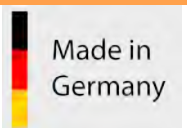




WINTER.pumpen



# TYPE SERIES HM TYPE SERIES HF



SEWAGE / WASTE WATER PUMPS



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# WINTER.group

From the initial idea to the finished product: Through internal manufacturing in our facilities, we have full control over the entire production process. From material selection to final machining and the ultimate measurement on our test bench. This enables us to be flexible in addressing individual customer requirements and providing customized solutions.

## DEVELOPMENT, DESIGN, AND PATTERN MAKING

Our team has extensive experience in designing components and assemblies for various applications. In our model-making department, models are manufactured for the foundry.

## HOUSING PARTS FROM OUR FOUNDRY

At **Eisengießerei Kronach Thomas Winter GmbH**, housing parts are cast and mechanically processed. For consistently high quality, state-of-the-art equipment and our experienced staff are essential.

## STATE-OF-THE-ART SHEET METAL AND STEEL WORK

At our metalworking facility, **Krauss Lüftungsbau GmbH** in Langenzenn, various frames and sheet metal parts are manufactured using state-of-the-art welding robots, laser cutting, and bending machines.

## MACHINING AND MANUFACTURING

Our turning shop and milling shop at the plant in Hilpoltstein enable the machining of all cutting components and manufacturing processes, ensuring consistent high precision and control.

## CONTROL CABINET CONSTRUCTION

We also design and manufacture control cabinets for complex pump systems such as sprinkler units or vacuum systems. These control cabinets are essential for the control and monitoring of the systems and are manufactured according to strict technical standards.

## ASSEMBLY AND MEASUREMENTS

Our assembly department is responsible for the careful and precise assembly of all components. Finally, the performance of our pumps is verified through our in-house test bench to ensure consistently outstanding quality for our customers.



**EISENGIEßEREI  
KRONACH**  
THOMAS WINTER GmbH



**KRAUSS**  
LÜFTUNGSBAU

## TYPE SERIES HM / HF



Sewage pumps type series HM and HF are single-stage, self-priming centrifugal pumps designed for the conveyance of contaminated and slightly solid-laden media. They are characterized by their robust construction, high efficiency, and versatile applications.

The application areas of sewage water pumps type series HM and HF are diverse and cover a broad spectrum of uses. They are particularly often used in the construction industry. In the field of civil engineering, they ensure that construction pits are quickly and efficiently drained of water. Moreover, the pumps are used to support drilling equipment by pumping out drilling fluids, for example. The robust design of the HM and HF series has also proven itself in civil protection, as they are designed to quickly and effectively transport sewage water from floods.

### FIELDS OF APPLICATION

- ▶ Drainage
- ▶ Ship building
- ▶ Industry
- ▶ Plant engineering
- ▶ Agriculture
- ▶ Construction Industry
- ▶ Civil protection
- ▶ Fire department

### BENEFITS

- ▶ Sealing with rotation independent high-quality mechanical seal. Other kinds of sealing on request.
- ▶ With threaded connections or flanges according to ISO 7005
- ▶ Long-lasting and robust, therefore less susceptible to failure and lower follow-up costs
- ▶ Mature design
- ▶ Self-priming pump

### INSTALLATION

Units normally to be installed in a horizontal position. The pumps are ready for use immediately after initially filling the pump housing. The suction line is automatically vented.

## CONVEYING MEDIUM

Depending on selection of materials, the pumps are suitable for pumping clean and contaminated liquids containing solids, as well as oils, alkalis and acids. Maximum solids content 8%.

## DIRECTION OF ROTATION

Clockwise looking onto motor fan.

## PAINTING

Waterthinnable acrylic varnish top coating colour RAL 010, (blue). Special varnish on request.

## SERVICE DATA

Capacity	Q up to 170 m <sup>3</sup> /h
Pressure head	H up to 140 m
Suction head (geodetic height)	H <sub>s,geo</sub> up to 7 m
Liquid temperature <sup>1)</sup>	t from -20°C up to +85°C
System pressure <sup>2)</sup>	p up to 10 bar
Speed	50 Hz: n ~1500/3000 min <sup>-1</sup>
	60 Hz: n ~1800/3600 min <sup>-1</sup>

<sup>1)</sup> Liquid temperature depends on material, liquid and construction. Further information and other liquid temperatures on request.

