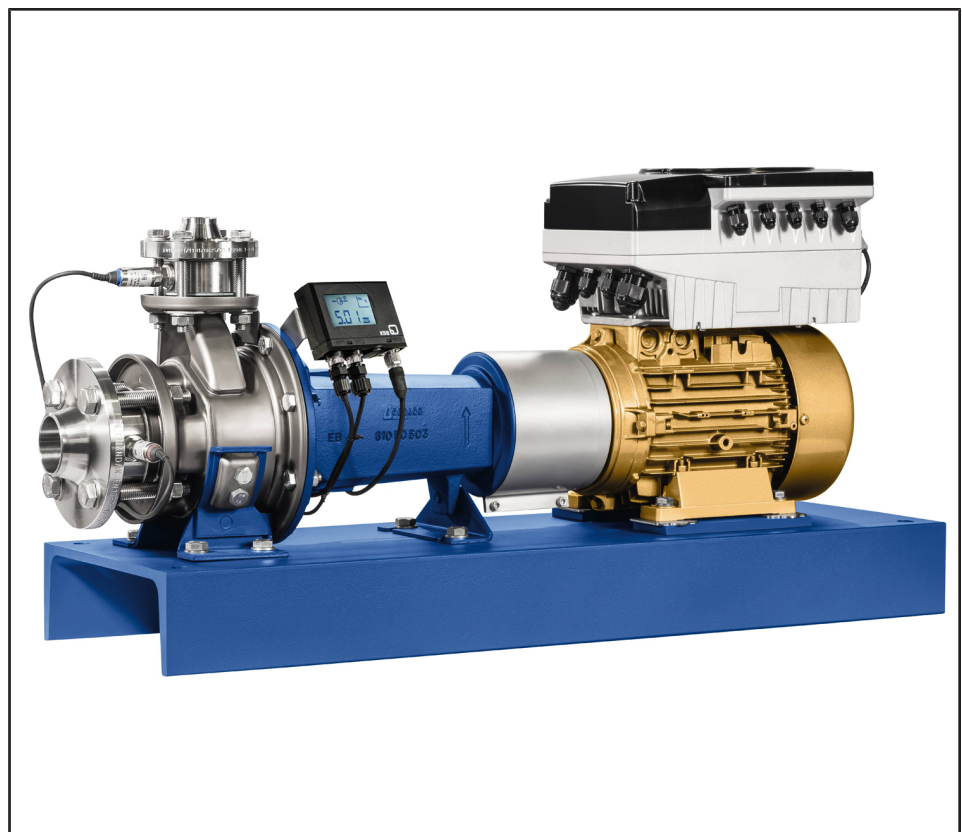


Standardised Pump

Etachrom L

50 Hz / 60 Hz

Type Series Booklet



Legal information/Copyright

Type Series Booklet Etachrom L

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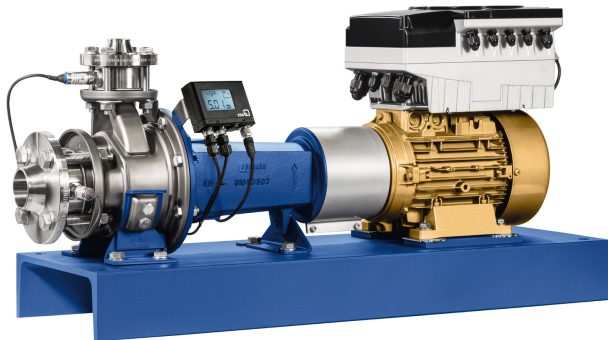
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Standardised Pumps / Close-coupled Pumps

Standardised Pumps to EN 733

Etachrom L



Main applications

- Cleaning systems (bottle rinsing, crate washing and similar systems)
- Water treatment systems
- Water supply systems
- Fire-fighting systems
- Spray irrigation systems
- General irrigation systems
- Drainage systems
- Hot-water heating systems
- Air-conditioning systems
- Industrial washing machines
- General industry
- Disposal of paint sludge
- Surface treatment systems

Fluids handled

- Service water
- Drinking water
- High-temperature hot water
- Cooling water
- Swimming pool water (0.4 to 1.4 mg/l free chlorine, max. 0.6 mg/l combined chlorine, pH 6.9 to 7.7, water hardness 10 to 30 °dH, max. salt content 7 g/l)
- Process water
- Fire-fighting water
- Condensate
- Oil

Further information on fluids handled

(⇒ Page 7)

Operating data

Operating properties

Characteristic		Value	
		50 Hz	60 Hz
Flow rate	Q [m³/h]	≤ 260	≤ 210
	Q [l/s]	≤ 72,2	≤ 58,3
Head	H [m]	≤ 105	≤ 104
Fluid temperature	T _{min.} [°C]	≥ -30	≥ -30
	T _{max.} [°C]	≤ +110	≤ +110
Operating pressure	p [bar]	≤ 12 ¹⁾	≤ 12 ¹⁾

Designation

Example: ETCL 050-025-125 CCSAA07D1

Designation key

Code	Description
ETCL	Pump type
	ETCL Etachrom L
050-025-125	Size
	050 Nominal suction nozzle diameter [mm]
	025 Nominal discharge nozzle diameter [mm]
125	Nominal impeller diameter [mm]
C	Pump casing material
	C 1.4571
C	Impeller material
	C 1.4571/1.4408
S	Design
	S Standard
X	Special design BT3D, BT3
AA	Casing cover
	AA Without internal circulation
	EA External circulation
	FA External flushing
AS	Without internal flushing, with vent
07	Seal code
	07 Q1Q1EGG
D	Scope of supply
	A Pump only (Fig. 0 bareshaft pump)
D	Pump, baseplate, coupling, coupling guard, motor
1	Shaft unit
	1 Shaft unit 25.1 (WS25)
	2 Shaft unit 25.2 (WS25)
3	Shaft unit 35 (WS35)

Further information on the designation

(⇒ Page 36)

1) The sum of inlet pressure and shut-off head must not exceed the value indicated.

Design details

Design

- Design with materials to Regulation (EC) No. 1935/2004 can be provided.
- Design to ATEX

Design

- Annular casing pumps
- Back pull-out design
- Flanges to EN 1092-1
- Horizontal installation
- Single-stage
- Dimensions and ratings to EN 733
- Pump and motor connected by shaft coupling

Pump casing

- Annular casing with welded-on or bolted-on pump feet
- Replaceable casing wear rings

Drive

Standard design:

- KSB surface-cooled IEC three-phase current squirrel-cage motor
- 50 Hz winding, 220 - 240 V / 380 - 420 V ≤ 2.20 kW
- 50 Hz winding, 380 - 420 V / 660 - 725 V ≥ 3.00 kW
- 60 Hz winding, 440 - 480 V ≤ 2.60 kW
- 60 Hz winding, 440 - 480 V ≥ 3.60 kW
- Type of construction B3
- Duty cycle: continuous duty S1
- Enclosure IP55
- Thermal class F
- 3 PTC thermistors

or

- KSB surface-cooled IEC frame three-phase current squirrel-cage motor as described above, but West European make to our choice

or

Explosion-proof version:

- Surface-cooled IEC three-phase current squirrel-cage motor
- 50 Hz winding, 220 - 240 V / 380 - 420 V ≤ 1.85 kW
- 50 Hz winding, 380 - 420 V / 660 - 725 V ≥ 2.50 kW
- Enclosure IP55 or IP54
- Type of protection EEx e II
- Temperature class T3

Shaft seal

- Single mechanical seal to EN 12756 (⇒ Page 14)
- The shaft is fitted with a replaceable shaft sleeve in the shaft seal area (sizes 080-065-250, 100-080-200, 100-080-250)

Impeller type

- Closed radial impeller with multiply curved vanes (⇒ Page 9)

Bearings

- Grease-packed radial ball bearing (⇒ Page 13)

Automation

Automation options:

- PumpDrive
- PumpMeter

Coating and preservation

- Coating and preservation to KSB standard AN 1897/54-09
- Pump casing without coating
- Drive lantern, intermediate piece with primer coat

Primer

Type	Primer
A1	<ul style="list-style-type: none"> ▪ Hydro-dip primer for steel and cast components ▪ Spray-coating with compressed air possible ▪ Water-thinned hydro dip primer with good anti-corrosive properties ▪ Dry film thickness: 40-50 µm

Top coat

Type	Top coat ²⁾
A1	<ul style="list-style-type: none"> ▪ Quick drying, water-thinned paint (acrylate alkyd combination) with anti-corrosive properties and lead-free pigmentation ▪ T up to 140 °C ▪ Dry film thickness: 60 µm

Product benefits

- Maintenance-free mechanical seal ensures operating reliability
- Easy to dismantle due to back pull-out design; no need to remove the pump casing from the piping
- Optimised hydraulic components for high efficiency help reduce energy consumption
- Corrosion-resistant with all wetted parts made of stainless steel (1.4571).
- Long service life, maintenance-free with high-quality standardised mechanical seal to EN 12756

Product information as per Regulation No. 547/2012 (for water pumps with a maximum shaft power of 150 kW) implementing "Ecodesign" Directive 2009/125/EC

- Minimum efficiency index: see data sheet
- The benchmark for the most efficient water pumps is MEI ≥ 0.70.
- Year of construction: see data sheet
- Manufacturer's name or trade mark, commercial registration number and place of manufacture: see data sheet or order documentation

2) The top coats are suitable for indoor and outdoor installation in slightly aggressive atmospheres.

- Product's type and size identifier: see data sheet
- Hydraulic pump efficiency (%) with trimmed impeller: see data sheet
- Pump performance curves, including efficiency characteristics: see documented characteristic curve
- The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with full impeller diameter. Trimming of the impeller will adapt the pump to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.
- Operation of this water pump with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.
- Information relevant for disassembly, recycling or disposal at end of life: see installation/operating manual
- Information on benchmark efficiency or benchmark efficiency graph for MEI = 0.70 (0.40) for the pump based on the model shown in the Figure are available at: <http://www.europump.org/efficiencycharts>

Certifications

Overview

Label	Effective in:	Comment
	All countries	Certified quality management to ISO 9001
	France	French drinking water approval

Acceptance tests and warranty

- **Materials inspection and testing**
 - Test report 2.2 on request
- **Final inspection**
 - Inspection certificate 3.1 to EN 10204 on request
- **Hydraulic test**
 - The duty point of each pump with a delivery address or final destination in Europe is guaranteed to ISO 9906/2A.
 - The duty point of each pump with a delivery address or final destination outside of Europe is guaranteed to ISO 9906/3.
- The following **acceptance tests** can be performed and certified at **extra charge**:
 - Performance test to ISO 9006
 - NPSH test
- Other inspections/tests on request
- **Warranty**
Warranties are given within the scope of the valid terms and conditions of sale and delivery.

Overview of product features / selection tables
Overview of fluids handled

The table of fluids handled is a selection aid for different applications. It serves as guidance and is based on long-standing experience. The data are reference values and are not to be considered generally binding recommendations. They shall not be the basis for warranty claims. Please contact your nearest sales branch for in-depth advice.

Example: Pure water 15 °C; Q = 40 m³/h; H = 51 m

Selection: Etachrom L 065-040-200 CC A11D2

065-040-200 Size (as per characteristic curve for 2900 rpm)

11 Variant code (according to selection table)

Motor rating required: 11 kW

Selection table

Fluids handled	Application limits		Shaft seal (mechanical seal)			
	Percentage [%]	Temperature [°C]	Q1Q1M1GG	U3U3VGG	Q1Q1X4GG	BQ1EGG ³⁾
			Design code			
			05 ⁴⁾	09	10	11
Alkaline cleaning agents	-	-	-	-	X	-
Alcohol (ethanol)	-	-	-	-	-	X
Ammonia water (ammonia solution)	≤ 10	≤ 60	-	-	-	X
Ammonium bicarbonate	≤ 10	≤ 40	-	-	-	X
Antifrogen (alcohol-based)	-	-	-	-	-	X
Cider	-	-	-	-	-	X
Ethanol (alcohol)	-	-	-	-	-	X
Ethylene glycol ⁵⁾	-	-	-	-	-	X
Petrol	-	-	X	-	-	-
Spirits	-	-	-	-	-	X
Butanol	-	-	-	-	-	X
Butanoic acid	100	≤ 30	-	-	-	X
Calcium acetate	10	-	-	-	-	X
Calcium nitrate	≤ 10	≤ 30	-	-	X	-
Deionised water (fully desalinated water) ⁶⁾	-	-	-	-	-	X
Distilled water	-	≤ 60	-	-	-	X
Diesel oil	-	-	-	-	X	-
Decarbonised water ⁷⁾	-	≤ 60	-	-	-	X
Peanut oil	-	-	-	-	X	-
Vinegar (= 5 % acetic acid)	≤ 5	-	-	-	-	X
Ethanol	-	-	-	-	-	X
Ethylene glycol/diethylene glycol ⁵⁾	-	-	-	-	-	X
Fire-fighting water ⁷⁾	-	≤ 25 ⁸⁾	-	-	X	-
Antifreeze (ethylene glycol) ⁵⁾ , no cooling brines	-	-	-	-	-	X
Tannic acid	≤ 50	SP ⁹⁾	-	-	-	X
Glycol (ethylene glycol) ⁵⁾	-	-	-	-	-	X
Glycol/water mixture ⁵⁾	-	-	-	-	-	X
Fuel oil, light	-	-	-	-	X	-
Heating water ¹⁰⁾	-	≤ 110	-	-	X	-
Hydraulic oil	-	-	-	-	X	-
Isopropanol	-	-	-	-	-	X
Potassium bicarbonate	≤ 10	≤ 80	-	-	-	X
Potassium hydroxide	≤ 10	≤ 80	-	-	X	-
Potassium carbonate	≤ 10	≤ 80	-	-	-	X

3) Combinations of soft/hard contact face materials (BQ1) can only be used for fluids up to a total solids content of 50 mg/l. Higher solids contents will result in leakage and a shorter service life.

4) Shaft seal, uni-directional

5) Antifreeze agent on ethylene glycol basis with inhibitors. Content: > 20 % to 50 % (e.g. Antifrogen N)

6) Conductivity at 25 °C: < 250 µS/cm, SiO₂ (silicate) content ≤ 10 mg/l

7) Chloride content ≤ 300 mg/l; if the value is exceeded, water analysis is required.

