

NJRP SERIES

ISO Standard End-Suction Centrifugal Pumps

GFRPP

PP-H

ANTICO



ISO 2858 | ISO 5199 | EN 22858

Frame Type
Corrosion Resistant Chemical Pumps

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Standard Chemical Process Pumps - Frame Type

PRODUCT OVERVIEW

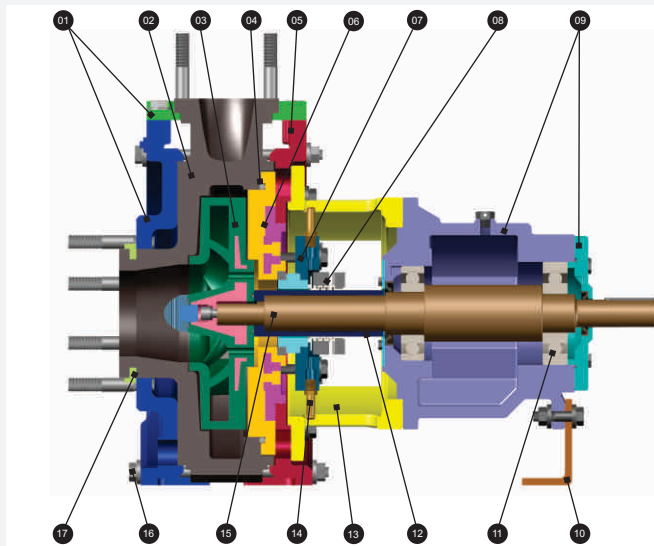
NJRP Series pumps are injection moulded, horizontal, back pull-out, volute casing type, single stage, center line discharge, end-suction centrifugal pumps. Cast iron frames with injection moulded wetted parts are designed to handle higher hydraulic pressures and flange loads suitable for hazardous, corrosive and toxic media. Dimensional and design criteria of NJRP pumps conform to ISO 2858 / ISO 5199 / EN 22858.

TECHNICAL DATA

Operating Frequency		50 Hz	60 Hz
Capacity [Q]	up to	210 m ³ /hr (925 US gpm)	1100 US gpm (250 m ³ /hr)
Head [H]	up to	100 m (328 ft)	400 ft (122 m)
Motor Power [P]	up to	55 kW (75 hp)	120 hp (90 kW)
Viscosity	up to	150 mPas (cP)	
Suction Lift	up to	8 m (26 ft) with priming chamber*	
Maximum Working Pressure		16 bar (232 psi)	
Maximum Specific Gravity [SG]		1.8 - 3	
Minimum Continuous Flow [MCF]		2.5 m ³ /hr (11 US gpm)	
Maximum Temperature		GFRPP: 90°C (194°F), PP-H: 82°C (180°F)	
Suction & Delivery Connection		ANSI B16.5 - Class 150, ISO 2084, DIN 2501, BS4504 - PN16*	
Shaft Seal		Single (TB/RA) & Double (DROTT) Mechanical Seals	
Bearings		Rolling Element Bearings	
Lubrication		Oil	
Motor Compatibility		IS 1231, IEC 72-1, NEMA*	

*available on request

MATERIALS



Casing Frame & Flange 01	Cast Iron*
Casing 02	GFRPP ¹ / PP-H ²
Impeller (Closed/Semi-open) 03	GFRPP / PP-H
O-Ring 04	FKM / FFKM / EPDM / TFE-P
Sole Plate 05	Cast Iron*
Casing Cover 06	Ductile Iron* moulded with GFRPP / PP-H
Seal Cover 07	FRP ³ / GFRPP / Stainless Steel
Mechanical Seal 08	Ceramic / SiC ⁴ / GFT ⁵ / Carbon
Bearing Bracket & Cover 09	Cast Iron*
Support Foot 10	Steel*
Rolling Element Bearings 11	Carbon Chromium Steel
Sleeve 12	Ceramic / SiC / Super Alloys
Lantern 13	Ductile Iron*
Male Hose Barb Nipple 14	Brass
Shaft 15	SS316 / Super Alloys
Fasteners 16	Stainless Steel
Retaining Ring 17	Zinc Plated Steel

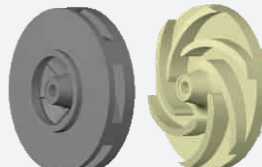
1 - Glass Filled Reinforced PP, 2 - Polypropylene - Homopolymer, 3 - Fibre Reinforced Polymer, 4 - Silicon Carbide, 5 - Glass Filled Polytetrafluoroethylene (PTFE)

* - with high grade 2C corrosion protection paint. Special coatings available on request