- <sup>2)</sup> • Operating pressure = inlet pressure + max. pressure of the product  
• Higher pressure on request

## SHAFT SEAL

Normally used is a single-acting, service-free, independent of direction of rotation bellows type mechanical seal according to EN12756.

## PIPE CONNECTIONS

The connections of the sewage water pumps are made with threaded connections or with flanges according to ISO 7005.

## POSITION OF CONNECTIONS

In all pump constructions, the suction inlet is placed axial. In the standard execution, the pressure outlet is placed radial upwards.

## BEARINGS / LUBRICATION

The bearing of the electric motor consists of standard life-time lubricated ball bearings.

## DRIVE

Low-noise IEC standard three-phase motor, in efficiency class IE3. Other versions and types of motors available upon request.

## MOTOR

Surface cooled three phase electric motor according to IEC-Norm









Motor-construction	Construction LT, U - IM B3	
	Construction A1, M1, M3 - IM B5	
	Construction A4, M2, M4 - IM B35	
Protection	IP 55	
Frequency	50 Hz	
	60 Hz	
Synchronous speed	1500 / (1800) min <sup>-1</sup> 3000 / (3600) min <sup>-1</sup>	
Voltage	50 Hz:	
	up to 2,2 kW	230 V Δ 400 V ▲
	from 3,0 kW	400 V Δ
	60 Hz:	
	up to 2,6 kW	265 V Δ 460 V ▲
	from 3,6 kW	460 V Δ
Insulation class	F	
Operating mode	S1, continuous operation	
Ambient temperature	max. 40°C	

Motors in both direct current (DC) and alternating current (AC) versions are available upon request.

## TYPE SERIES HM / HF

### CONSTRUCTIONS

Construction M is characterized by the fact that the pump and motor are one single unit, which are connected via a shared special shaft. In contrast, pumps of construction A, LT, and U are typically operated with standard motors. Upon request, these can be supplied without a motor. Additionally, pumps of construction LT and U feature a stable base frame that allows for secure mounting of the motor.

Type series		Construction	Execution	Foot mounting
HM		A1 <sup>1)</sup>	Bearing bracket	▸ Bearing lantern
		A4	Bearing bracket	▸ Casing ▸ Motor
		LT	Bearing bracket	▸ Casing ▸ Bearing bracket
		U	Bearing bracket	▸ Bearing bracket
HF		M1 <sup>1)</sup>	Block	▸ Motor stool
		M2	Block	▸ Motor
		M3 <sup>1)</sup>	Block	▸ Casing
		M4	Block	▸ Casing ▸ Motor

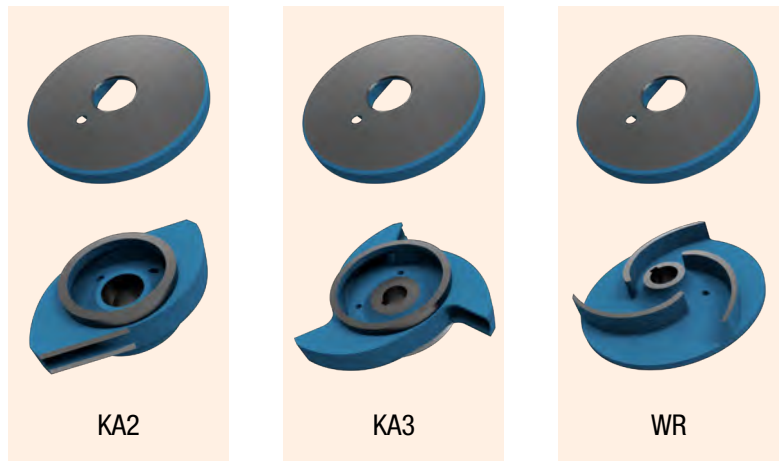
<sup>1)</sup> The constructions with motor without foot are standardly available up to the motor frame size of 132. Special executions on request.

## FREE PASSAGE OF IMPELLER

Sewage pumps are available in different sizes.

Type series HM / HF	Free ball passage [mm]
19	6
25	5
32	5
40	5
50-12	10
50-13	15
80	12
85	20
87	22
100	18

Other executions on request.