8) Mechanical seal suitable for t ≤ 110 °C

9) SP = boiling point

10) Conductivity at 25 °C: 100 to 800 µS/cm

Fluids handled	Application limits		Shaft seal (mechanical seal)			
	Percentage [%]	Temperature [°C]	Q1Q1M1GG	U3U3VGG	Q1Q1X4GG	BQ1EGG ³⁾
			Design code			
			05 ⁴⁾	09	10	11
Potassium sulphate	≤ 3	≤ 20	-	-	-	X
Jet fuel	-	-	-	-	X	-
Boiler water	-	≤ 110	-	-	-	X
Condensate ⁶⁾	-	≤ 110	-	-	-	X
Cooling water (without antifreeze)	-	≤ 60 ⁸⁾	-	-	X	-
Cooling water pH ≥ 7.5 (with antifreeze) ⁵⁾	-	≤ 110	-	-	-	X
Copper sulphate	≤ 5	RT ¹¹⁾	-	-	-	X
Slightly contaminated water ⁷⁾	-	≤ 60 ⁸⁾	-	-	X	-
Linseed oil	-	-	-	-	X	-
Magnesium sulphate	≤ 10	≤ 20	-	-	-	X
Corn oil	-	-	-	-	X	-
Methyl alcohol (methanol)	-	-	-	-	-	X
Mineral oil	-	-	-	-	X	-
Miscella	-	≤ 80	-	-	X	-
Sodium hydrogen carbonate	≤ 6	≤ 20	-	-	X	-
Sodium hydroxide (caustic soda)	≤ 20	≤ 60	-	-	X	-
Sodium hydroxide (caustic soda)	≤ 10	≤ 80	-	-	X	-
Sodium carbonate	≤ 6	≤ 60	-	-	-	X
Sodium nitrate	≤ 10	≤ 90	-	-	-	X
Sodium phosphate	≤ 10	≤ 100	-	-	X	-
Sodium sulphate	≤ 5	≤ 60	-	-	-	X
Caustic soda (sodium hydroxide)	≤ 20	≤ 60	-	-	X	-
Caustic soda (sodium hydroxide)	≤ 10	≤ 80	-	-	X	-
Oil-water emulsion	-	≤ 60	-	X	-	-
Kerosene	-	-	-	-	X	-
Vegetable oil, pure	-	-	-	-	X	-
Phosphoric acid	≤ 10	≤ 85	-	-	X	-
Polyglycols	-	≤ 90	-	-	-	X
Propanol (propyl alcohol)	-	-	-	-	-	X
Rapeseed oil	-	-	-	-	-	X
Pure water ¹²⁾	-	≤ 60 ⁸⁾	-	-	-	X
Pure water with 6 % soda	≤ 6	≤ 60	-	-	-	X
Raw water ⁷⁾	-	≤ 60 ⁸⁾	-	-	X	-
Ammonia solution (ammonia water)	≤ 10	≤ 60	-	-	-	X
Lubricating oil	-	-	-	-	X	-
Cutting oil	-	-	-	-	X	-
Sulphuric acid	≤ 5	RT ¹¹⁾	-	-	-	X
Sulphuric acid	≤ 2,5	≤ 60	-	-	-	X
Sulphurous acid	≤ 10	RT ¹¹⁾	-	-	-	X
Swimming pool water (fresh water)	-	≤ 60	-	-	X	-
Silicone oil	-	-	-	-	-	X
Soy-bean oil	-	-	-	-	X	-
Edible oil	-	-	-	-	X	-
Rinsing water ⁷⁾	-	≤ 60	-	-	X	-
Dam water ⁷⁾	-	≤ 60 ⁸⁾	-	-	X	-
Partly desalinated water	-	≤ 110	-	-	-	X
Trisodium phosphate	≤ 4	≤ 85	-	-	X	-
Drinking water ⁷⁾	-	≤ 60 ⁸⁾	-	-	-	X
Turbine oil (does not apply to SFD oils, hardly flammable)	-	≤ 80	-	-	X	-
Fully desalinated water ⁶⁾	-	≤ 110	-	-	-	X
Lye for bottle rinsers	-	≤ 90	-	-	X	-
Lye for metal cleaning pH ≤ 12	-	≤ 80	-	X	-	-

11) RT = room temperature

12) No ultra-pure water! Conductivity at 25 °C: ≤ 800 µS/cm

Fluids handled	Application limits		Shaft seal (mechanical seal)			
	Percentage [%]	Temperature [°C]	Q1Q1M1GG	U3U3VGG	Q1Q1X4GG	BQ1EGG ³⁾
			Design code			
			05 ⁴⁾	09	10	11
Detergents (containing surfactants)	-	-	-	-	-	X
Water/bathing water ⁷⁾	-	≤ 60	-	-	-	X
Soft water	-	≤ 60	-	-	-	X
Viscous fluid Sugar juice (thin juice)	20	≤ 100	X	-	-	-
Citric acid	≤ 50	RT ¹¹⁾	-	-	-	X

Impellers

- Closed radial impeller with multiply curved vanes (⇒ Page 9)

Machining type, materials

Closed radial impeller		
Stainless steel 1.4571		Stainless steel 1.4408
Projection-welded	Laser-welded	Cast
050-025-125	050-032-200	050-025-250
050-025-125.1	065-040-200	050-032-250
050-025-160	065-050-160	065-040-250
050-025-200	-	065-050-200
050-032-125	-	065-050-250
050-032-125.1	-	080-065-200
050-032-160	-	080-065-250
065-040-125	-	100-080-200
065-040-160	-	100-080-250
065-050-125	-	-

Pressure limits and temperature limits

Pressure limits and temperature limits

Material variant	Fluid temperature	Operating pressure ¹³⁾	Test pressure ¹⁴⁾
	[°C]	[bar]	[bar]
C	-30 to +110	≤ 12	≤ 16

Materials

Overview of available materials

Part No.	Description	Material designation	Fluid temperature [°C]	
			T _{min}	T _{max}
101	Pump casing	CrNiMo steel 1.4571	-30	+110
132.01	Intermediate piece	Grey cast iron EN-GJL-250/ cataphoresis	-30	+110
163	Discharge cover	CrNiMo steel 1.4571	-30	+110
183	Foot	S235 JR	-30	+110
210	Shaft	CrNiMo steel 1.4571	-30	+110
230	Impeller	CrNiMo steel 1.4571	-30	+110
		CrNi steel 1.4308	-30	+110
		CrNiMo steel 1.4408	-30	+110
330	Bearing bracket	Grey cast iron EN-GJL-250/ A 48 CL 35B	-30	+110
		Grey cast iron EN-GJL-250/ cataphoresis	-30	+110
412.35	O-ring	EPDM 70/ 80	-30	+110
		HNBR 75 Therban	-30	+110
		FKM80	-30	+110
502.01	Casing wear ring	CrNiMo steel 1.4571	-30	+110
502.02	Casing wear ring	CrNiMo steel 1.4571	-30	+110
523	Shaft sleeve	CrNiMo steel 1.4571	-30	+110

13) The sum of inlet pressure and shut-off head must not exceed the value indicated.

14) The casing components are checked for leakage by means of internal pressure tests to AN 1897/75-03D00 with water.

Part No.	Description	Material designation	Fluid temperature [°C]	
			T _{min}	T _{max}
901.99	Hexagon head bolt	Steel 8.8 A2A	-30	+110
903.01	Screw plug	CrNiMo steel A4	-30	+110
920.01	Nut	CrNiMo steel A4	-30	+110

The pumps are free from substances impairing the adhesive strength of the paint, such as silicone.

Technical data

Size	Shaft unit	Impeller				Balancing hole	Discharge-side casing wear ring
		Ø _{min}	Ø _{max}	Outlet width	Free passage		
		[mm]	[mm]	[mm]	[mm]		
050-025-125.1	WS 25.1	110	136	6,0	5,0	-	-
050-025-125	WS 25.1	110	136	11,7	11,0	-	-
050-025-160	WS 25.1	135	166	9,8	9,0	-	-
050-025-200	WS 25.1	166	196	8,0	7,0	✓	✓
050-025-250	WS 25.2	212	260	8,0	7,5	✓	✓
050-032-125.1	WS 25.1	110	136	6,0	5,0	-	-
050-032-125	WS 25.1	110	136	11,7	11,0	-	-
050-032-160	WS 25.1	135	166	9,8	9,0	-	-
050-032-200	WS 25.1	166	196	8,0	7,0	✓	✓
050-032-250	WS 25.2	212	260	8,0	7,5	✓	✓
065-040-125	WS 25.1	110	136	16,8	11,5	-	-
065-040-160	WS 25.1	135	166	14,4	12,0	✓	✓
065-040-200	WS 25.1	166	196	12,0	11,0	✓	✓
065-040-250	WS 25.2	214	260	8,0	8,0	✓	✓
065-050-125	WS 25.1	110	142	20,0	15,0	-	-
065-050-160	WS 25.1	142	170	17,0	16,0	✓	✓
065-050-200	WS 25.2	180	219	11,5	11,0	✓	✓
065-050-250	WS 25.2	220	260	12,0	12,0	✓	✓
080-065-200	WS 25.2	180	219	17,0	16,0	✓	✓
080-065-250	WS 35	220	260	13,9	13,0	✓	✓
100-080-200	WS 35	180	219	23,5	20,0	✓	✓
100-080-250	WS 35	220	269	19,0	19,0	✓	✓

Maximum permissible P/n value

Size	Nominal impeller diameter [mm]			
	125	160	200	250
050-025	0,006	0,006	0,006	0,0142
050-032	0,006	0,006	0,006	0,0142
065-040	0,006	0,006	0,006	0,0142
065-050	0,006	0,006	0,0142	0,0142
080-065	-	-	0,0142	0,0256
100-080	-	-	0,0256	0,0256

Maximum permissible speed

Size	Nominal impeller diameter [mm]			
	125	160	200	250
050-025	3600	3600	3600	3000
050-032	3600	3600	3600	3000
065-040	3600	3600	3600	3000
065-050	3600	3600	3600	3000
080-065	-	-	3600	3000
100-080	-	-	3000	1800

Axial mass moment of inertia

Size	Impeller diameter Q _{min}	Mass moment of inertia ¹⁵⁾ J
	[mm]	[kgm ²]
050-025-125.1	136	0,0015
050-025-125.1	123	0,0012
050-025-125.1	110	0,0010
050-025-125	136	0,0010
050-025-125	123	0,0010
050-025-125	110	0,0012
050-025-160	166	0,0031

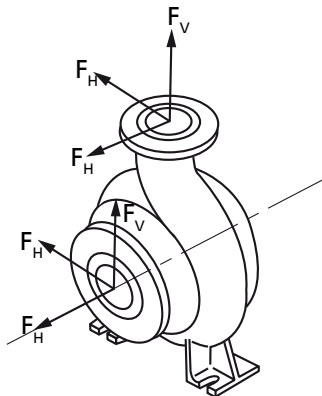
15) With water fill

Size	Impeller diameter Q_{\min}	Mass moment of inertia ¹⁵⁾ J
	[mm]	[kgm ²]
050-025-160	151	0,0022
050-025-160	135	0,0015
050-025-200	196	0,0056
050-025-200	181	0,0045
050-025-200	166	0,0031
050-025-250	260	0,0421
050-025-250	229	0,0258
050-025-250	198	0,0171
050-032-125.1	136	0,0015
050-032-125.1	123	0,0012
050-032-125.1	110	0,0010
050-032-125	136	0,0010
050-032-125	123	0,0010
050-032-125	110	0,0012
050-032-160	166	0,0031
050-032-160	151	0,0022
050-032-160	135	0,0015
050-032-200	196	0,0056
050-032-200	181	0,0045
050-032-200	166	0,0031
050-032-250	260	0,0421
050-032-250	229	0,0258
050-032-250	198	0,0171
065-040-125	136	0,0020
065-040-125	123	0,0015
065-040-125	110	0,0012
065-040-160	166	0,0037
065-040-160	151	0,0027
065-040-160	135	0,0019
065-040-200	196	0,0080
065-040-200	181	0,0052
065-040-200	166	0,0037
065-040-250	260	0,0436
065-040-250	230	0,0264
065-040-250	200	0,0155
065-050-125	142	0,0026
065-050-125	126	0,0018
065-050-125	110	0,0014
065-050-160	170	0,0052
065-050-160	156	0,0036
065-050-160	142	0,0026
065-050-200	220	0,0219
065-050-200	195	0,0147
065-050-200	170	0,0098
065-050-250	260	0,0456
065-050-250	235	0,0288
065-050-250	210	0,0197
080-065-200	219	0,0287
080-065-200	200	0,0215
080-065-200	180	0,0167
080-065-250	255	0,0515
080-065-250	233	0,0369
080-065-250	210	0,0282
100-080-200	219	0,0412
100-080-200	200	0,0329
100-080-200	180	0,0265
100-080-250	169	0,0802
100-080-250	240	0,0581
100-080-250	210	0,0429

Liquid fill of pump

Size	Fill [l]
050-025-125.1	1,2
050-025-125	1,2
050-025-160	1,6
050-025-200	1,7
050-025-250	3,8
050-032-125.1	1,2
050-032-125	1,2
050-032-160	1,6
050-032-200	1,7
050-032-250	3,8
065-040-125	1,3
065-040-160	2,0
065-040-200	2,3
065-040-250	4,0
065-050-125	2,3
065-050-160	2,4
065-050-200	3,3
065-050-250	4,0
080-065-200	4,3
080-065-250	4,9
100-080-200	6,5
100-080-250	6,5

Permissible forces and moments at the pump nozzles



$$\left[\frac{\sum |F_V|}{|F_{Vmax}|} \right]^2 + \left[\frac{\sum |F_H|}{|F_{Hmax}|} \right]^2 + \left[\frac{\sum |M_t|}{|M_{tmax}|} \right]^2 \leq 1$$

Fig. 1: Forces and moments at the pump nozzles

The following condition must be met:

$\sum |F_V|$, $\sum |F_H|$, and $\sum |M_t|$ are the sums of the absolute values of the respective loads acting on the nozzles. Neither the load direction nor the load distribution among the nozzles are taken into account in these sums.

Forces and moments at the pump nozzles¹⁶⁾

Size	F_{Vmax}	F_{Hmax}	M_{tmax}
	[kN]	[kN]	[kNm]
050-025-125.1	2,6	1,8	0,55
050-025-125	2,6	1,8	0,55
050-025-160	2,5	1,7	0,5
050-025-200	2,5	1,7	0,5
050-025-250	2,5	1,7	0,5
050-032-125.1	2,6	1,8	0,55
050-032-125	2,6	1,8	0,55
050-032-160	2,5	1,7	0,5
050-032-200	2,5	1,7	0,5
050-032-250	2,5	1,7	0,5
065-040-125	2,6	1,8	0,6

16) The indicated values apply to pumps made of chrome nickel molybdenum steel 1.4571 on non-grouted baseplates.

