump casing and special flange

401A: Pump with special pump casing

401B: Pump with special pump casing

*** ALB pumps and their spares are obsolete. Shaft seals and those parts which are identical to those in the corresponding ALG pump are still available, please contact IMO.**

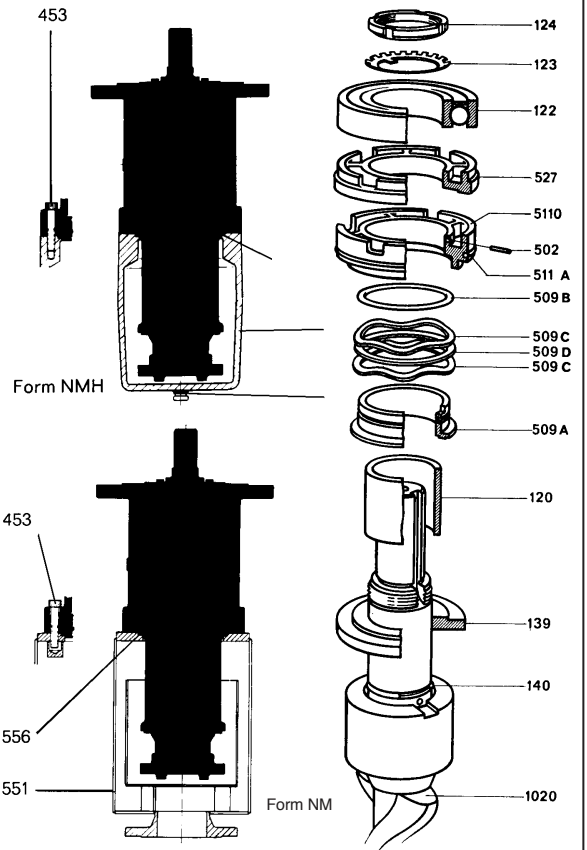
Notes:

- 1) Included in form N only.
- 2) Included in form NM only.
- 3) Included in option NM 101/341/52 only.
- 4) Included in option NM 101/401A/52 only. Also valid for form NM 101/401B/52 except item 460 which is excluded on this pump.
- 5) Included in the SAE counter flange (outlet).
- 6) The mounting mandrel is delivered together with all 20G and 90G elements to facilitate the mounting.