- KA2 Double-channel impeller with wear plate  
 KA3 Three-channel impeller with wear plate  
 WR Vortex impeller with wear plate

## MATERIALS

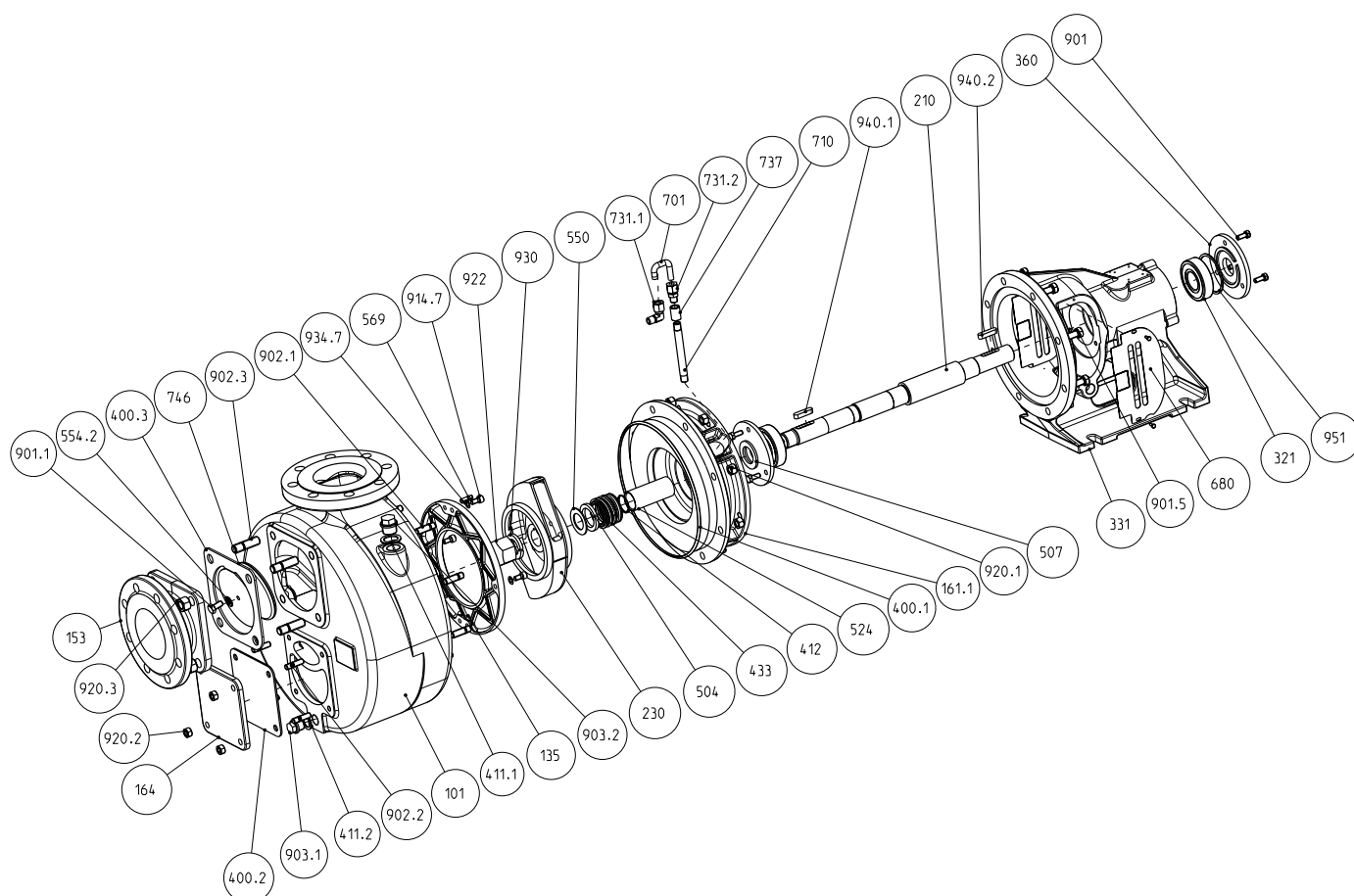
Pumps of type series HM / HF are available in different material combinations, depending on the application. Below you find a table with the standard materials. Other materials on request.

