SERIES 211.10

SELF-PRIMING VERTICAL SCREW PUMP FOR LUBRICATING LIQUIDS

PRODUCTS

LUBE OILS

HYDRAULIC OILS

CLEAN FUEL OILS

LABELLING

LUBE OIL PUMPS

HYDRAULIC SYSTEMS

FUEL OIL TRANSFER PUMPS

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HOUTTUIN B.V.

GENERAL INFORMATION

Principle
The Houttuin double entry twin screw pumps series 211 are vertical rotating self priming positive displacement pumps. Two intermeshing screws rotating in a pump casing insert ensure high pumping efficiency with constant axial flow and unequalled suction power.

Construction
The spindles are supported and axially held in position by ball bearings. The transmission of torque from the driven spindle to the idler spindle is effected by oil lubricated timing gears located outside of the pumping area in an attached gear box. The ball bearings and timing gears maintain a small clearance between the screws, thus preventing metal to metal contact.

Shaft sealing
Product lubricated single unbalanced mechanical seal.

Overload protection
For protection against overload an built-on spring loaded relief valve can be supplied.

Applications
For pumping lubricating oils, hydraulic oils or other lubricating liquids which do not contain abrasive substances nor chemically attack the pump materials.

As lub oil pumps in ships and offshore engineering, as filling pumps in tank farms and in hydraulic systems.

Products
- Lubricating oils
- Hydraulic oils
- Clean fuel oils

Labelling
- Main lub oil pumps
- Auxiliary lub oil pumps
- Hydraulic systems
- Fuel oil transfer systems

Performance data

Capacity	Q	up to 600 m^3/h
Viscosity range	V	20 to 760 cSt
Temperature of pumped liquid	t	up to 80 °C
Inlet pressure	p_s	up to 10 bar
Outlet pressure	p_d	up to 16 bar
Difference pressure	Δp	up to 16 bar
Speed	n	up to 2900 rpm
Flanges		according to DIN or ANSI