Ordering code

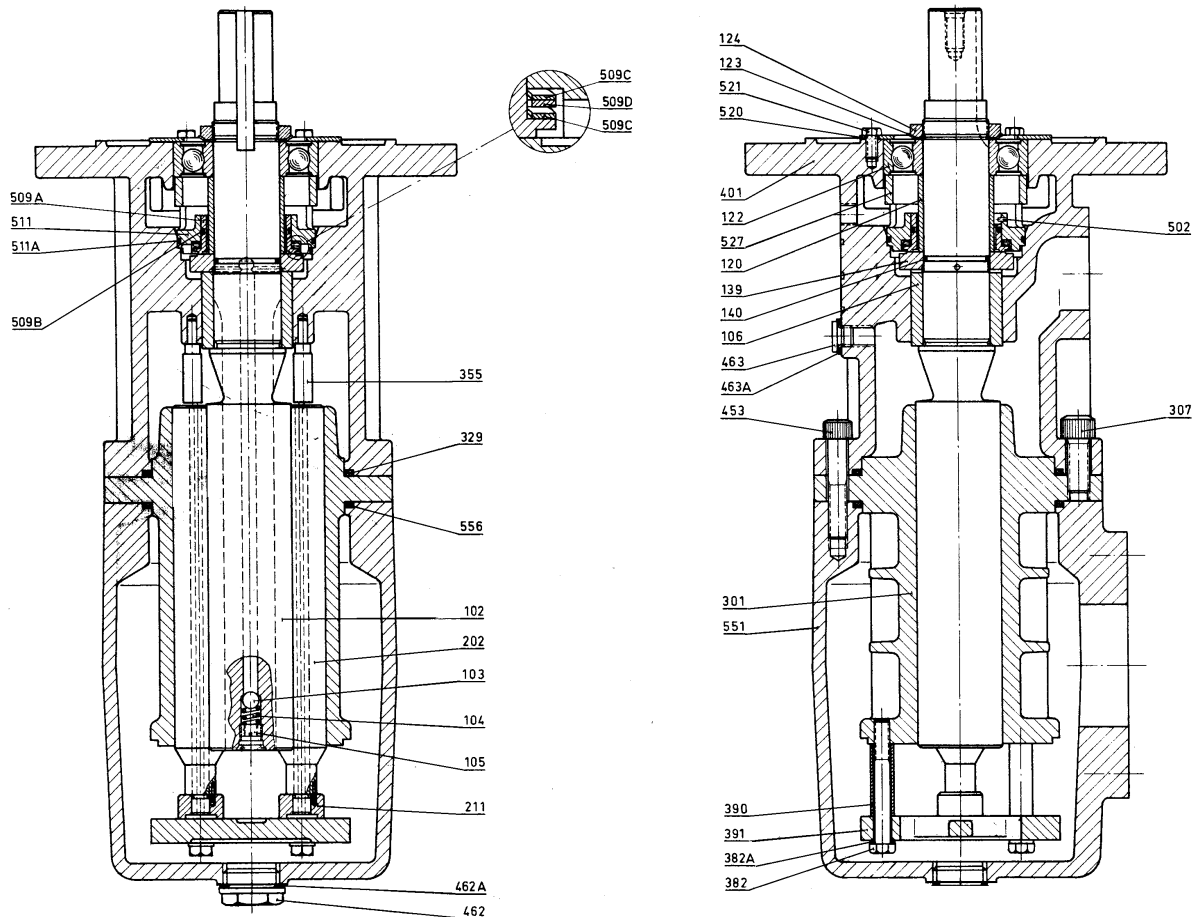
Pos No	Spare parts (set)		p/n for pump size		Note
			080	090	
50G	Shaft seal	NM	070623	070623	
140	O-ring		016824	016824	
329	O-ring		016501	016501	
423	O-ring		016097	016097	
509B	O-ring		016873	016873	
511A	O-ring		016931	016931	
556	O-ring		016501	016501	

Assembly drawing



Figur 4

Shaft seal for sizes 60-70, please see list obsolete shaft seals for withdrawn pumps



List of components

Valid for all pumps in sizes: ALG 080, 090, 100 & 110; Rotor diameter and generation: B3/N3

With version codes: N } V } B } I }

C }
J }

The version code is composed of the letters in the 4 columns.

Also valid for pump options: A021

Example of pump designations

std: ALG 080N3 NVBI; option ALG 110N3 NVCI A021

Pos No	Denomination	Qty	Mounting form		Spare parts sets:						
			xxBx	xxJx	G012	G020	G050	G053	G054	G057	G090
1020	Power rotor CW-rot.	1			x				x		x
103	Ball	1			x				x		x
104	Spring	1			x				x		x
105	Hole screw	1			x				x		x
106	Balancing piston	1			x				x		x
113	Key	1			x				x		x
120	Distance sleeve	1							x		x
122	Ball bearing	1							x	x	x
123	Locking washer	1							x	x	x
124	Bearing nut	1							x	x	x
130	Washer	1							x		x
130A	Stop screw	4							x		x
139	Sealing washer	1					x	x	x		x
140	O-ring	1					x	x	x	x	x
2020	Idler rotor	2			x				x		x
209	Tension pin	2			x				x		x
211	Thrust collar	2			x				x		x
301	Sleeve	1				x			x		x
307	Screw	8				x			x		x
307A	Distance sleeve	6				x			x		x
307B	Distance sleeve	2				x			x		x
329	O-ring	1				x		x	x	x	x
340	Mandrel*	1				x			x		x
354	Bearing bush	1							x		x
355	Screw	2							x		x
355A	Locking plate	2							x		x
382	Screw	4							x		x
382A	Washer	4							x		x
390	Distance tube	4							x		x
391	Bearing plate	1							x		x
401	Pump body	1									
451	Screw	12									
453	Screw	8	x	x							
462	Plug	2	x								
462A	Washer	2	x					x			x
463	Plug	1									
463A	Washer	1						x			x
473	Grease nipple	1									
473A	Grease nipple cover	1									
501	Front cover	1									
502	Tension pin incl in 5110	1							x		x
506	Gasket	1							x		x
509A	Sealing bush	1				x	x	x	x		x
509B	O-ring	1				x	x	x	x		x
509C	Spring	2				x	x	x			x
509D	Washer	1				x	x	x			x
5110	Gland	1							x		x
511A	O-ring	1							x	x	x
527	Sealing cover	1							x		x
537	Plug	1									
537A	Washer	1						x			x
551	Inlet chamber	1	x	x							
556	O-ring	1	x	x							
556	Gasket	1									