Parts	Material codes for pumps						
Materials	11 Standard	05	07	08	09	12	20
Casing parts	EN-GJL-250 (EN-JL1040)	CuSn10-C (CC480K)	GX5CrNi- Mo19-11 (1.4408)	CuAl10Fe- 5Ni5-C (CC333G)	X2CrNi- MoN22-5-3 (1.4462)	EN-GJL-250 (EN-JL1040)	EN- GJS-400-15 (EN-JS1030)
Impeller	EN-GJL-200 (EN-JL1030)	CuSn10-C (CC480K)	GX5CrNi- Mo19-11 (1.4408)	CuAl10Fe- 5Ni5-C (CC333G)	X2CrNi- MoN22-5-3 (1.4462)	CuSn10-C (CC480K)	EN-GJL-200 (EN-JL1030)
Shaft	X2CrNi- MoN22-5-3 (1.4462)	X2CrNi- MoN22-5-3 (1.4462)	X2CrNi- MoN22-5-3 (1.4462)	X2CrNi- MoN22-5-3 (1.4462)	X2CrNi- MoN22-5-3 (1.4462)	X2CrNi- MoN22-5-3 (1.4462)	X2CrNi- MoN22-5-3 (1.4462)
Motor stool	EN-GJL-200 (EN-JL1030)	EN-GJL-200 (EN-JL1030)	EN-GJL-200 (EN-JL1030)	EN-GJL-200 (EN-JL1030)	EN-GJL-200 (EN-JL1030)	EN-GJL-200 (EN-JL1030)	EN-GJL-200 (EN-JL1030)



## TYPE SERIES HM / HF

### EXPLODED VIEW CONSTRUCTION U (DOUBLE-CHAMBER IMPELLER WITH GRINDING PLATE)



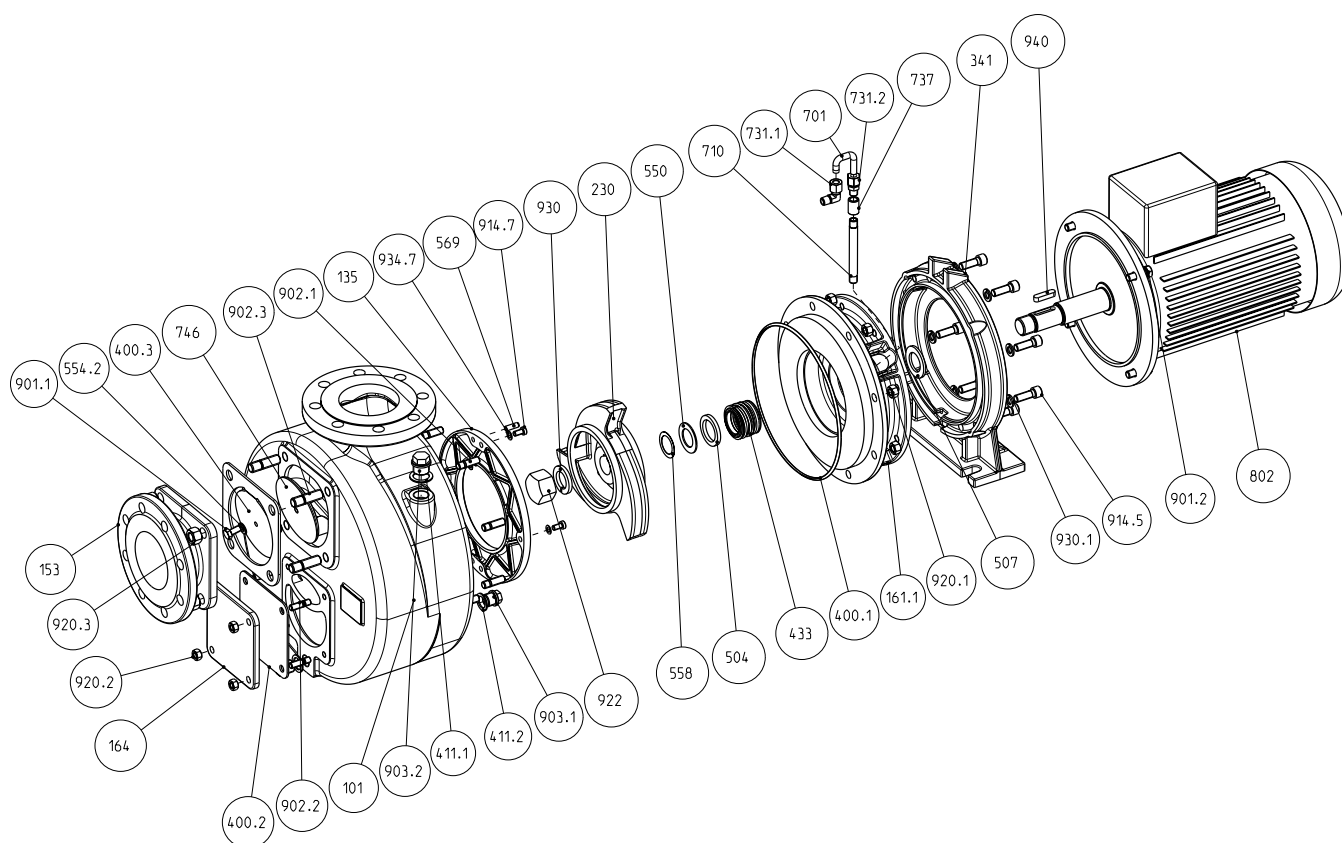
Nr.	Description
101	Pump casing
135	Wear plate
153	Suction branche
161.1	Casing cover
164	Inspection cover
210	Shaft
+ 940.1	+ Key
+ 940.2	+ Key
+ 922	+ Impeller nut
+ 930	+ Spring washer
230	Impeller
321	Ball bearing
331	Bearing pedestal
360	Bearing cover
400.1	Round gasket
400.2	Flat gasket
400.3	Flat gasket