Size	F_{Vmax}	F_{Hmax}	M_{tmax}
	[kN]	[kN]	[kNm]
065-040-160	2,6	1,8	0,6
065-040-200	2,6	1,8	0,6
065-040-250	2,6	1,8	0,6
065-050-125	2,7	2,0	0,75
065-050-160	2,7	1,9	0,7
065-050-200	2,7	1,9	0,7
065-050-250	2,7	1,9	0,7
080-065-200	3,0	2,2	0,85
080-065-250	3,2	2,4	1,05
100-080-200	4,0	2,9	1,45
100-080-250	4,0	2,9	1,45

Noise characteristics

Surface sound pressure level L_{pA} ¹⁷⁾¹⁸⁾

Rated power input P_N [kW]	Pump		Pump set	
	1450 rpm [dB]	2900 rpm [dB]	1450 rpm [dB]	2900 rpm [dB]
0,55	47	48	55	64
0,75	48	50	57	64
1,1	50	52	60	64
1,5	52	54	60	69
2,2	54	56	64	69
3	55	57	64	71
4	57	59	62	73
5,5	59	61	68	72
7,5	60	62	68	72
11	62	64	69	75
15	-	66	-	75
18,5	-	67	-	75
22	-	68	-	78
30	-	70	-	79
37	-	71	-	79
45	-	72	-	79
55	-	73	-	79
75	-	75	-	82

Bearing design

Overview of radial ball bearings to DIN 625 used

Size	Drive end	Pump end	Nominal impeller diameter [mm]			
			125	160	200	250
			Bearing code			
050-025	X	-	6305 2Z C3	6305 2Z C3	6305 2Z C3	6305 2Z C3
	-	X	6305 2Z C3	6305 2Z C3	6305 2Z C3	6306 2Z C3
050-032	X	-	6305 2Z C3	6305 2Z C3	6305 2Z C3	6305 2Z C3
	-	X	6305 2Z C3	6305 2Z C3	6305 2Z C3	6306 2Z C3
065-040	X	-	6305 2Z C3	6305 2Z C3	6305 2Z C3	6305 2Z C3
	-	X	6305 2Z C3	6305 2Z C3	6305 2Z C3	6306 2Z C3
065-050	X	-	6305 2Z C3	6305 2Z C3	6305 2Z C3	6305 2Z C3
	-	X	6305 2Z C3	6305 2Z C3	6306 2Z C3	6306 2Z C3
080-065	X	-	-	-	6305 2Z C3	6307 2Z C3
	-	X	-	-	6306 2Z C3	6307 2Z C3
100-080	X	-	-	-	6307 2Z C3	6307 2Z C3
	-	X	-	-	6307 2Z C3	6307 2Z C3

17) Spatial average; as per ISO 3744 and EN 12639; valid for pump operation in the $Q/Q_{opt} = 0.8 - 1.1$ range and for non-cavitating operation. If noise levels are to be guaranteed: Add +3 dB for measuring and constructional tolerance.

18) Increase for 60 Hz operation: 3500 rpm +3 dB; 1750 rpm +1 dB

Mechanical seal design

Installation dimensions to EN 12756

Example: KU022SO

Designation

Code	Description
K	Design K Short design
U	Type U Unbalanced
022	Nominal diameter of the mechanical seal
S	Direction of rotation of the mechanical seal S Bi-directional
O	Anti-twist lock O Without lock

Mechanical seal sizes

Size	Nominal impeller diameter [mm]			
	125	160	200	250
050-025	KU022SO	KU022SO	KU022SO	KU028SO
050-032	KU022SO	KU022SO	KU022SO	KU028SO
065-040	KU022SO	KU022SO	KU022SO	KU028SO
065-050	KU022SO	KU022SO	KU028SO	KU028SO
080-065	-	-	KU028SO	NU038SO
100-080	-	-	NU038SO	NU038SO

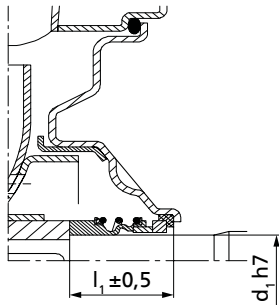


Fig. 2: Mechanical seal dimensions

Mechanical seal dimensions

Code	d ₁	l ₁
	[mm]	[mm]
KU022SO	22	37,5
KU028SO	28	42,5
NU038SO	38	55,0

Design code¹⁹⁾

Design code	Description				
	Primary ring	Mating ring	Secondary seal	Spring	Other parts
01	Q1	Q1	V	G	G
05	Q1	Q1	M1	G	G
07	Q1	Q1	E	G	G
09	U3	U3	V	G	G
10	Q1	Q1	X4	G	G
11	B	Q1	E	G	G
12	Q12	Q1	M1	G	G

Design code	Description				
	Primary ring	Mating ring	Secondary seal	Spring	Other parts
17	Q1	B	V	G	G
66	Q7	Q7	E	G	G
67	Q6	Q6	X4	G	G

Material designation

Code	Material
B	Carbon, resin-impregnated
E	EPDM
G	CrNiMo steel
M1	FKM, double PTFE-coated
Q1	Silicon carbide
Q6	Silicon carbide with carbon
Q7	Silicon carbide, porous
Q12	Silicon carbide
U3	Tungsten carbide
V	FKM
X4	HNBR, e.g. Therban

Additional information

- Discharge cover with anti-swirl baffles
 - For applications with a risk of wear by erosion.

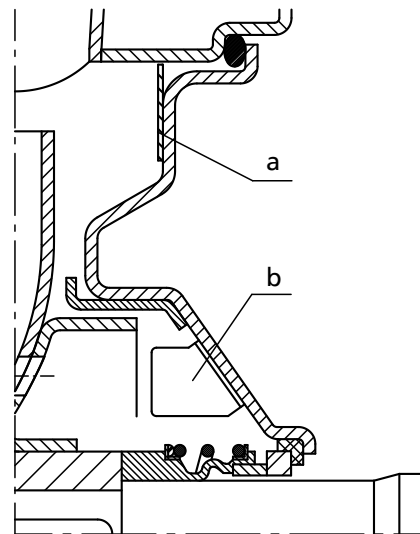


Fig. 3: Discharge cover with anti-swirl baffles

a	Ring
b	2 anti-swirl baffles at the circumference

- Contact guard
 - Coupling guard to ZN 79, made of sheet steel, without support piece, not tread-proof
 - Tread-proof version:**
Coupling guard to ZN 79, guard/ring made of galvanised unperforated sheet metal, without

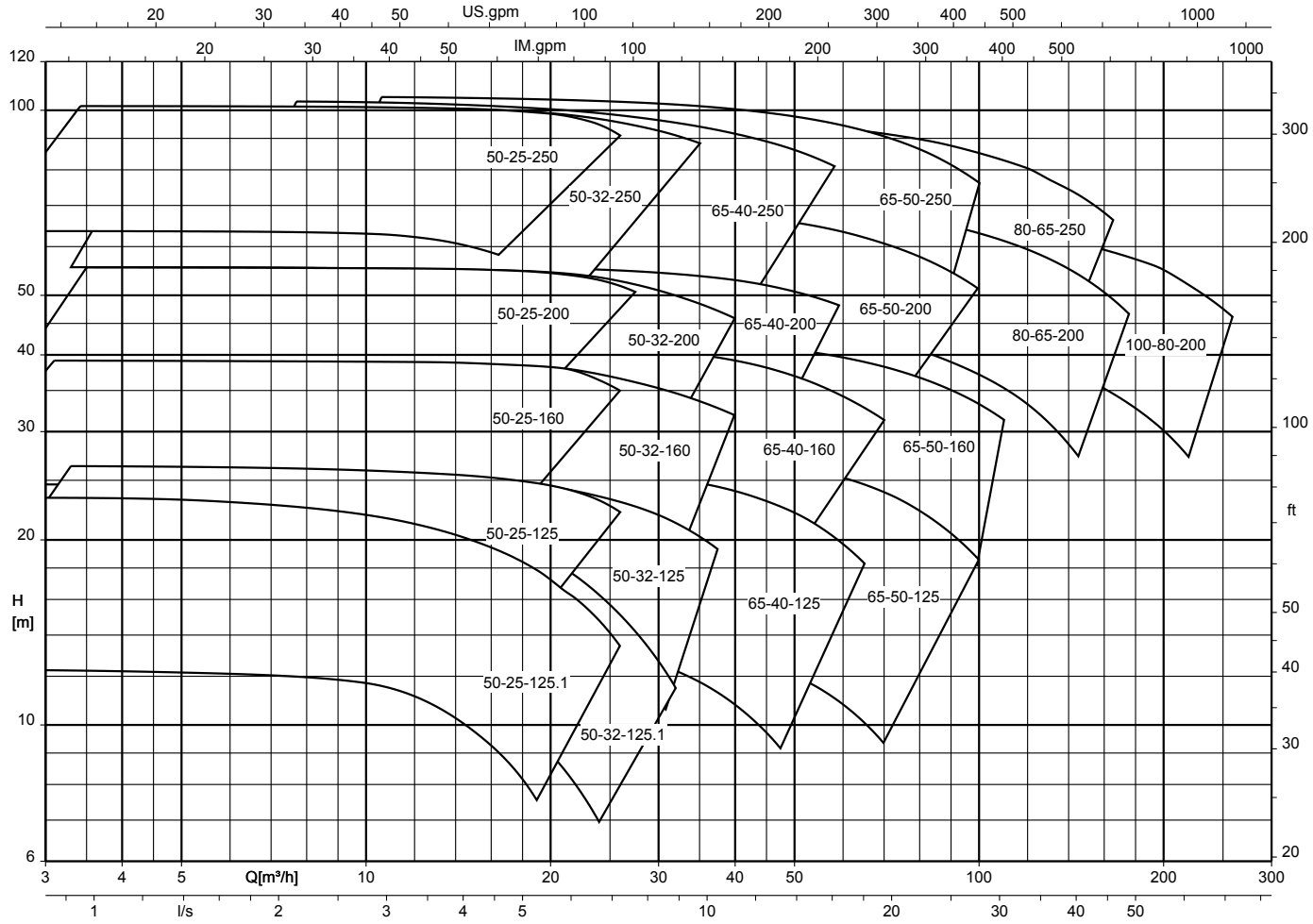
19) Code to EN 12756

support piece,
footboard to ZN 3218 made of galvanised sheet steel,
mounted on baseplate

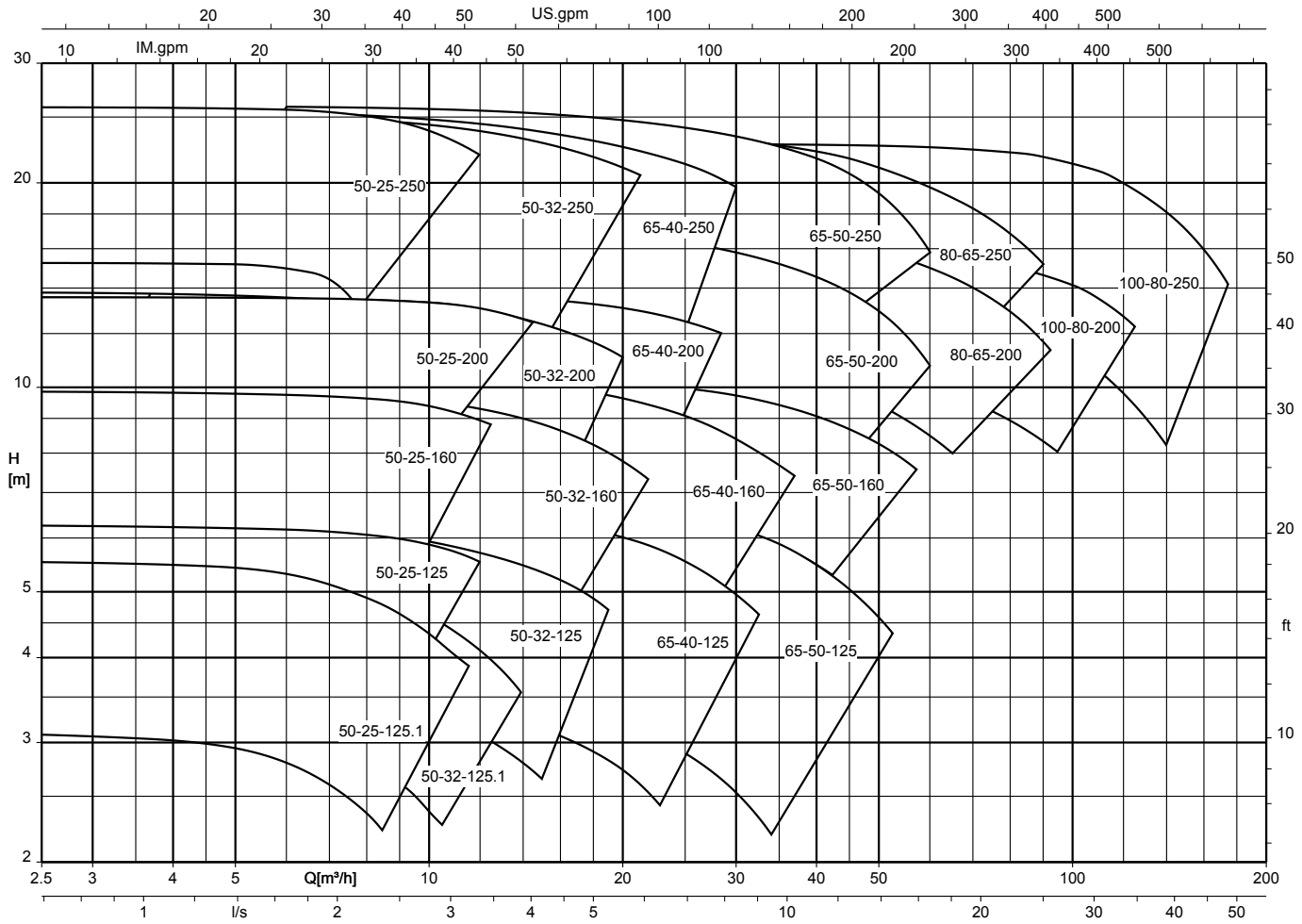
- **Coupling**
 - Flexible coupling
 - Design N, without spacer sleeve, as per ZN 3207.
 - Design N-H with spacer sleeve, as per ZN 3208.
- **Baseplates**
 - Sectional steel for the complete pump set in torsion-resistant design
 - Cast iron to ZN 24259 (ISO 3661) for installation without foundation, torsion-resistant
 - Differences in height between the pump and the motor shafts are adjusted:
 - < 28 mm with shims
 - ≥ 28 mm with adjusting screws to ZN 763
- **Foundation bolts**
 - Including hexagon nut and washer
 - 4 × M16 × 250, ident. number 00 150 399 for baseplates made of sectional steel, width up to 400 mm
 - 6 × M16 × 250, ident. number 00 150 403 for baseplates made of folded sheet steel, width > 400 mm