Explanations:

A021: Idler rotors in steel, ALG,APG earlier designation N3E

G065: Inlet chamber

G012: Rotor set

G020: Sleeve element

G050: Shaft seal

G053: Minor kit (G050 + G057)

G054: Major kit = G090

G057: Joint kit

G065: Inlet chamber

G090: Pump element

ALG pumps with H-lead rotor set in size 080-090 are obsolete.

Older generations of pumps

ALG N2E, N2EH, N2ES, N2E/60, N2EH/60, N2ES/60 N3E, N3EH, N3ES. All parts are applicable.

Old designation

Current designation

ALG 80-4 N3E/60
ALG 080N3 NVCI

ALG 90-4B N3EH/60

ALG 090B3 NVBI

ALG 100-4 N3ES/60

ALG 100N3 NVJI

ALG 110-4 N3E

ALG 110N3 NVCI A021

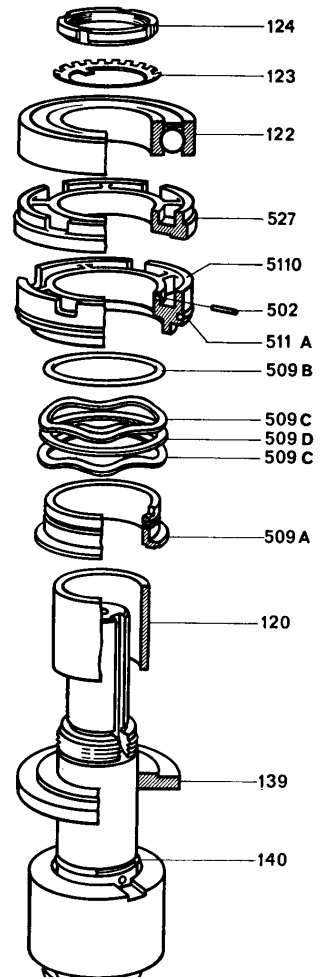
Notes:

* Mounting tool to mount sleeve/pump element into the pump

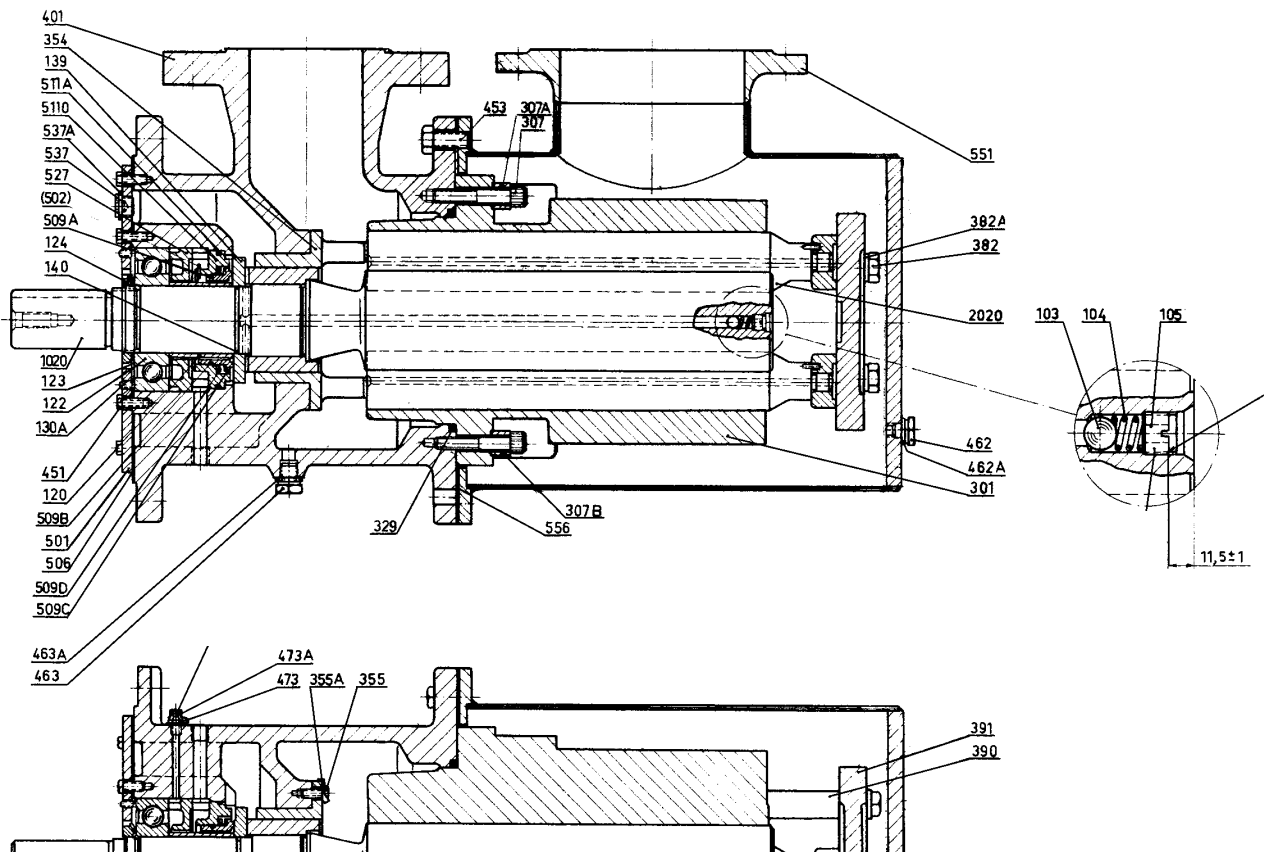
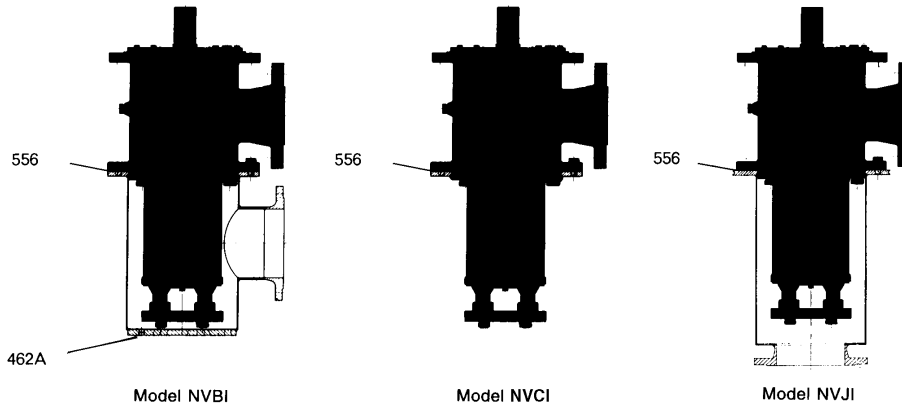
Ordering code