Nr.	Description
411.1	Joint
411.2	Joint
412	O-Ring
433	Mechanical seal
504	Distance ring
507	Thrower
524	Shaft wearing sleeve
550	Disc
569	Dowel pin
680	Contact protection
701	Return pipe
710	Pipe
731.1	Pipe union
731.2	Pipe union
737	Pipe coupling
746	Non return plate

Nr.	Description
901	Hexagon screw
901.1	Hexagon screw
901.2	Hexagon screw
902.1	Stud screw
902.2	Stud screw
902.3	Stud screw
903.1	Plug
903.2	Plug
914.7	Socket head cap screw
920.1	Hexagon nut
920.2	Hexagon nut
920.3	Hexagon nut
934.7	Spring washer
951	Ball bearing shim



## EXPLODED VIEW CONSTRUCTION M (THREE-CHAMBER IMPELLER WITH GRINDING PLATE)



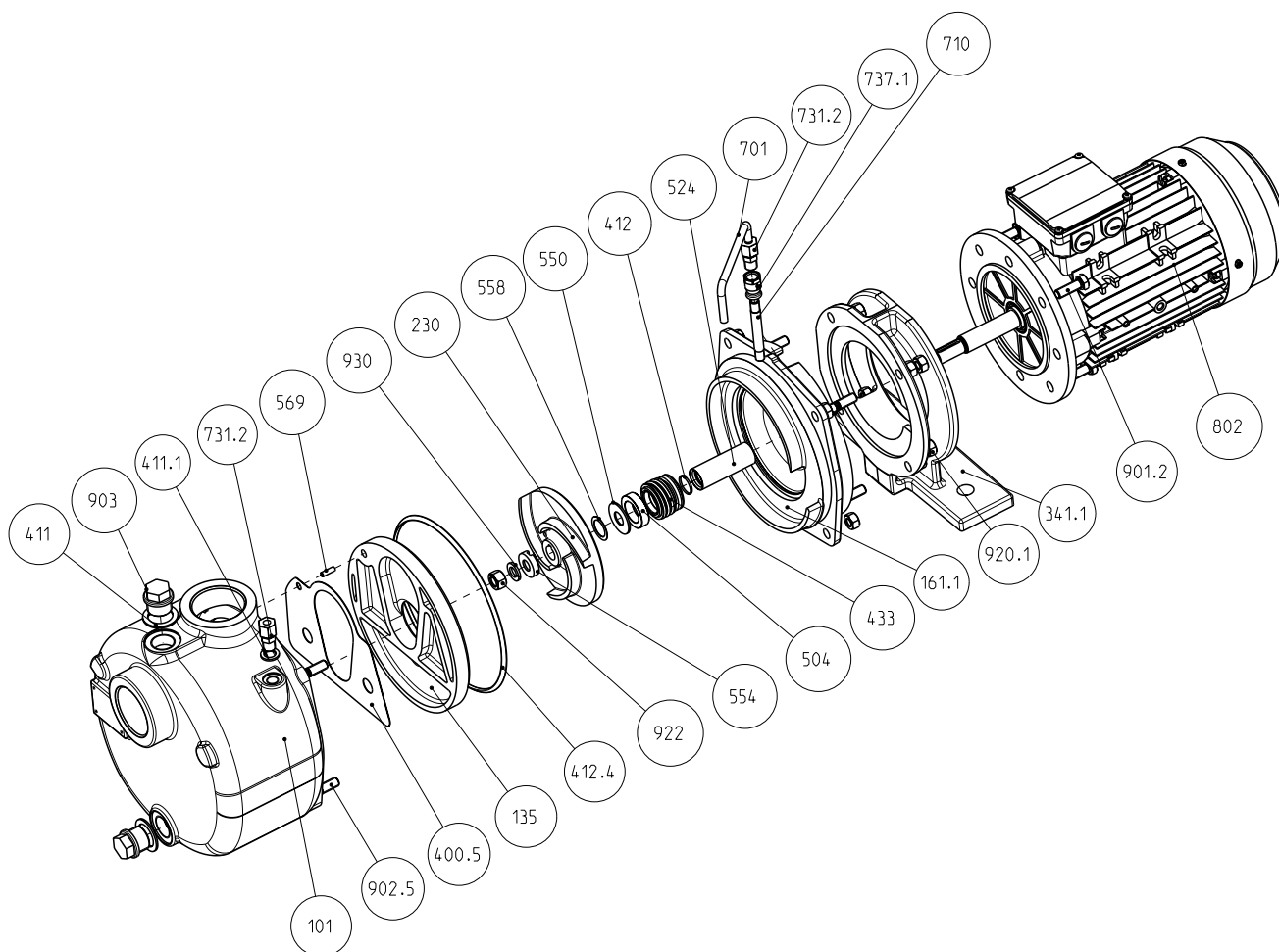
Nr.	Description
101	Pump casing
135	Wear plate
153	Suction branche
161.1	Casing cover
164	Inspection cover
230	Impeller
341	Motor stool
400.1	O-Ring
400.2	Flat gasket
400.3	Flat gasket
411.1	Joint
411.2	Joint
433	Mechanical seal
504	Distance ring
507	Thrower

Nr.	Description
550	Disc
554.2	Washers
558	Spacer disc
569	Dowel pin
701	Return pipe
710	Pipe
731.1	Pipe Union
731.2	Pipe Union
737	Pipe coupling
746	Valve disc
802	Motor for close coupling