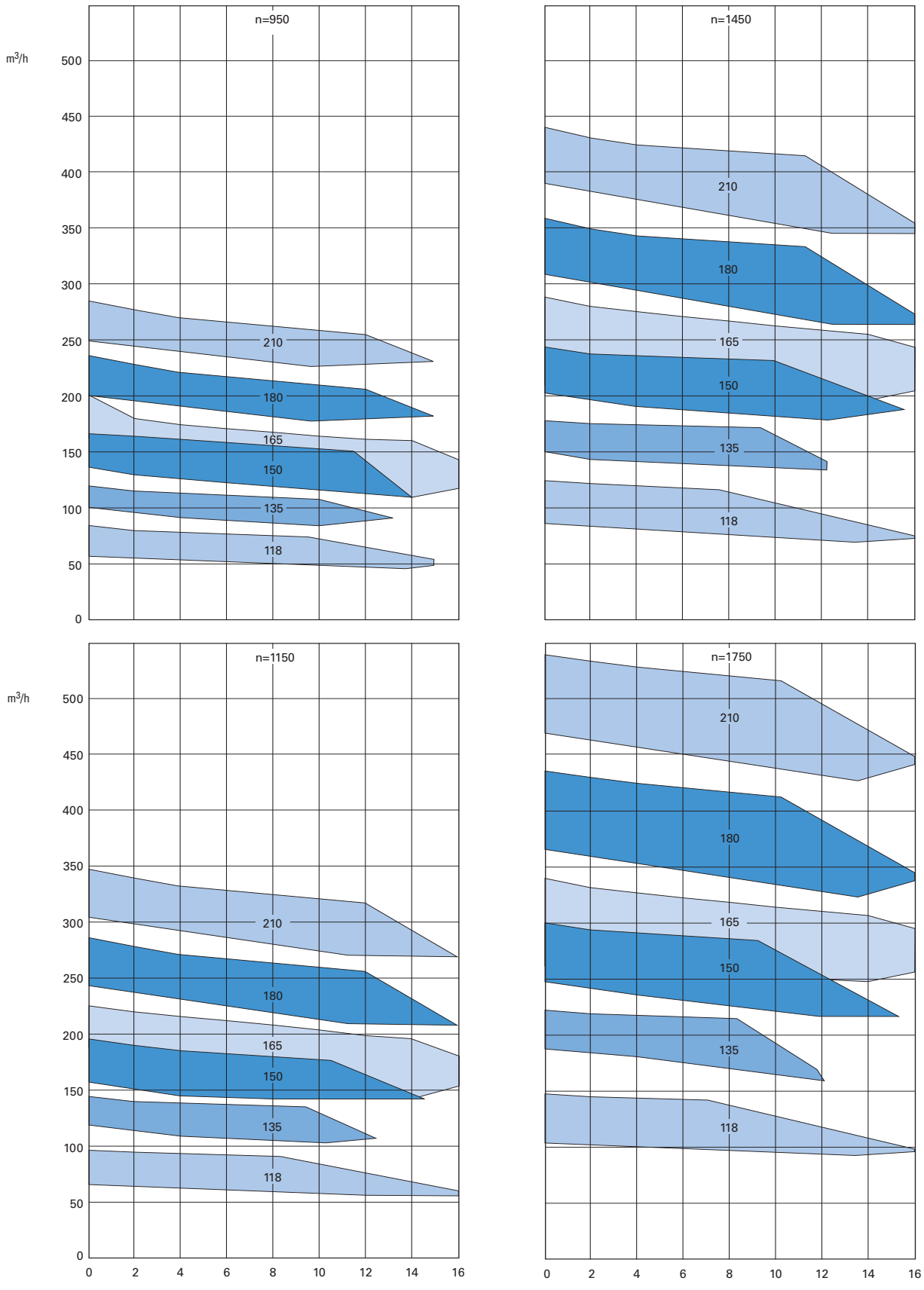
A preliminary pump selection can be effected by means of the performance graphs. For the exact performance data as function of the viscosity of the liquid to be pumped and the pump speed, please refer to the individual characteristics.

AVAILABLE MATERIALS FOR PUMP AND MECHANICAL SEAL:

Pump		Mechanical seal according to DIN 24960 / API		
Screw shafts	Casing and covers	Seal faces	Springs	'O' -rings
- Carbon Steel	- Cast Iron - Nodular cast Iron	- Chrome Steel against - Carbon	- Stainless Steel (Type 300)	- Viton