Selection charts

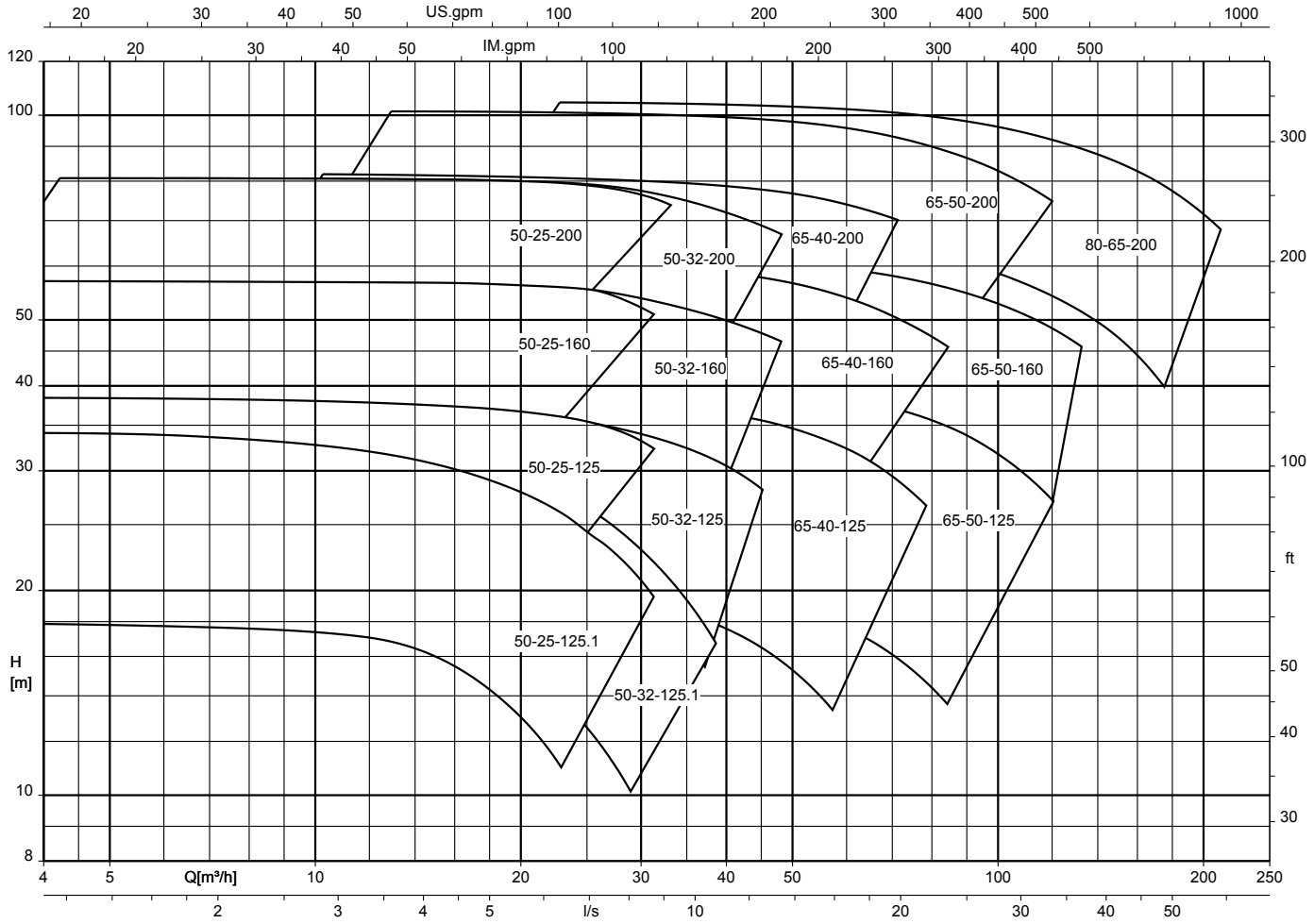
Etachrom L, n = 2900 rpm



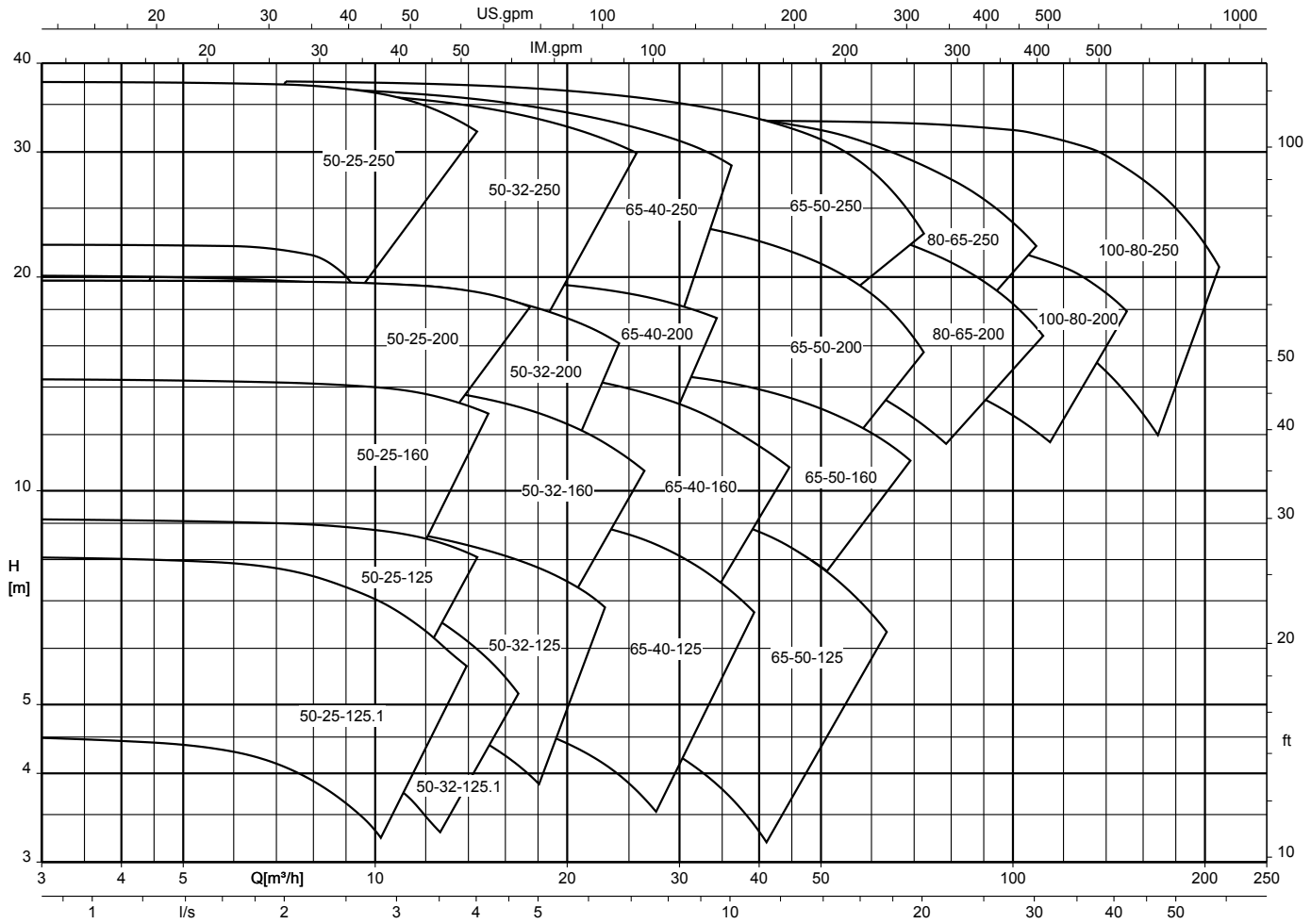
Etachrom L, n = 1450 rpm



Etachrom L, n = 3500 rpm



Etachrom L, n = 1750 rpm



Dimensions and weights

Dimensions

Etachrom L, pump figure 0

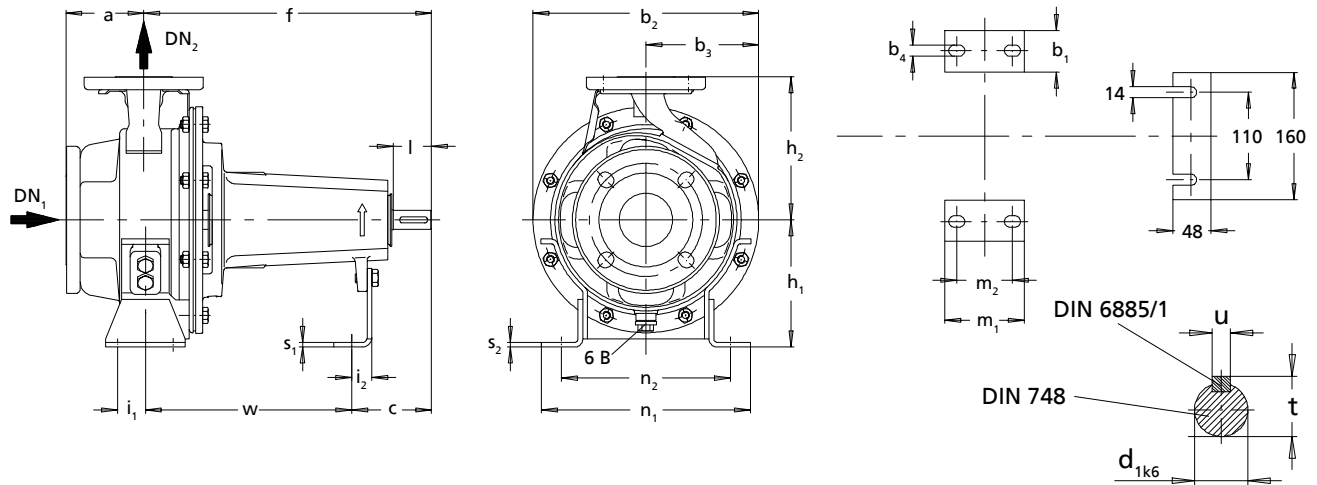


Fig. 4: Etachrom L, pump figure 0 [mm]

6B	Fluid drain	G ^{3/8} = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	b ₄	c	d _{1k6}	f	h ₁	h ₂	i ₁	i ₂	l	m ₁	m ₂	n ₁	n ₂	s ₁	s ₂	t	u	w
050-025-125.1	50	25	80	50	220	110	14	100	24	360	112	140	35	23	50	100	70	190	140	4	5	26,9	8	260
050-025-125	50	25	80	50	220	110	14	100	24	360	112	140	35	23	50	100	70	190	140	4	5	26,9	8	260
050-025-160	50	25	80	50	256	128	14	100	24	360	132	160	35	23	50	100	70	240	190	4	6	26,9	8	260
050-025-200	50	25	80	50	286	143	14	100	24	360	160	180	35	25	50	100	70	240	190	6	6	26,9	8	260
050-025-250	50	25	100	65	346	173	14	100	24	360	180	225	47,5	25	50	125	95	320	250	6	5	26,9	8	260
050-032-125.1	50	32	80	50	220	110	14	100	24	360	112	140	35	23	50	100	70	190	140	4	5	26,9	8	260
050-032-125	50	32	80	50	220	110	14	100	24	360	112	140	35	23	50	100	70	190	140	4	5	26,9	8	260
050-032-160	50	32	80	50	256	128	14	100	24	360	132	160	35	23	50	100	70	240	190	4	6	26,9	8	260
050-032-200	50	32	80	50	286	143	14	100	24	360	160	180	35	25	50	100	70	240	190	6	6	26,9	8	260
050-032-250	50	32	100	65	346	173	14	100	24	360	180	225	47,5	25	50	125	95	320	250	6	5	26,9	8	260
065-040-125	65	40	80	50	220	110	14	100	24	360	112	140	35	23	50	100	70	210	160	4	5	26,9	8	260
065-040-160	65	40	80	50	256	128	14	100	24	360	132	160	35	23	50	100	70	240	190	4	6	26,9	8	260
065-040-200	65	40	100	50	286	143	14	100	24	360	160	180	35	25	50	100	70	265	212	6	6	26,9	8	260
065-040-250	65	40	100	65	346	173	14	100	24	360	180	225	47,5	25	50	125	95	320	250	6	5	26,9	8	260
065-050-125	65	50	100	50	256	128	14	100	24	360	132	160	35	23	50	100	70	240	190	4	6	26,9	8	260
065-050-160	65	50	100	50	256	128	14	100	24	360	160	180	35	25	50	100	70	265	212	6	6	26,9	8	260
065-050-200	65	50	100	50	310	155	14	100	24	360	160	200	35	25	50	100	70	265	212	4	4	26,9	8	260
065-050-250	65	50	100	65	346	173	14	100	24	360	180	225	47,5	25	50	125	95	320	250	6	5	26,9	8	260
080-065-200	80	65	100	65	348	174	14	100	24	360	180	225	47,5	25	50	125	95	320	250	6	5	26,9	8	260
080-065-250	80	65	100	80	348	174	14	130	32	470	200	250	60	24	80	160	120	360	280	6	5	35	10	340
100-080-200	100	80	125	65	348	174	14	130	32	470	180	250	47,5	24	80	125	95	345	280	6	5	35	10	340
100-080-250	100	80	125	80	348	174	18	130	32	470	200	280	60	24	80	160	120	400	315	6	5	35	10	340