901.1	Hexagon screw
901.2	Hexagon screw
902.1	Stud screw
902.2	Stud screw

Nr.	Description
902.3	Stud screw
903.1	Plug
903.2	Plug
914.5	Socket head cap screw
914.7	Socket head cap screw
920.1	Hexagon nut
920.2	Hexagon nut
920.3	Hexagon nut
922	Impeller nut
930	Spring washer
930.1	Spring washer
934.7	Spring washer
940	Key

## TYPE SERIES HM / HF

### EXPLODED VIEW CONSTRUCTION M (VORTEX IMPELLER WITH GRINDING PLATE)



Nr.	Description
101	Pump casing
+ 411	+ Joint
+ 569	+ Dowel pin
+ 902.1	+ Stud bolt
+ 903	+ Plug
135	Wear plate
161.1	Casing cover
+ 902.5	+ Stud bolt
230	Impeller
341	Motor stool
341.1	Motor stool with foot
400.5	Flat gasket
412	O-Ring
412.4	O-Ring
433	Mechanical seal
504	Distance ring
507	Thrower

Nr.	Description
524	Shaft wearing sleeve
550	Disc
554	Washer
558	Spacer disc
701	Return pipe
+ 710	+ Pipe
+ 731.2	+ Pipe union
+ 737.1	+ Pipe coupling
802	Motor for close coupling
+ 940	+ Key
901.2	Hexagon head screw
920.1	Hexagon nut
920.5	Hexagon nut
920.6	Hexagon nut
922	Impeller nut
930	Safety device

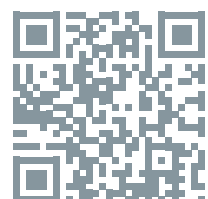
## NOTES

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