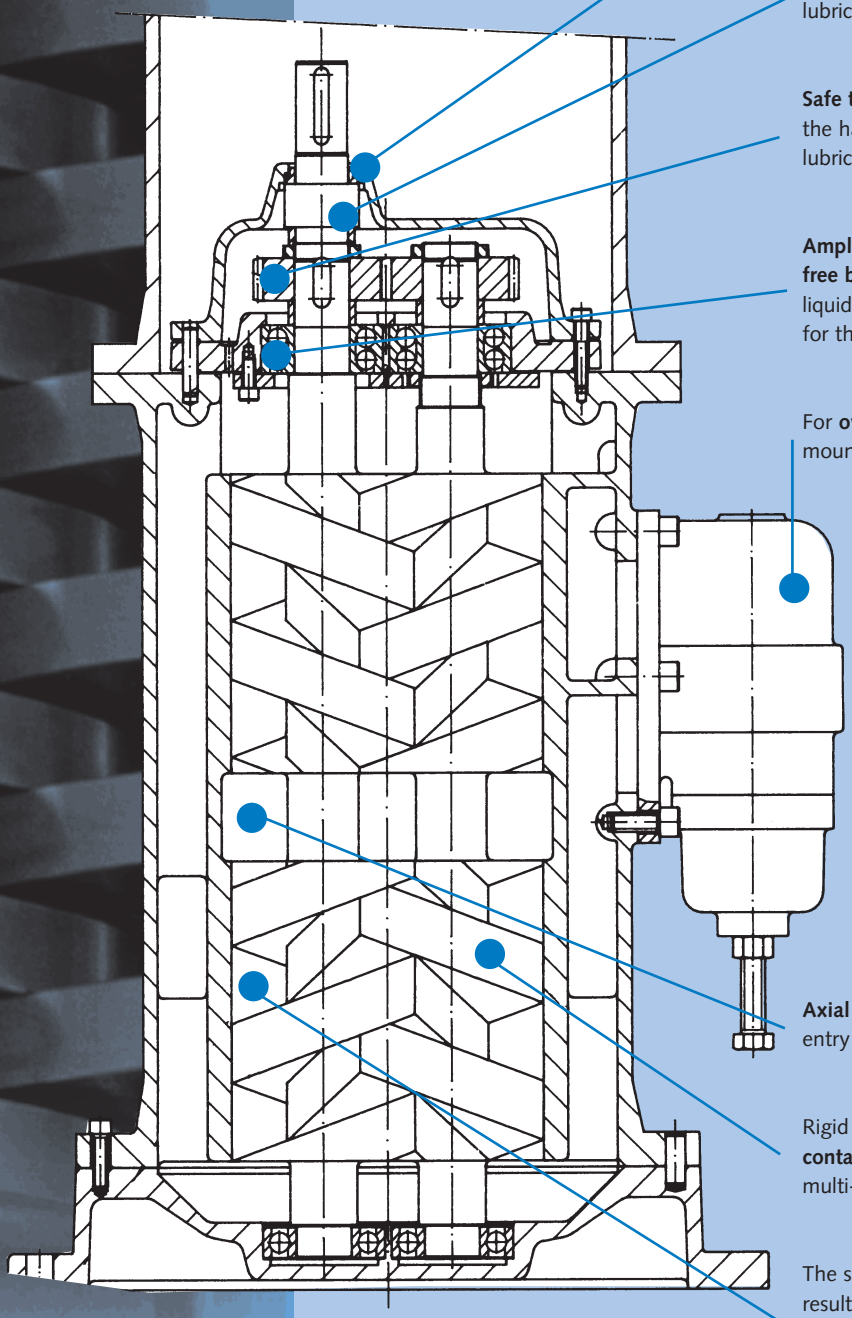
PERFORMANCE GRAPHS

Flow rate/pressure at minimum and maximum viscosity according to pump size.
For exact performance data dependent of viscosity and rpm please refer to the individual characteristics per pump size.



CONSTRUCTION

Drive by **commercial standard motors**, construction V1, all types of enclosure possible, therefore a motor bracket is optional.



Safe lubricating/cooling of ball bearings, timing gears and mechanical seal by internal circulation of liquid pumped.

Single unbalanced mechanical seal lubricated by the liquid pumped.

Safe transmission of torque through the hardened and ground timing gears lubricated by the liquid pumped

Amply dimensioned and maintenance free ball bearings lubricated by the liquid pumped, which additionally serve for the axial thrust of the spindles.

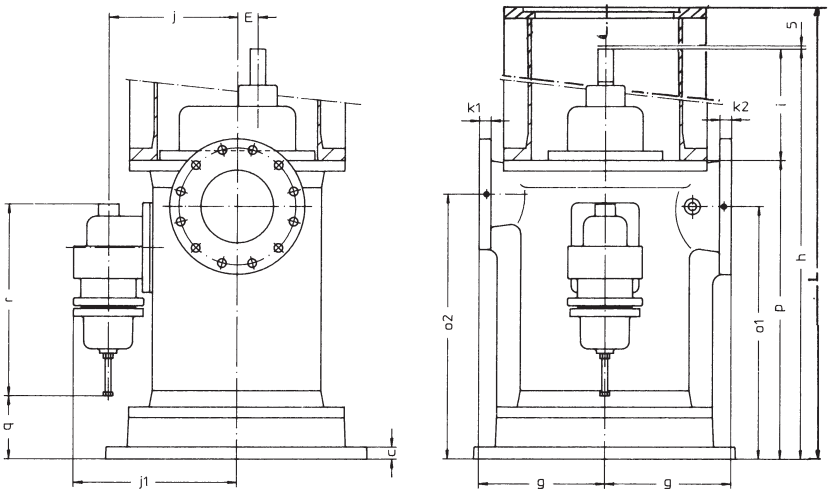
For **overload protection** a direct mounted pressure relief valve is optional.