Etachrom L 25, pump set

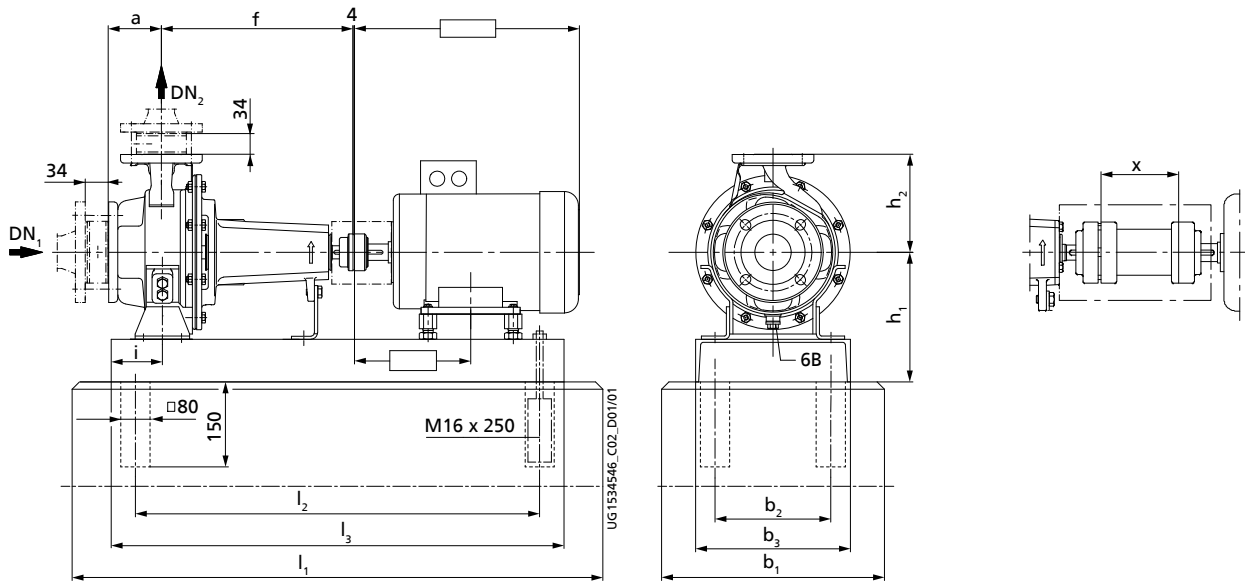




Fig. 5: Etachrom L, pump set, [mm]

6B	Fluid drain	G ³ / ₈ = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	rpm				DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i	[mm]			[mm]						
	1450	1750	2900	3500											[kW]			[mm]						
050-025-125.1	0,55	0,63	-	-	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125.1	-	-	0,75	-	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125.1	-	-	1,10	1,27	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125.1	-	-	1,50	1,75	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125.1	-	-	2,20	2,55	50	25	80	450	240	300	360	212	140	100	950	740	800	1050	840	900	100			
050-025-125.1	-	-	-	3,45	50	25	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100			
050-025-125.1	-	-	-	4,55	50	25	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100			
050-025-125	0,55	0,63	-	-	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125	-	-	1,10	-	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125	-	-	1,50	1,75	50	25	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100			
050-025-125	-	-	2,20	2,55	50	25	80	450	240	300	360	212	140	100	950	740	800	1050	840	900	100			
050-025-125	-	-	3,00	3,45	50	25	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100			
050-025-125	-	-	-	4,55	50	25	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100			
050-025-125	-	-	-	6,30	50	25	80	450	240	300	360	232	140	100	1050	840	900	1150	940	1000	100			
050-025-160	0,55	0,63	-	-	50	25	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100			
050-025-160	-	0,86	-	-	50	25	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100			
050-025-160	-	1,27	-	-	50	25	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100			
050-025-160	-	-	1,50	-	50	25	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100			
050-025-160	-	-	2,20	2,55	50	25	80	450	240	300	360	232	160	100	950	740	800	1050	840	900	100			
050-025-160	-	-	3,00	3,45	50	25	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100			
050-025-160	-	-	4,00	4,55	50	25	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100			
050-025-160	-	-	5,50	6,30	50	25	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100			
050-025-160	-	-	-	8,60	50	25	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100			
050-025-200	0,55	0,63	-	-	50	25	80	450	240	300	360	260	180	100	860	650	710	950	740	800	100			
050-025-200	0,75	0,86	-	-	50	25	80	450	240	300	360	260	180	100	860	650	710	950	740	800	100			
050-025-200	1,10	1,27	-	-	50	25	80	450	240	300	360	260	180	100	860	650	710	950	740	800	100			
050-025-200	-	1,75	-	-	50	25	80	450	240	300	360	260	180	100	950	740	800	1050	840	900	100			
050-025-200	-	2,55	-	-	50	25	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100			
050-025-200	-	-	3,00	-	50	25	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100			
050-025-200	-	-	4,00	-	50	25	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100			
050-025-200	-	-	5,50	6,30	50	25	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100			
050-025-200	-	-	7,50	8,60	50	25	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100			

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i							
	[kW]				[mm]																
050-025-200	-	-	-	12,60	50	25	80	450	240	300	360	260	180	100	1270	1060	1120	1270	1060	1120	100
050-025-200	-	-	-	17,30	50	25	80	450	240	300	360	260	180	100	1270	1060	1120	1270	1060	1120	100
050-025-250	0,75	-	-	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-025-250	1,10	1,27	-	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-025-250	1,50	1,75	-	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-025-250	2,20	2,55	-	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-025-250	-	3,45	-	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-025-250	-	-	5,50	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
050-025-250	-	-	7,50	-	50	25	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
050-025-250	-	-	11,00	-	50	25	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
050-025-250	-	-	15,00	-	50	25	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100

Etachrom L 32, pump set

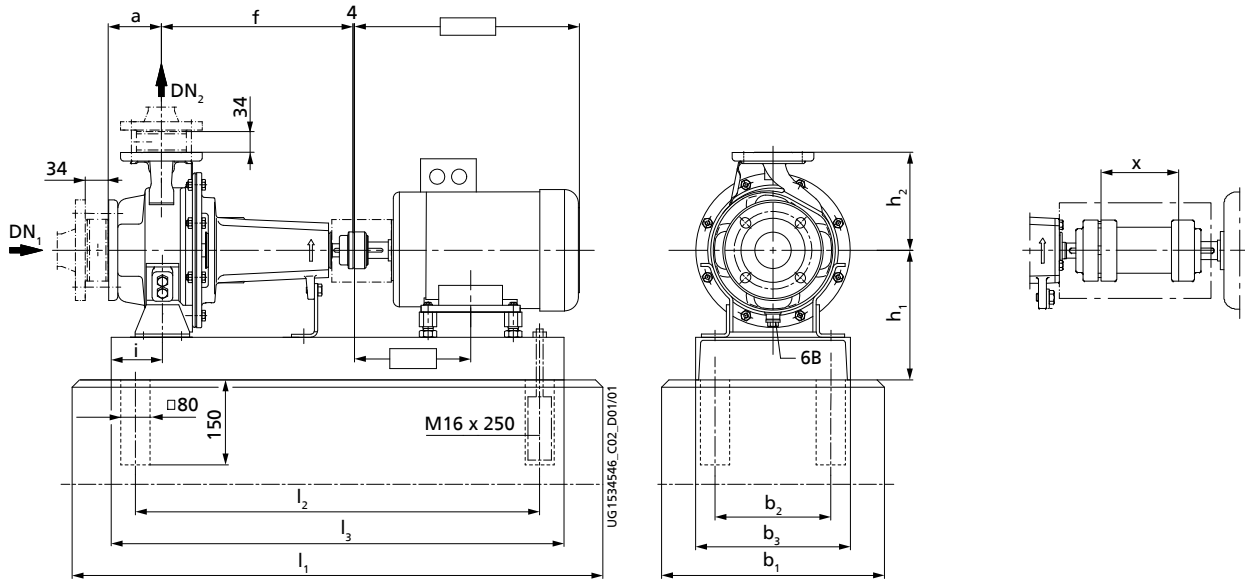




Fig. 6: Etachrom L, pump set, [mm]

6B	Fluid drain	G ³ / ₈ = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i							
															l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	x
															[kW]			[mm]			
050-032-125.1	0,55	0,63	-	-	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125.1	-	-	0,75	-	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125.1	-	-	1,10	1,27	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125.1	-	-	1,50	1,75	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125.1	-	-	2,20	2,55	50	32	80	450	240	300	360	212	140	100	950	740	800	1050	840	900	100
050-032-125.1	-	-	-	3,45	50	32	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
050-032-125.1	-	-	-	4,55	50	32	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
050-032-125	0,55	0,63	-	-	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125	-	0,86	-	-	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125	-	-	1,10	-	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125	-	-	1,50	1,75	50	32	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
050-032-125	-	-	2,20	2,55	50	32	80	450	240	300	360	212	140	100	950	740	800	1050	840	900	100
050-032-125	-	-	3,00	3,45	50	32	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
050-032-125	-	-	-	4,55	50	32	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
050-032-125	-	-	-	6,30	50	32	80	450	240	300	360	232	140	100	1050	840	900	1150	940	1000	100
050-032-160	0,55	0,63	-	-	50	32	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100
050-032-160	0,75	0,86	-	-	50	32	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100
050-032-160	-	1,27	-	-	50	32	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100
050-032-160	-	1,75	-	-	50	32	80	450	240	300	360	232	160	100	950	740	800	1050	840	900	100
050-032-160	-	-	2,20	2,55	50	32	80	450	240	300	360	232	160	100	950	740	800	1050	840	900	100
050-032-160	-	-	3,00	3,45	50	32	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
050-032-160	-	-	4,00	4,55	50	32	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
050-032-160	-	-	5,50	6,30	50	32	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
050-032-160	-	-	-	8,60	50	32	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
050-032-160	-	-	-	12,60	50	32	80	500	280	350	360	260	160	100	1270	1060	1120	1270	1060	1120	100
050-032-200	0,55	0,63	-	-	50	32	80	450	240	300	360	260	180	100	860	650	710	950	740	800	100
050-032-200	0,75	0,86	-	-	50	32	80	450	240	300	360	260	180	100	860	650	710	950	740	800	100
050-032-200	1,10	1,27	-	-	50	32	80	450	240	300	360	260	180	100	860	650	710	950	740	800	100
050-032-200	-	1,75	-	-	50	32	80	450	240	300	360	260	180	100	950	740	800	1050	840	900	100
050-032-200	-	2,55	-	-	50	32	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
050-032-200	-	-	3,00	-	50	32	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
050-032-200	-	-	4,00	4,55	50	32	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i							
	[kW]				[mm]																
050-032-200	-	-	5,50	6,30	50	32	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
050-032-200	-	-	7,50	8,60	50	32	80	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
050-032-200	-	-	11,00	12,60	50	32	80	500	280	350	360	260	180	100	1270	1060	1120	1270	1060	1120	100
050-032-200	-	-	-	17,30	50	32	80	500	280	350	360	260	180	100	1270	1060	1120	1270	1060	1120	100
050-032-250	0,75	-	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-032-250	1,10	1,27	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-032-250	1,50	1,75	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-032-250	2,20	2,55	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-032-250	3,00	3,45	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
050-032-250	-	4,55	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
050-032-250	-	6,30	-	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
050-032-250	-	-	5,50	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
050-032-250	-	-	7,50	-	50	32	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
050-032-250	-	-	11,00	-	50	32	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
050-032-250	-	-	15,00	-	50	32	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
050-032-250	-	-	18,50	-	50	32	100	500	280	350	360	280	225	112	1270	1060	1120	1400	1190	1250	100

Etachrom L 40, pump set

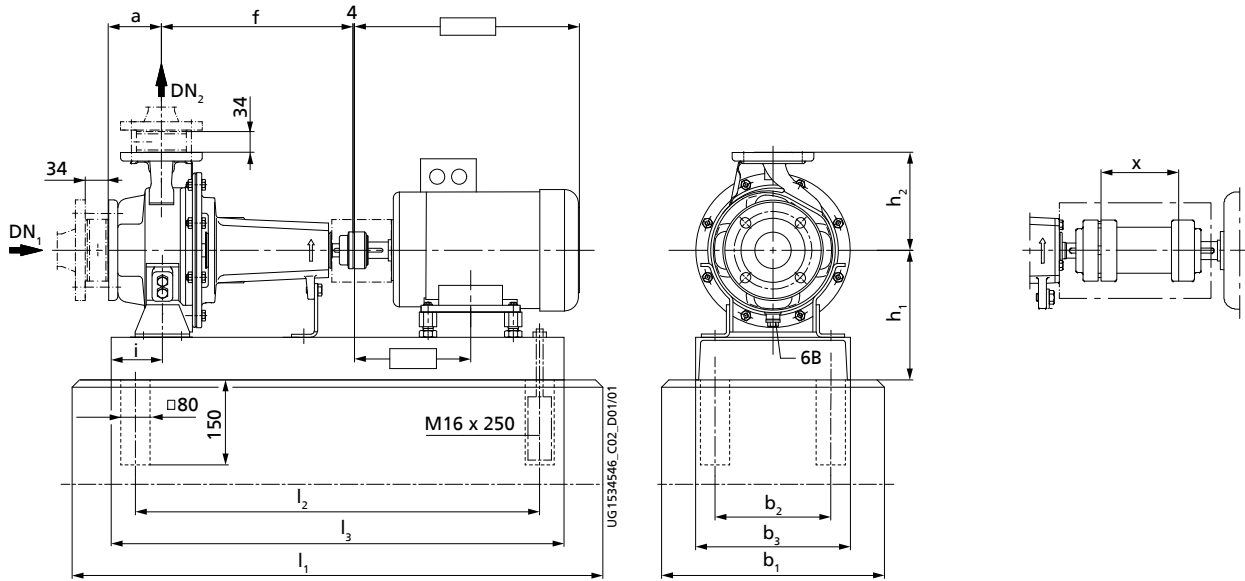




Fig. 7: Etachrom L, pump set, [mm]