Pos No	Spare parts (set)		Part numbers for pump size				Note
			080	090	100	110	
G012	Rotor set	B-lead	--	088435	--	--	
		N-lead	--	088427	--	--	
G020	Sleeve element		--	097006	--	--	
G050	Shaft seal		070623	070623	070631	070631	
G053	Minor kit=G050+G057						
G054	Major kit=G090						
G057	Joint kit		186510	186510	186528	186528	
G090	Pump element	B-lead	--	096461	--	--	
		N-lead	--	096453	--	--	
354	Bearing bush		--	047233	--	--	
473	Grease nipple		024372	024372	024372	024372	
511A	O-ring		016931	016931	016964	016964	
556	O-ring		171918	171918	171488	171488	1
		Gasket	021493	021493	021808	021808	1

Assembly drawing



1) From 1987 new pumps are equipped with an O-ring between the pump and inlet chamber. This change was made to avoid leakage. This change was made without changing the pump designation. As spare part to old pumps the old gasket must be used.



List of components

Valid for all pumps in sizes D4C 025,032,038,045,052,060 & 070; Rotor diameter and generation L1/K1/N1 & L2/K2/N2

With version codes: L } R } C } E }
(cartridge pump) Y } T }
V }
(cpl pump with F } R } B } E }
steel casing) S } T } F }
V } J }
T }

The version code is composed of the letters in the 4 columns.

Also valid for pump options: A056, A101 & A246

Also valid for cartridge options: G056, G101 & G246

Example of pump designations

std: D4C 038N2 LRCE, D4 038N2 SFRE

options: D4C 045N2 LRCE G056, D4C 045N2 SRFE A056

Pos No	Denomination	Qty	G011	G012	G050	G053	G054	G057
101	Power rotor (CCW-rot.)	1	x				(x)	
102	Power rotor (CW-rot.)	1		x			x	
113	Key	1	x	x			x	
1030	Valve	1	x	x			x	
122	Ball bearing (option A056)	1					(x)	
124	Retaining ring	1/2					x	
124A	Support ring	1/2					x	
124B	Washer	1					x	
139	Balancing washer	1					x	
139A	Retaining ring (size 025)	1					x	
201	Idler rotor (CCW-rot.)	2	x				(x)	
202	Idler rotor (CW-rot.)	2		x			x	
301	Sleeve	1					x	
329	O-ring	2					x	x
329A	Support ring	1					x	x
351	Balancing cover	1					x	
376	Balancing bush	2	x	x			x	
395	Support plate	1					x	
395A	Screw	2					x	
451	Screw	4					x	
451A	Washer	4					x	
453	Screw (size 025-032)	4					x	
501	Front cover	1					x	
502	Tension pin (Incl in item 5200)	1					x	
504	Screw	4					x	
506	O-ring	1					x	x
507	Washer	1					x	
509	Mechanical seal	1					x	x
5200	Cover	1					x	
520A	O-ring	1					x	x
520B	Retaining ring	1					x	
521	Screw	3					x	
532	Cover	1					x	

Explanations:

A056: Ball bearing option (cpl. pump)
A101: CCW-rotation pump (cpl. pump)
A246: Combination of A056 + A101 (cpl. pump)
G011: Rotor set, CCW-rotation (option)
G012: Rotor set CW-rotation (std)
G050: Shaft seal
G053: Minor kit consisting of G050+G057
G054 = Major kit = compl. Cartridge pump
G056: Ball bearing option (cartridge)
G057 = Joint kit
G101: CCW-rotation pump (cartridge)
G246: Combination of G056 and G101 (cartridge)

Pumps with the designation "UD4" and with any of above material combinations, are identical with the corresponding D4C-pump cartridge.

Old designation Current designation

Cartridge pumps:

D4C 025N2 D4C 025N2 LRCE
D4C 032L2 A073 D4C 032L2 LTCE
D4C 038N2 A056 D4C 038N2 LRCE G056
D4C 045K2 A051 D4C 045K2 LVCE

Complete pumps

D4H 052N2 D4C 052N2 SxFE*
D4R 060K2 D4C 060K2 SxBE*
D4U 070N2 D4C 070N2 SxJE*

* Normally are these pumps equipped with a Tungsten shaft seal xTx.