Axial forces balanced through double entry spindles.

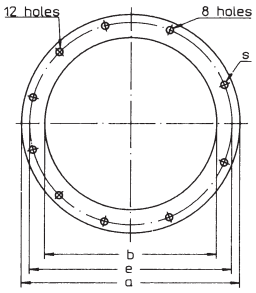
Rigid spindles of solid material therefore **contact-free running** and compared with multi-part spindles **no crevice corrosion**.

The special profile of the spindle flanks results in **continuously and nearly pulsation-free pumping, high efficiency, good NPSH-values and constant pressure course.**

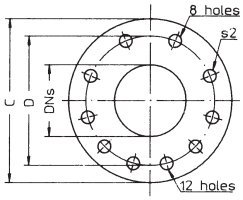
DIMENSIONS



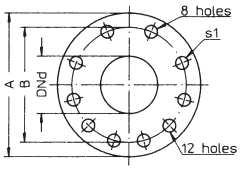
Hole pattern of pump foot

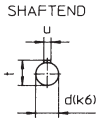


Suction flange



Discharge flange





Sense of rotation: clockwise seen from drive side

pump size	PUMP DIMENSIONS											PUMP FOOT DIMENSIONS					SHAFT END			
	g	h	i	j	j1	o1	o2	p	q	r	E	a	b	c	e	s	d	l	t	u
118	260	845	230	265	337	520	545	615	130	397	42,0	540	425	25	500	8x18	32	75	35	10
135	280	925	245	332	437	560	585	680	65	540	47,0	565	445	25	525	8x18	37	75	40	10
150	300	1005	255	345	450	600	625	750	100	540	52,5	620	485	30	570	8x22	42	75	45	12
165	315	1065	285	395	520	630	655	780	45	715	57,5	650	510	30	600	8x22	42	90	45	12
180	335	1095	290	410	535	630	655	805	75	735	63,0	690	550	35	640	12x22	48	90	51,5	14
210	450	1240	335	475	600	700	725	905	160	735	73,5	850	695	40	800	12x22	60	100	64	18

PUMP SIZE	SUCTION FLANGE PN 16 DIN 2533					DELIVERY FLANGE PN 16 DIN 2533					ACONNECTIONS		
	NOM. DIAM. DM_s	C	D	k2	s2	NOM. DIAM. DN_d	A	B	k1	s1	VENTING E1	DRAINAGE E2	PRESSURE GAUGE M1/M2
118	150	280	240	26	8x22	100	228	180	24	8x18	BSP 1/2"	BSP 1/2"	BSP 1/4"
135	200	343	295	30	12x22	150	285	240	26	8x22	BSP 1/2"	BSP 1/2"	BSP 1/4"
150	250	405	355	32	12x26	200	343	295	30	12x22	BSP 3/4"	BSP 3/4"	BSP 1/4"
165	250	405	355	32	12x26	200	343	295	30	12x22	BSP 3/4"	BSP 3/4"	BSP 1/4"
180	300	460	410	32	12x26	250	405	355	32	12x26	BSP 3/4"	BSP 3/4"	BSP 1/4"
210	350	534	470	36	16x26	300	484	410	32	12x26	BSP 3/4"	BSP 3/4"	BSP 1/4"

PUMP SIZE	RELIEF VALVE SIZE	MOTOR SIZE											
		160 M	160 L	180 M	180 L	200 L	225 S	225 M	250 M	280 S	280 M	315 S	315 M
		KW AT 1500 RPM											
		11	15	18,5	22	30	37	45	55	75	90	110	132
		KW AT 1800 RPM											
		13	15	21	24	32	42	45	57	78	90	120	130
		DIMENSION L											
118	70	960	960	960	960	960	990	990					
135	100			1040	1040	1040	1070	1070	1070				
150	100					1120	1150	1150	1150	1150	1150		
165	135							1210	1210	1210	1210	1240	
180	135								1240	1240	1240	1270	1270
210	135									1385	1385	1415	1415

dimensions in mm, dimensions are subject to alternations.