6B	Fluid drain	G ^{3/8} = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	rpm				DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i	mm			mm			
	1450	1750	2900	3500											mm			mm			
	[kW]														mm			mm			
065-040-125	0,55	0,63	-	-	65	40	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
065-040-125	-	0,86	-	-	65	40	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
065-040-125	-	1,27	-	-	65	40	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
065-040-125	-	-	1,50	1,75	65	40	80	450	240	300	360	212	140	100	860	650	710	950	740	800	100
065-040-125	-	-	2,20	2,55	65	40	80	450	240	300	360	212	140	100	950	740	800	1050	840	900	100
065-040-125	-	-	3,00	3,45	65	40	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
065-040-125	-	-	4,00	4,55	65	40	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
065-040-125	-	-	5,50	-	65	40	80	450	240	300	360	212	140	100	1050	840	900	1150	940	1000	100
065-040-125	-	-	-	6,30	65	40	80	450	240	300	360	232	140	100	1050	840	900	1150	940	1000	100
065-040-125	-	-	-	8,60	65	40	80	450	240	300	360	232	140	100	1050	840	900	1150	940	1000	100
065-040-125	-	-	-	12,60	65	40	80	500	280	350	360	260	140	100	1270	1060	1120	1270	1060	1120	100
065-040-160	0,55	0,63	-	-	65	40	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100
065-040-160	0,75	0,86	-	-	65	40	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100
065-040-160	1,10	1,27	-	-	65	40	80	450	240	300	360	232	160	100	860	650	710	950	740	800	100
065-040-160	1,50	1,75	-	-	65	40	80	450	240	300	360	232	160	100	950	740	800	1050	840	900	100
065-040-160	-	2,55	-	-	65	40	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
065-040-160	-	-	3,00	3,45	65	40	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
065-040-160	-	-	4,00	4,55	65	40	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
065-040-160	-	-	5,50	6,30	65	40	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
065-040-160	-	-	7,50	8,60	65	40	80	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100
065-040-160	-	-	11,00	-	65	40	80	500	280	350	360	232	160	100	1270	1060	1120	1270	1060	1120	100
065-040-160	-	-	-	12,60	65	40	80	500	280	350	360	260	160	100	1270	1060	1120	1270	1060	1120	100
065-040-160	-	-	-	17,30	65	40	80	500	280	350	360	260	160	100	1270	1060	1120	1270	1060	1120	100
065-040-200	0,75	-	-	-	65	40	100	450	240	300	360	260	180	100	860	650	710	950	740	800	100
065-040-200	1,10	1,27	-	-	65	40	100	450	240	300	360	260	180	100	860	650	710	950	740	800	100
065-040-200	1,50	1,75	-	-	65	40	100	450	240	300	360	260	180	100	950	740	800	1050	840	900	100
065-040-200	-	2,55	-	-	65	40	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
065-040-200	-	3,45	-	-	65	40	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
065-040-200	-	-	5,50	6,30	65	40	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
065-040-200	-	-	7,50	8,60	65	40	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100
065-040-200	-	-	11,00	12,60	65	40	100	500	280	350	360	260	180	100	1270	1060	1120	1270	1060	1120	100
065-040-200	-	-	-	17,30	65	40	100	500	280	350	360	260	180	100	1270	1060	1120	1270	1060	1120	100

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i							
	[kW]				[mm]																
065-040-200	-	-	-	21,30	65	40	100	500	280	350	360	260	180	100	1270	1060	1120	1400	1190	1250	100
065-040-200	-	-	-	24,50	65	40	100	550	320	400	360	290	180	100	1400	1190	1250	1400	1190	1250	100
065-040-250	1,10	1,27	-	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-040-250	1,50	1,75	-	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-040-250	2,20	2,55	-	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-040-250	3,00	3,45	-	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-040-250	-	4,55	-	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-040-250	-	6,30	-	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
065-040-250	-	-	7,50	-	65	40	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
065-040-250	-	-	11,00	-	65	40	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
065-040-250	-	-	15,00	-	65	40	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
065-040-250	-	-	18,50	-	65	40	100	500	280	350	360	280	225	112	1270	1060	1120	1400	1190	1250	100
065-040-250	-	-	22,00	-	65	40	100	550	320	400	360	280	225	112	1400	1190	1250	1400	1190	1250	100

Etachrom L 50, pump set

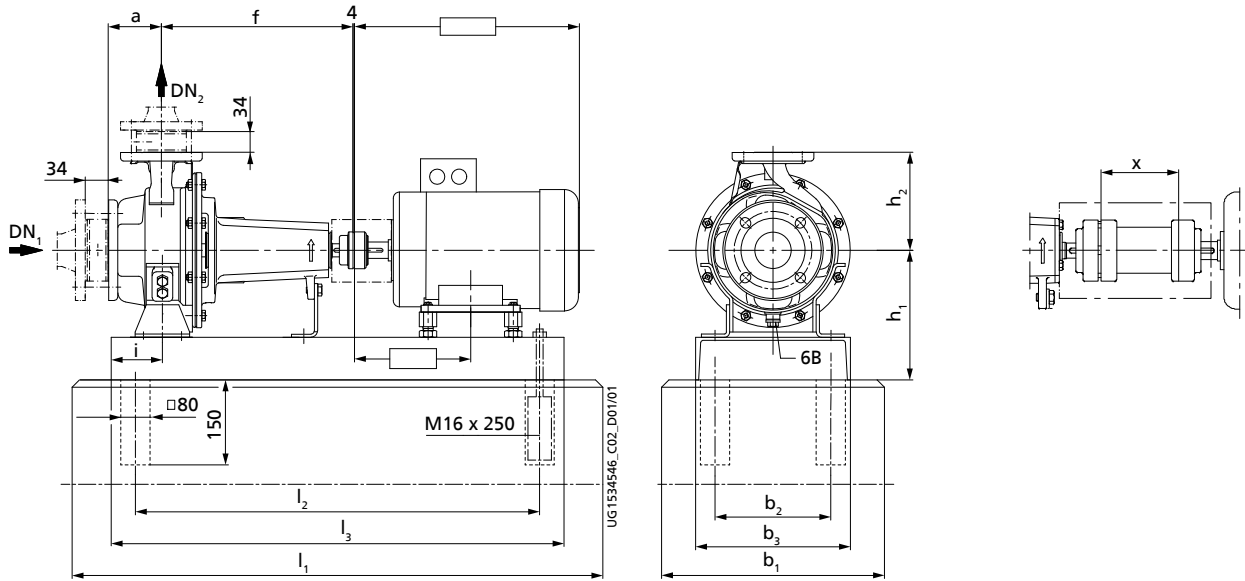




Fig. 8: Etachrom L, pump set, [mm]

6B	Fluid drain	G ^{3/8} = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i														
															l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	x							
															[kW]							[mm]						
065-050-125	0,55	0,63	-	-	65	50	100	450	240	300	360	232	160	100	860	650	710	950	740	800	100							
065-050-125	0,75	0,86	-	-	65	50	100	450	240	300	360	232	160	100	860	650	710	950	740	800	100							
065-050-125	1,10	1,27	-	-	65	50	100	450	240	300	360	232	160	100	860	650	710	950	740	800	100							
065-050-125	-	1,75	-	-	65	50	100	450	240	300	360	232	160	100	950	740	800	1050	840	900	100							
065-050-125	-	2,55	-	-	65	50	100	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100							
065-050-125	-	-	3,00	3,45	65	50	100	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100							
065-050-125	-	-	4,00	4,55	65	50	100	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100							
065-050-125	-	-	5,50	6,30	65	50	100	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100							
065-050-125	-	-	7,50	8,60	65	50	100	450	240	300	360	232	160	100	1050	840	900	1150	940	1000	100							
065-050-125	-	-	-	12,60	65	50	100	500	280	350	360	260	160	100	1270	1060	1120	1270	1060	1120	100							
065-050-125	-	-	-	17,30	65	50	100	500	280	350	360	260	160	100	1270	1060	1120	1270	1060	1120	100							
065-050-160	0,75	0,86	-	-	65	50	100	450	240	300	360	260	180	100	860	650	710	950	740	800	100							
065-050-160	1,10	1,27	-	-	65	50	100	450	240	300	360	260	180	100	860	650	710	950	740	800	100							
065-050-160	1,50	1,75	-	-	65	50	100	450	240	300	360	260	180	100	950	740	800	1050	840	900	100							
065-050-160	2,20	2,55	-	-	65	50	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100							
065-050-160	-	3,45	-	-	65	50	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100							
065-050-160	-	-	5,50	6,30	65	50	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100							
065-050-160	-	-	7,50	8,60	65	50	100	450	240	300	360	260	180	100	1050	840	900	1150	940	1000	100							
065-050-160	-	-	11,00	12,60	65	50	100	500	280	350	360	260	180	100	1270	1060	1120	1270	1060	1120	100							
065-050-160	-	-	15,00	17,30	65	50	100	500	280	350	360	260	180	100	1270	1060	1120	1270	1060	1120	100							
065-050-160	-	-	-	21,30	65	50	100	500	280	350	360	260	180	100	1270	1060	1120	1400	1190	1250	100							
065-050-160	-	-	-	24,50	65	50	100	550	320	400	360	290	180	100	1400	1190	1250	1400	1190	1250	100							
065-050-200	0,75	-	-	-	65	50	100	450	240	300	360	260	200	100	860	650	710	950	740	800	100							
065-050-200	1,10	1,27	-	-	65	50	100	450	240	300	360	260	200	100	860	650	710	950	740	800	100							
065-050-200	1,50	1,75	-	-	65	50	100	450	240	300	360	260	200	100	950	740	800	1050	840	900	100							
065-050-200	2,20	2,55	-	-	65	50	100	450	240	300	360	260	200	100	1050	840	900	1150	940	1000	100							
065-050-200	3,00	3,45	-	-	65	50	100	450	240	300	360	260	200	100	1050	840	900	1150	940	1000	100							
065-050-200	-	4,55	-	-	65	50	100	450	240	300	360	260	200	100	1050	840	900	1150	940	1000	100							
065-050-200	-	6,30	-	-	65	50	100	450	240	300	360	260	200	100	1050	840	900	1150	940	1000	100							
065-050-200	-	-	7,50	8,60	65	50	100	450	240	300	360	260	200	100	1050	840	900	1150	940	1000	100							
065-050-200	-	-	11,00	-	65	50	100	500	280	350	360	260	200	100	1270	1060	1120	1270	1060	1120	100							
065-050-200	-	-	-	12,60	65	50	100	500	280	350	360	290	200	100	1270	1060	1120	1270	1060	1120	100							

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i							
	[kW]				[mm]																
	l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	x														
065-050-200	-	-	15,00	-	65	50	100	500	280	350	360	260	200	100	1270	1060	1120	1270	1060	1120	100
065-050-200	-	-	-	17,30	65	50	100	500	280	350	360	290	200	100	1270	1060	1120	1270	1060	1120	100
065-050-200	-	-	18,50	-	65	50	100	500	280	350	360	260	200	100	1270	1060	1120	1400	1190	1250	100
065-050-200	-	-	-	21,30	65	50	100	500	280	350	360	290	200	100	1270	1060	1120	1400	1190	1250	100
065-050-200	-	-	22,00	-	65	50	100	550	320	400	360	290	200	100	1400	1060	1120	1400	1190	1250	100
065-050-200	-	-	-	24,50	65	50	100	550	320	400	360	310	200	100	1400	1190	1250	1400	1190	1250	100
065-050-200	-	-	-	33,50	65	50	100	550	320	400	360	310	200	100	1400	1190	1250	1400	1190	1250	100
065-050-200	-	-	-	41,50	65	50	100	550	320	400	360	310	200	100	1400	1190	1250	1400	1190	1250	100
065-050-250	1,50	-	-	-	65	50	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-050-250	2,20	2,55	-	-	65	50	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-050-250	3,00	3,45	-	-	65	50	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-050-250	4,00	4,55	-	-	65	50	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-050-250	5,50	-	-	-	65	50	100	500	280	350	360	280	225	112	1050	840	900	1050	840	900	100
065-050-250	-	6,30	-	-	65	50	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	100
065-050-250	-	8,60	-	-	65	50	100	500	280	350	360	280	225	112	1150	940	1000	1270	1060	1120	100
065-050-250	-	12,60	-	-	65	50	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
065-050-250	-	-	11,00	-	65	50	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
065-050-250	-	-	15,00	-	65	50	100	500	280	350	360	280	225	112	1270	1060	1120	1270	1060	1120	100
065-050-250	-	-	18,50	-	65	50	100	500	280	350	360	280	225	112	1270	1060	1120	1400	1190	1250	100
065-050-250	-	-	22,00	-	65	50	100	550	320	400	360	290	225	112	1400	1190	1250	1400	1190	1250	100
065-050-250	-	-	30,00	-	65	50	100	550	320	400	360	310	225	112	1400	1190	1250	1400	1190	1250	100
065-050-250	-	-	37,00	-	65	50	100	550	320	400	360	310	225	112	1400	1190	1250	1400	1190	1250	100

Etachrom L 65, pump set

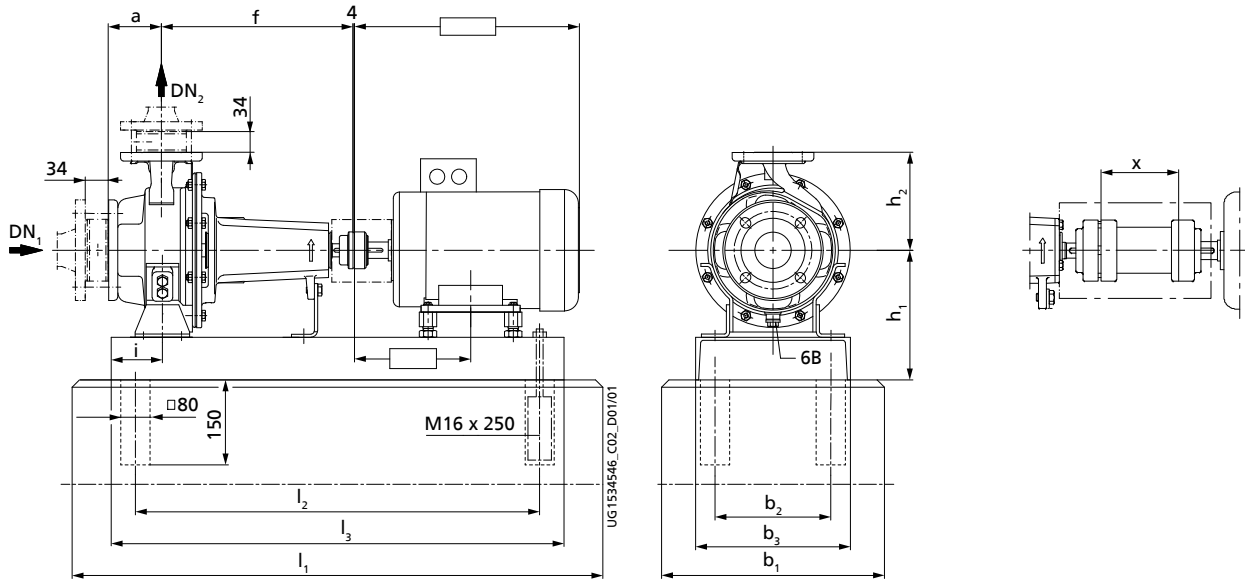


Fig. 9: Etachrom L, pump set, [mm]