Generation N1/L1/K1 cartridge pumps

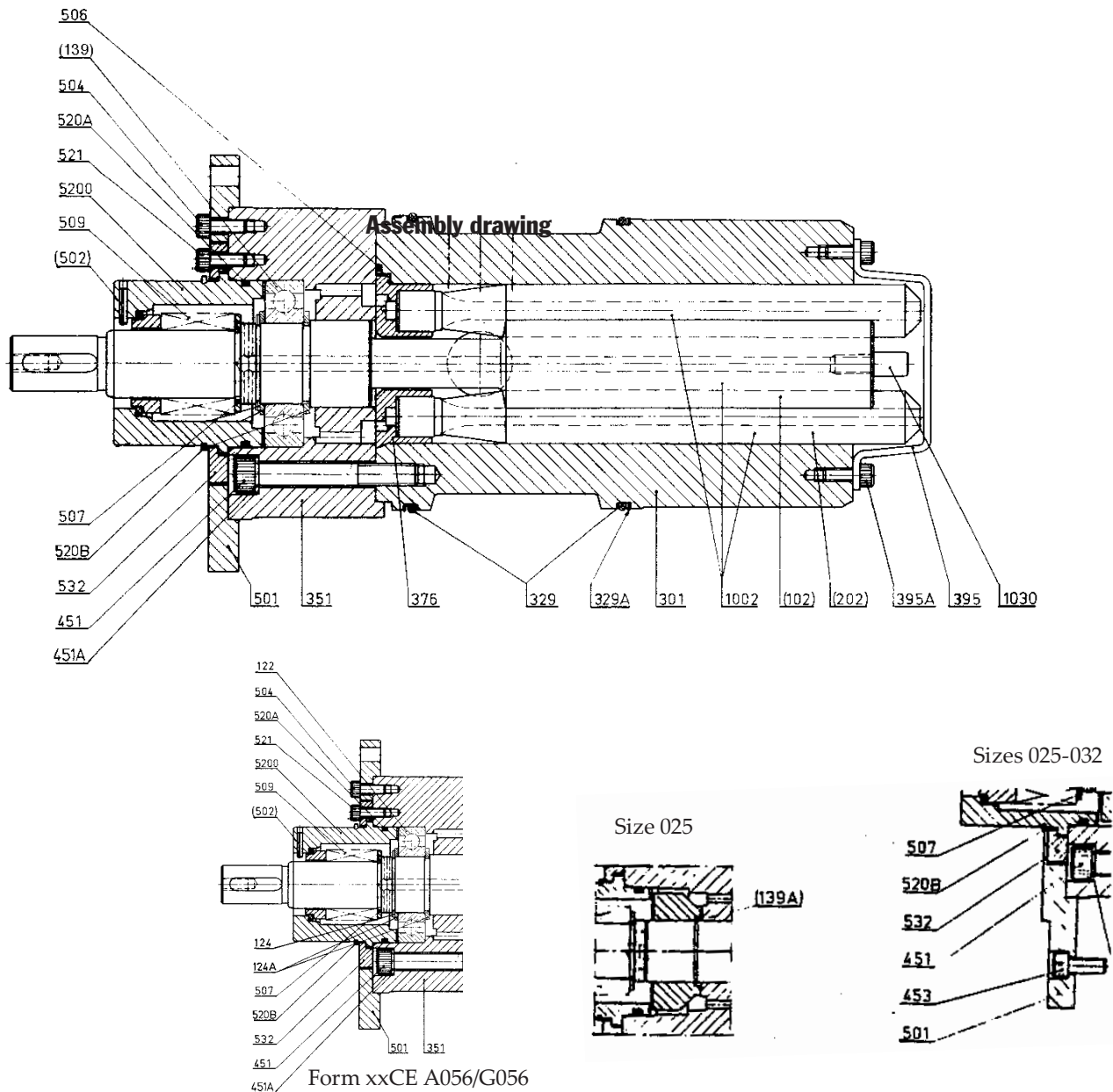
Cartridge pumps in version 1 are obsolete.
Deviating parts were the front cover item 501 and rotor set G012.
Wear parts available are noted on next page. See note 2.