PERFORMANCE DIAGRAMS TOTAL PUMP PROGRAM*)

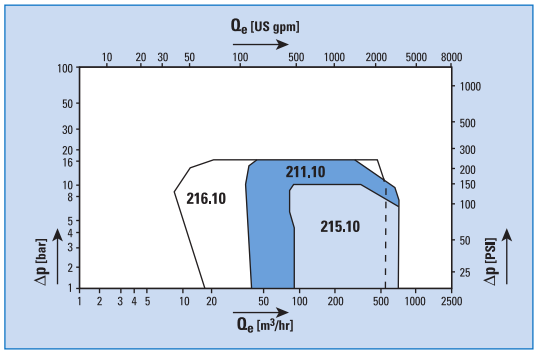
*) The diagrams show the performance range of the different pump series in our pump program and are for information only.

STANDARD PUMPS

With Internal Bearings

for lubricating liquids

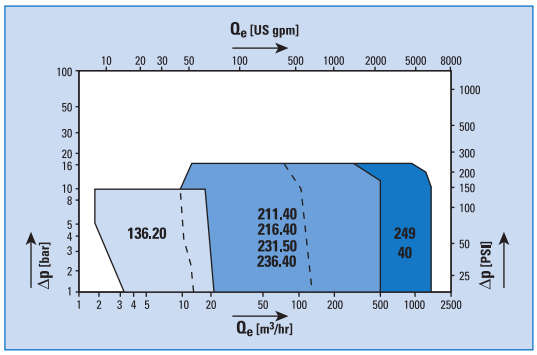
viscosity range : 20 - 760 cSt
: 98 - 3500 SSU



With External Bearings

for non-lubricating liquids

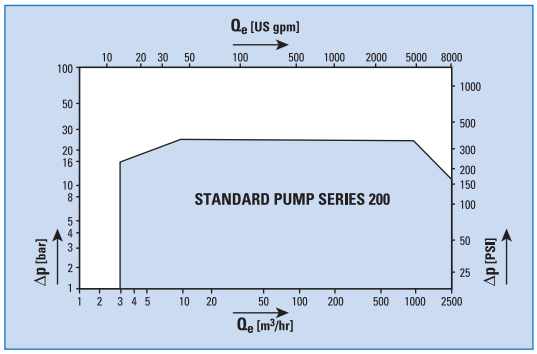
viscosity range : 0,6 - 1500 cSt
: 32 - 7000 SSU



With External Bearings

for lubricating and
non-lubricating liquids

viscosity range : 0,6 - 100.000 cSt
: 32 - 466.000 SSU

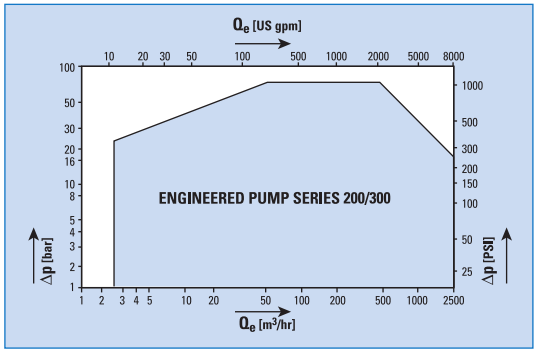


ENGINEERED PUMPS

With External Bearings

for lubricating and
non-lubricating liquids

viscosity range : 0,6 - 100.000 cSt
: 32 - 466.000 SSU



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