Illustration 1

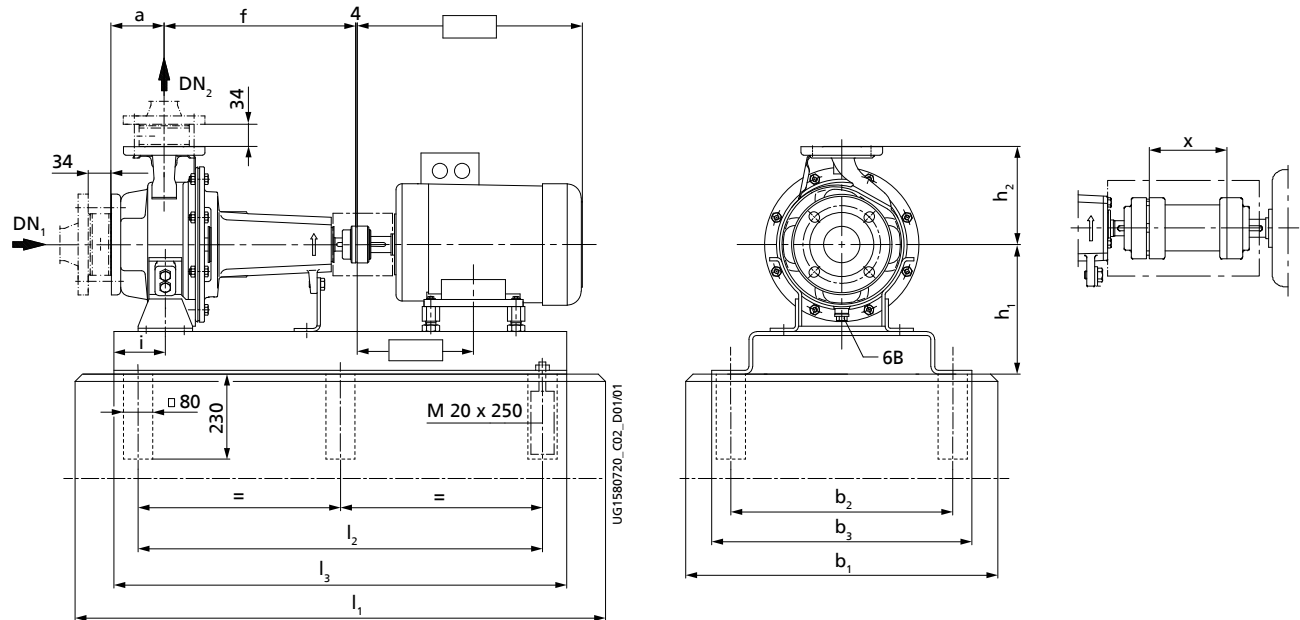


Fig. 10: Etachrom L, pump set, [mm]

Illustration 2

6B	Fluid drain	G ^{3/8} = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i																
	[kW]														[mm]															
															l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	x									
080-065-200 ²⁰⁾	1,50	-	-	-	80	65	100	500	280	350	360	280	225	112	950	740	800	1050	840	900	140									
080-065-200 ²⁰⁾	2,20	2,55	-	-	80	65	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	140									
080-065-200 ²⁰⁾	3,00	3,45	-	-	80	65	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	140									
080-065-200 ²⁰⁾	4,00	4,55	-	-	80	65	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	140									
080-065-200 ²⁰⁾	-	6,30	-	-	80	65	100	500	280	350	360	280	225	112	1050	840	900	1150	940	1000	140									
080-065-200 ²⁰⁾	-	8,60	-	-	80	65	100	500	280	350	360	280	225	112	1150	940	1000	1270	1060	1120	140									
080-065-200 ²⁰⁾	-	-	11,00	12,60	80	65	100	500	280	350	360	280	225	112	1270	1060	1120	1400	1190	1250	140									
080-065-200 ²⁰⁾	-	-	15,00	17,30	80	65	100	500	280	350	360	280	225	112	1270	1060	1120	1400	1190	1250	140									
080-065-200 ²⁰⁾	-	-	18,50	21,30	80	65	100	500	280	350	360	280	225	112	1270	1060	1120	1400	1190	1250	140									
080-065-200 ²⁰⁾	-	-	22,00	24,50	80	65	100	550	320	400	360	290	225	112	1400	1190	1250	1400	1190	1250	140									
080-065-200 ²⁰⁾	-	-	30,00	33,50	80	65	100	550	320	400	360	310	225	112	1400	1190	1250	1400	1190	1250	140									
080-065-200 ²⁰⁾	-	-	37,00	41,50	80	65	100	550	320	400	360	310	225	112	1400	1190	1250	1400	1190	1250	140									
080-065-200 ²¹⁾	-	-	-	51,00	80	65	100	750	550	590	360	365	225	112	1550	940	1400	1550	940	1400	140									
080-065-250 ²⁰⁾	2,20	-	-	-	80	65	100	550	320	400	470	310	250	130	1150	940	1000	1400	1190	1250	140									
080-065-250 ²⁰⁾	3,00	3,45	-	-	80	65	100	550	320	400	470	310	250	130	1150	940	1000	1400	1190	1250	140									
080-065-250 ²⁰⁾	4,00	4,55	-	-	80	65	100	550	320	400	470	310	250	130	1150	940	1000	1400	1190	1250	140									
080-065-250 ²⁰⁾	5,50	6,30	-	-	80	65	100	550	320	400	470	310	250	130	1150	940	1000	1400	1190	1250	140									
080-065-250 ²⁰⁾	7,50	8,60	-	-	80	65	100	550	320	400	470	310	250	130	1150	940	1000	1400	1190	1250	140									
080-065-250 ²⁰⁾	-	12,6	-	-	80	65	100	550	320	400	470	310	250	130	1400	1190	1250	1570	1360	1420	140									
080-065-250 ²⁰⁾	-	-	15,00	-	80	65	100	550	320	400	470	310	250	130	1400	1190	1250	1570	1360	1420	140									
080-065-250 ²⁰⁾	-	-	18,50	-	80	65	100	550	320	400	470	310	250	130	1400	1190	1250	1570	1360	1420	140									
080-065-250 ²⁰⁾	-	-	22,00	-	80	65	100	550	320	400	470	310	250	130	1400	1190	1250	1570	1360	1420	140									
080-065-250 ²⁰⁾	-	-	30,00	-	80	65	100	550	320	400	470	310	250	130	1400	1190	1250	1570	1360	1420	140									
080-065-250 ²⁰⁾	-	-	37,00	-	80	65	100	550	320	400	470	310	250	130	1400	1190	1250	1570	1360	1420	140									
080-065-250 ²¹⁾	-	-	45,00	-	80	65	100	750	550	590	470	365	250	130	1550	940	1400	1550	940	1400	140									

20) Illustration 1
21) Illustration 2

Etachrom L 80, pump set

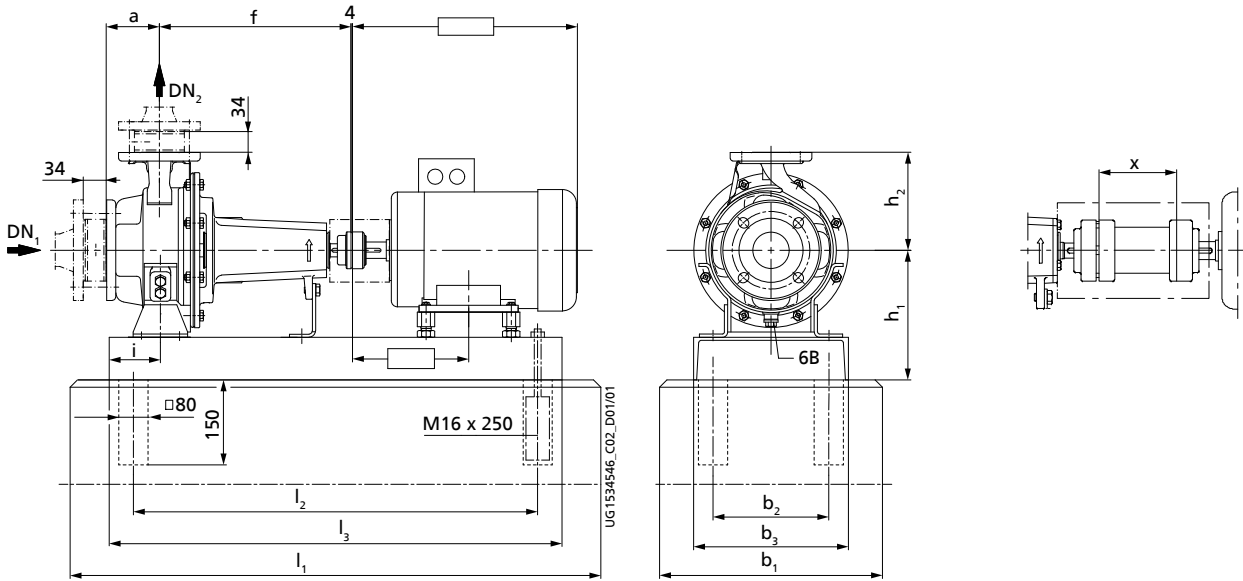


Fig. 11: Etachrom L, pump set, [mm]

Illustration 1

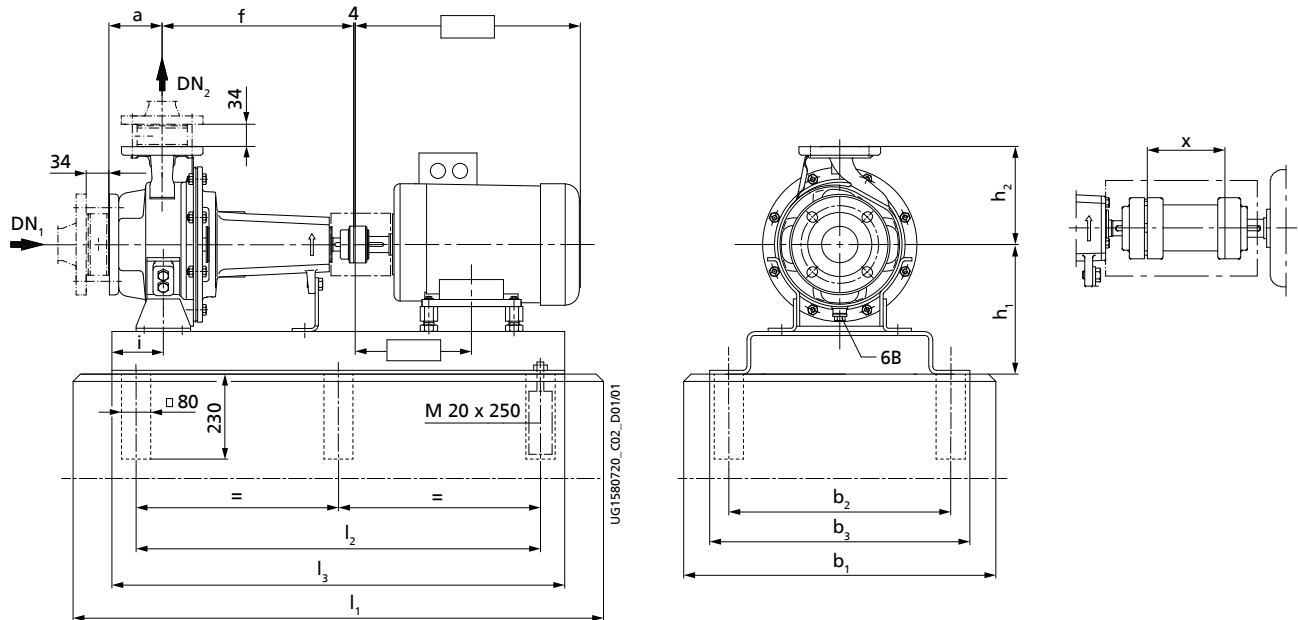


Fig. 12: Etachrom L, pump set, [mm]

Illustration 2

6B	Fluid drain	G ³ / ₈ = ISO 228/1
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DN = EN 1092-1/DN.../PN 16/B

Dimensions

Size	1450 rpm	1750 rpm	2900 rpm	3500 rpm	DN ₁	DN ₂	a	b ₁	b ₂	b ₃	f	h ₁	h ₂	i																
	[kW]														[mm]															
															l ₁	l ₂	l ₃	l ₁	l ₂	l ₃	x									
080-080-200 ²²⁾	2,20	-	-	-	100	80	125	500	280	350	470	280	250	112	1150	940	1000	1270	1060	1120	140									
080-080-200 ²²⁾	3,00	3,45	-	-	100	80	125	500	280	350	470	280	250	112	1150	940	1000	1270	1060	1120	140									
080-080-200 ²²⁾	4,00	4,55	-	-	100	80	125	500	280	350	470	280	250	112	1150	940	1000	1270	1060	1120	140									
080-080-200 ²²⁾	5,50	6,30	-	-	100	80	125	500	280	350	470	280	250	112	1150	940	1000	1270	1060	1120	140									
080-080-200 ²²⁾	-	8,60	-	-	100	80	125	500	280	350	470	280	250	112	1270	1060	1120	1400	1190	1250	140									
080-080-200 ²²⁾	-	12,60	-	-	100	80	125	500	280	350	470	280	250	112	1270	1060	1120	1400	1190	1250	140									
080-080-200 ²²⁾	-	-	15,00	-	100	80	125	550	320	400	470	290	250	112	1400	1190	1250	1570	1360	1420	140									
080-080-200 ²²⁾	-	-	18,50	-	100	80	125	550	320	400	470	290	250	112	1400	1190	1250	1570	1360	1420	140									
080-080-200 ²²⁾	-	-	22,00	-	100	80	125	550	320	400	470	290	250	112	1400	1190	1250	1570	1360	1420	140									
080-080-200 ²²⁾	-	-	30,00	-	100	80	125	550	320	400	470	310	250	112	1400	1190	1250	1570	1360	1420	140									
080-080-200 ²²⁾	-	-	37,00	-	100	80	125	550	320	400	470	310	250	112	1400	1190	1250	1570	1360	1420	140									
080-080-200 ²³⁾	-	-	45,00	-	100	80	125	750	550	590	470	365	250	112	1550	940	1400	1550	940	1400	140									
080-080-250 ²²⁾	3,00	-	-	-	100	80	125	550	320	400	470	310	280	130	1150	940	1000	1400	1190	1250	140									
080-080-250 ²²⁾	4,00	4,55	-	-	100	80	125	550	320	400	470	310	280	130	1150	940	1000	1400	1190	1250	140									
080-080-250 ²²⁾	5,50	6,30	-	-	100	80	125	550	320	400	470	310	280	130	1150	940	1000	1400	1190	1250	140									
080-080-250 ²²⁾	7,50	8,60	-	-	100	80	125	550	320	400	470	310	280	130	1150	940	1000	1400	1190	1250	140									
080-080-250 ²²⁾	11,00	12,60	-	-	100	80	125	550	320	400	470	310	280	130	1400	1190	1250	1570	1360	1420	140									
080-080-250 ²²⁾	-	17,30	-	-	100	80	125	550	320	400	470	310	280	130	1400	1190	1250	1570	1360	1420	140									
080-080-250 ²²⁾	-	21,30	-	-	100	80	125	550	320	400	470	310	280	130	1400	1190	1250	1570	1360	1420	140									

22) Illustration 1
23) Illustration 2

Dimensions for versions with PumpMeter

An accessories kit is required for using PumpMeter.
Comprising:

- Pressure gauge connection (intermediate flange) 1.4571
- Hexagon head bolts: 8.8, ISO 4017
- Gasket: DPAF (asbestos-free), DIN 2690

As intermediate flanges need to be fitted, the dimensions differ.