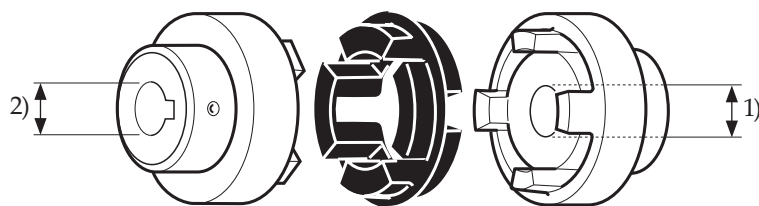
Ordering code

Pos No	Spare parts (set)	Part numbers for pump size								Note
		025	032	038	045	052	060	070		
G012	Rotor set CW-rot K-lead	--	--	146332	154534	186551	186577	186593	1,3	
	" L-lead	186544	156117	--	--				1,3	
	" N-lead	163410	150425	163428	166926	150433	186569	186585	1,3	
G050	Shaft seal xRxx	128314	128314	120873	124610	124610	128728	128728	2,3	
	" xTxx	168906	168906	172726	172049	172049	168914	168914	2,3	
	" xVxx	143859	143859	190336	190338	190338	142299	142299	2,3	
G053	Minor kit=G050+G057								2,3	
G057	Joint kit	185884	185892	185900	185918	185926	185934	185942	2	
122	Ball bearing G056/G246	106922	106922	017137	107870	017228	110429	110429	2,3	
376	Balancing bush	130245	128272	126987	123927	124172	128660	129023	2,3	

Notes:

- 1) These rotor sets are not valid for pumps A056/G056.
 If you require rotor sets for these pumps, please contact IMO AB.
- 2) These parts are also valid for obsolete pumps in version 1.
- 3) D4C pumps and their spares are obsolete. Rotor set G012, Shaft seal G050, Ball bearing 122 and Balancing bush 376 are identical with std D4 pump and still available.





Pump Size	Gen-eration	Pump shaft diameter in mm ¹⁾	Motor IEC size	Motor shaft diameter in mm ²⁾	Coupling size	Part numbers for coupling complete coupling ³⁾ rubber ring		
AAA	015-020	1-2	12	63	11	E50	191737	124420
				63-71	14	E50	191738	124420
ABF	080-090	2	36X	132	38	E97	193166	124453
				160	42	E97	193167	124453
				180	48	E112	193168	124412
				200	55	E128	193169	124461
				200	55	E128	191705	124453
100	2	40X	160	42	E97	191705	124453	
			180	48	E112	191706	124412	
			200	55	E128	191707	124461	
			225	60	E148	193170	124479	
110-125	2-4	45X	160	42	E112	191710	124412	
			180	48	E112	191711	124412	
			200	55	E128	191712	124461	
			225	60	E148	193171	124479	
			250	65	E148	193172	124479	
140	2-4	60X	280	75	E168	193173	124487	
			225	60	E148	191727	124479	
			250	65	E148	191728	124479	
			280	75	E168	191729	124487	
ABQ	100	4-5	55X	200	55	E128	191721	124461
				225	60	E148	191722	124479
				250	65	E148	191723	124479
				280	75	E168	193007	124487
110-125	3-5	60X	225	60	E148	191727	124479	
			250	65	E148	191728	124479	
			280	75	E168	191729	124487	
			315	80	E194	193174	124495	
140	3-5	70X	280	75	E168	193175	124487	
			315	80	E194	193176	124495	
160-180	5	70	315	80	E194	191735	124495	
			355	100	E240	191736	124511	
ACE	025	1-2	14	71	14	E50	191603	124420
				80	19	E50	191604	124420
				90	24	E67	191605	124438
032	1-2	18	71	14	E50	191606	124420	
			80	19	E50	191607	124420	
			90	24	E67	191608	124438	
038	1-2	22	100-112	28	E82	191609	124446	
			80	19	E67	191610	124438	
			90	24	E67	191611	124438	
			100-112	28	E82	191612	124446	
			132	38	E97	191613	124453	
ACE/ UCF	80	2-4	40X	132	38	E97	191704	124453
				160	42	E97	191705	124453
90	2-4	45X	180	48	E112	191706	124412	
			200	55	E128	191707	124461	
			132	38	E112	191708	124412	
			160	42	E112	191710	124412	
			180	48	E112	191711	124412	
				200	55	E128	191712	124461
				225	60	E148	191713	124479