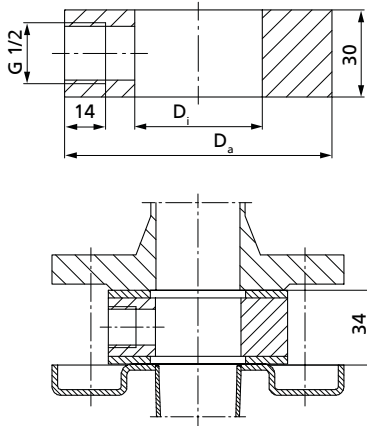


Fig. 13: Dimensions of the pressure gauge connection (intermediate flange) [mm]

Selection table

DN	Pressure gauge connection		Hexagon head bolts	Gasket	Mat. No.
	D _i	D _a			
	[mm]				
25	29	70	4 × M12 × 80	1 × 25, PN 40	47064190
32	36	82	4 × M16 × 90	1 × 32, PN 40	47064192
40	44	92	4 × M16 × 90	1 × 40, PN 40	47064194
50	54	107	4 × M16 × 90	1 × 50, PN 40	47064196
65	69	127	4 × M16 × 90	1 × 65, PN 40	47064198
80	85	142	4 × M16 × 90	1 × 80, PN 40	47089653
100	105	162	4 × M16 × 90	1 × 100, PN 16	47089652

Pump component weights

Selection table

Size	Pump	Pump casing with foot	Intermediate piece	Discharge cover	Support foot	Shaft	Impeller	Bearing bracket
		101/182	132	163	183	210	230	330
		[kg]						
050-025-125.1	19	3,6	-	0,3	0,3	1,8	0,9	11,0
050-025-125	19	3,6	-	0,3	0,3	1,8	0,9	11,0
050-025-160	22	4,3	-	0,6	0,4	1,8	1,2	13,0
050-025-200	27	5,9	-	0,8	0,5	1,8	1,8	15,2
050-025-250	40	7,3	12,4	1,5	0,9	2,1	5,5	8,8
050-032-125.1	19	3,7	-	0,3	0,3	1,8	0,9	11,0
050-032-125	19	3,7	-	0,3	0,3	1,8	0,9	11,0
050-032-160	22	4,4	-	0,6	0,4	1,8	1,2	13,0
050-032-200	27	6,0	-	0,8	0,5	1,8	1,8	15,2
050-032-250	40	7,4	12,4	1,5	0,9	2,1	5,5	8,8
065-040-125	19	4,2	-	0,3	0,3	1,8	0,9	11,0
065-040-160	23	5,1	-	0,6	0,4	1,8	1,2	13,0
065-040-200	27	6,8	-	0,8	0,5	1,8	1,8	15,2
065-040-250	40	7,8	12,4	1,5	0,9	2,1	5,1	8,8
065-050-125	24	5,9	-	0,6	0,4	1,8	1,0	13,8
065-050-160	26	6,8	-	0,7	0,5	1,8	1,6	13,8

Size	Pump	Pump casing with foot	Intermediate piece	Discharge cover	Support foot	Shaft	Impeller	Bearing bracket
		101/182	132	163	183	210	230	330
	[kg]							
065-050-200	35	7,8	8,7	1,1	0,5	2,1	4,9	8,8
065-050-250	42	8,2	12,4	1,5	0,9	2,1	6,6	8,8
080-065-200	42	9,0	12,4	1,5	0,9	2,1	5,6	8,8
080-065-250	55	9,6	12,7	1,5	1,0	4,0	7,8	16,8
100-080-200	56	11,3	12,7	1,5	0,6	4,0	7,5	16,8
100-080-250	59	11,9	12,7	1,5	1,0	4,0	9,6	16,8

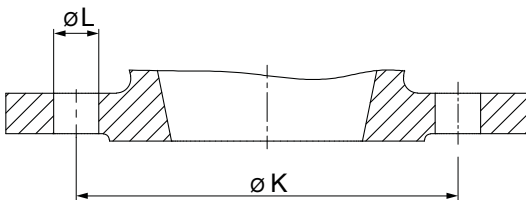
Flange dimensions
Dimensions for pump flanges made of stainless steel to EN 1092-1


Fig. 14: Flange (example)

Flange dimensions [mm]

Nominal size	PN 16 / 12 bar	
	Ø K	Number and Ø of holes (Ø L)
25	85	4 × Ø14
32	100	4 × Ø18
40	110	4 × Ø18
50	125	4 × Ø18
65	145	4 × Ø18
80	160	8 × Ø18
100	180	8 × Ø18

Interchangeability of Etachrom L and Etachrom B pump components

 Pump components²⁴⁾ Etachrom L

Size	Pump casing	Intermediate piece	Discharge cover	Foot	Support foot	Shaft	Impeller	Radial ball bearing Drive end	Radial ball bearing Pump end	Bearing bracket	Bearing cover Drive end	Bearing cover Pump end	Gasket	Joint ring	Joint ring	O-ring	Mechanical seal	Casing wear ring Suction side	Casing wear ring Discharge side	Shaft sleeve
	101	132.01	163	182	183	210	230	321.02	321.01	330	360.02	360.01	400.75	411.77	411.78	412.35	433	502.01	502.02	523
050-025-125.1	1	X	1*	1	1	1	1*	1	1	1	1	1	X	X	X	1*	1*	1*	X	X
050-025-125	1	X	1*	1	1	1	2*	1	1	1	1	1	X	X	X	1*	1*	1*	X	X
050-025-160	○	X	5*	2	2	1	3*	1	1	2	1	1	X	X	X	2*	1*	1*	X	X
050-025-200	○	X	2*	3	3	1	4*	1	1	3	1	1	X	X	X	3*	1*	7*	1*	X
050-025-250	○	1*	3*	X	4	2	5*	1	3	4	1	3	X	X	X	4*	2*	6*	2*	X
050-032-125.1	2	X	1*	1	1	1	1*	1	1	1	1	1	X	X	X	1*	1*	1*	X	X
050-032-125	2	X	1*	1	1	1	2*	1	1	1	1	1	X	X	X	1*	1*	1*	X	X
050-032-160	○	X	5*	2	2	1	3*	1	1	2	1	1	X	X	X	2*	1*	1*	X	X
050-032-200	○	X	2*	3	3	1	4*	1	1	3	1	1	X	X	X	3*	1*	7*	1*	X
050-032-250	○	1*	3*	X	4	2	5*	1	3	4	1	3	X	X	X	4*	2*	6*	2*	X

24) Pump components featuring the same number in a column are interchangeable, i.e. same number = same component

Size	Pump casing	Intermediate piece	Discharge cover	Foot	Support foot	Shaft	Impeller	Radial ball bearing Drive end	Radial ball bearing Pump end	Bearing bracket	Bearing cover Drive end	Bearing cover Pump end	Gasket	Joint ring	Joint ring	O-ring	Mechanical seal	Casing wear ring Suction side	Casing wear ring Discharge side	Shaft sleeve
	101	132.01	163	182	183	210	230	321.02	321.01	330	360.02	360.01	400.75	411.77	411.78	412.35	433	502.01	502.02	523
065-040-125	○	✕	1*	○	1	1	○*	1	1	1	1	1	✕	✕	✕	1*	1*	2*	✕	✕
065-040-160	○	✕	○*	2	2	1	○*	1	1	2	1	1	✕	✕	✕	2*	1*	8*	1*	✕
065-040-200	○	✕	2*	○	3	1	○*	1	1	3	1	1	✕	✕	✕	3*	1*	8*	1*	✕
065-040-250	○	1*	3*	✕	4	2	○*	1	3	4	1	3	✕	✕	✕	4*	2*	3*	2*	✕
065-050-125	○	✕	○*	2	2	1	○*	1	1	2	1	1	✕	✕	✕	2*	1*	2*	✕	✕
065-050-160	○	✕	○*	○	3	1	○*	1	1	2	1	1	✕	✕	✕	2*	1*	8*	1*	✕
065-050-200	○	○*	○*	✕	3	2	○*	1	3	4	1	3	✕	✕	✕	○*	2*	3*	2*	✕
065-050-250	○	1*	3*	✕	4	2	○*	1	3	4	1	3	✕	✕	✕	4*	2*	3*	2*	✕
080-065-200	○	1*	○*	✕	4	2	○*	1	3	4	1	3	✕	✕	✕	4*	2*	4*	○*	✕
080-065-250	○	2*	4*	✕	5	3	○*	2	2	5	2	2	1*	1	1	4*	3*	4*	3*	1*
100-080-200	○	2*	4*	✕	○	3	○*	2	2	5	2	2	1*	1	1	4*	3*	5*	3*	1*
100-080-250	○	2*	4*	✕	5	3	○*	2	2	5	2	2	1*	1	1	4*	3*	5*	3*	1*

Symbols key

Symbol	Description
*	Component interchangeable with Etachrom B
○	Components differ
✕	Component not fitted

Recommended spare parts stock for 2 years' operation to DIN 24296

Quantity of spare parts for recommended spare parts stock

Part No.	Description	Number of pumps (including stand-by pumps)							
		2	3	4	5	6 and 7	8 and 9	10 and more	
210	Shaft	1	1	1	2	2	2	20 %	
230	Impeller	1	1	1	2	2	2	20 %	
321.01/.02	Radial ball bearing (set)	1	1	2	2	2	3	25 %	
330	Bearing bracket	-	-	-	-	-	1	2 pcs.	
400.75	Gasket	4	6	8	8	9	10	100 %	
412.35	O-ring	4	6	8	8	9	12	150 %	
433	Mechanical seal	1	1	2	2	2	3	25 %	
502.01	Casing wear ring, suction side	2	2	2	3	3	4	50 %	
502.02 ²⁵⁾	Casing wear ring, discharge side	2	2	2	3	3	4	50 %	
502.06 ²⁶⁾	Casing wear ring, impeller	2	2	2	3	3	4	50 %	
523 ²⁷⁾	Shaft sleeve	2	2	2	3	3	4	50 %	

25) Not for Etachrom L 050-025-125.1, 050-025-125, 050-025-160, 050-032-125.1, 050-032-125, 050-032-160, 065-040-125, 065-050-125

26) Only for Etachrom L 080-065-250, 100-080-250

27) Only for Etachrom L 080-065-250, 100-080-200, 100-080-250

Detailed designation

Designation example

Position																																												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
E	T	C	L	0	5	0	-	0	2	5	-	1	2	5		C	C			A	0	7	D	2	0	1	0	0	0	2	e	x	B	P	D	2		M	K	S	B	I	E	4
See name plate and data sheet																						See data sheet																						

Designation key

Position	Code	Description
1-4	Pump type	
	ETCL	Etachrom L
5-16	Size	
	050	Nominal suction nozzle diameter [mm]
	025	Nominal discharge nozzle diameter [mm]
	125	Nominal impeller diameter [mm]
17	Pump casing material	
	C	1.4571
18	Impeller material	
	C	1.4571/1.4408
19	Design	
	. ²⁸⁾	Standard
	X	Special design BT3D, BT3
20-21	Casing cover	
	. A	Without internal circulation
	E A	External circulation
	F A	External flushing
	A V	Without internal flushing, with vent
22-23	Seal code	
	0 1	Q1Q1VGG
	0 5	Q1Q1M1GG
	0 7	Q1Q1EGG
	0 9	U3U3VGG
	1 0	Q1Q1X4GG
	1 1	BQ1EGG-WA
	1 2	Q12Q1M1GG
	1 7	Q1BVGG
	6 6	Q7Q7EGG
	6 7	Q6Q6X4GG
- -	BT3	
24	Scope of supply	
	A	Pump only (Fig. 0 bareshaft pump)
	D	Pump, baseplate, coupling, coupling guard, motor
25	Shaft unit	
	1	Shaft unit 25.1
	2	Shaft unit 25.2
	3	Shaft unit 35
26-32	Motor rating	
	0002	0.25 kW
	0003	0.37 kW
	0005	0.55 kW
	0007	0.75 kW
	0011	1.1 kW
	0015	1.5 kW
	0022	2.2 kW
	0030	3.0 kW
	0040	4.0 kW
	0055	5.5 kW
0075	7.5 kW	
0110	11.0 kW	

28) Blank

Position	Code	Description
26-32	0150	15.0 KW
	0185	18.5 KW
	0220	22.0 KW
	0300	30.0 KW
	0370	37.0 KW
	0450	45.0 KW
	0550	55.0 KW
33	Product generation	
	B	Etachrom L 08/2015 product generation
34-37	PumpDrive	
	P D 2	PumpDrive 2nd generation
	P D 2 E	PumpDrive 2nd generation, Eco
38	PumpMeter	
	M	PumpMeter
39-41	Motor manufacturer	
	K S B	KSB
	S I E	Siemens
	L O H	Loher
	H A L	Halter
42-44	Efficiency class	
	I E 1	IE1
	I E 2	IE2
	I E 3	IE3
	I E 4	IE4



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