Pump Size	Gen era tion	Pump shaft diameter in mm ¹⁾	Motor IEC size	Motor shaft diameter in mm ²⁾	Coupling size	Part numbers for coupling complete coupling ³⁾ rubber ring		
ACF/ UCF	100	2-4	50X	160	42	E128	191714	124461
				180	48	E128	191715	124461
				200	55	E128	191716	124461
				225	60	E148	191717	124479
				250	65	E148	191718	124479
110	2-4	55X	160	42	E128	191719	124461	
			180	48	E128	191720	124461	
			200	55	E128	191721	124461	
			225	60	E148	191722	124479	
			250	65	E148	191723	124479	
125	2-4	60X	160	42	E148	191724	124479	
			180	48	E148	191725	124479	
			200	55	E148	191726	124479	
			225	60	E148	191727	124479	
			250	65	E148	191728	124479	
ACG/ UCG	045	2-4	22	80	19	E67	191610	124438
				90	24	E67	191611	124438
				100-112	28	E82	191612	124446
				132	38	E97	191613	124453
				052	2-4	25	80	19
060	2-4	30	90	24	E67	191619	124438	
			100-112	28	E82	191620	124446	
			132	38	E97	191621	124453	
			160	42	E97	191622	124453	
			100-112	28	E82	191632	124446	
070	2-4	35X	132	38	E97	191633	124453	
			160	42	E97	191634	124453	
			180	48	E112	191635	124412	
			100-112	28	E97	191636	124453	
			132	38	E97	191637	124453	
ACG/ UCG	045	5-6	19	160	42	E97	191638	124453
				180	48	E112	191639	124412
				80	19	E67	191640	124438
				90	24	E67	191641	124438
				100-112	28	E82	191642	124446
052	5-6	24	132	38	E97	191643	124453	
			80	19	E67	191644	124438	
			90	24	E67	191645	124438	
			100-112	28	E82	191646	124446	
			132	38	E97	191647	124453	
060-070	5-6	28	160	42	E97	191648	124453	
			100-112	28	E82	191649	124446	
			132	38	E97	191650	124453	
			160	42	E97	191651	124453	
			180	48	E112	191652	124412	
UCG	3-6	Please see ACG						

Notes:

- 1) Pump shaft diameter. 'X' indicate that the shaft key groove are according to an old Swedish standard SMS 31
- 2) Motor shaft diameter, see figure on page 104
- 3) Complete coupling including perbunan rubber ring



Pump	Size	51G	52G	50G	Valid for pump forms
ALA/ALD/APD	25-4(8)	--	--	062554	ALA: N5E, N6E, N7E
	32-4(8)	--	--	062570	ALD: ND, N2D, N7D
	38-4(8)	--	--	062596	APD: ND,N2D,N3D,N4D,
	45-4(8)	--	--	070599	N2D/56,N3D/56,N4D/56
	52-4(8)	--	--	obsolete	
ALD/APD 509M	25-4(8)	--	--	082750	ND/509M, N2D/509M,
	32-4(8)	--	--	082768	N3D/509M, N4D/509M
	38-4(8)	--	--	082776	
	45-4(8)	--	--	082164	
	52-4(8)	--	--	obsolete	
ALB/ALG/APG	60-4(8) & 70-4(8)	--	--	070615	ALB:NM
	80-4(8) & 90-4(8)	--	--	070623	ALG/APG: N2E, N2E/60,
	100-4(8) & 110-4(8)	--	--	070631	N3E, N3E/60

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