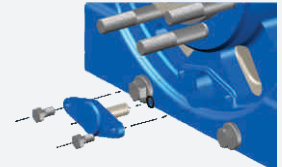
Impeller Locking Mechanism

Prevents catastrophic failure in case of reverse rotation



Impeller Options

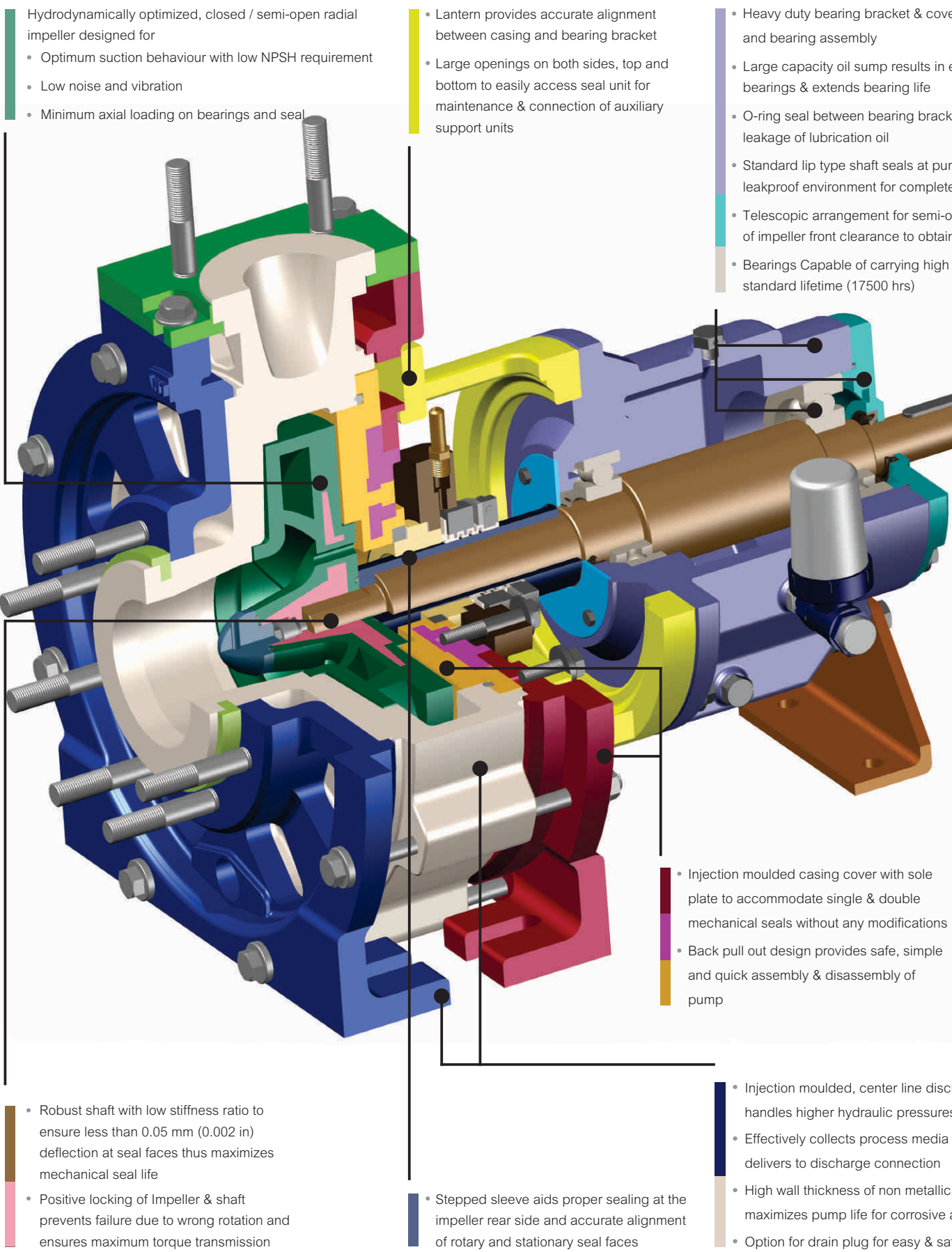
Option of closed and semi-open impeller with efficient blade passage for effective pumping of process media



Drain Plug

Drain plug allow swift drainage of hazardous liquids

DESIGN FEATURES



- Hydrodynamically optimized, closed / semi-open radial impeller designed for
 - Optimum suction behaviour with low NPSH requirement
 - Low noise and vibration
 - Minimum axial loading on bearings and seal

- Lantern provides accurate alignment between casing and bearing bracket
 - Large openings on both sides, top and bottom to easily access seal unit for maintenance & connection of auxiliary support units

- Heavy duty bearing bracket & cover and bearing assembly
 - Large capacity oil sump results in extended bearing life
 - O-ring seal between bearing bracket prevents leakage of lubrication oil
 - Standard lip type shaft seals at pump inlet provides leakproof environment for complete protection
 - Telescopic arrangement for semi-open impeller front clearance to obtain optimum efficiency
 - Bearings Capable of carrying high loads for long standard lifetime (17500 hrs)

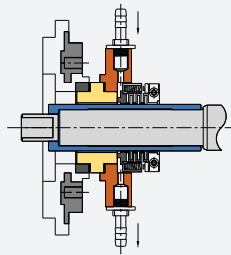
- Robust shaft with low stiffness ratio to ensure less than 0.05 mm (0.002 in) deflection at seal faces thus maximizes mechanical seal life
 - Positive locking of Impeller & shaft prevents failure due to wrong rotation and ensures maximum torque transmission

- Stepped sleeve aids proper sealing at the impeller rear side and accurate alignment of rotary and stationary seal faces

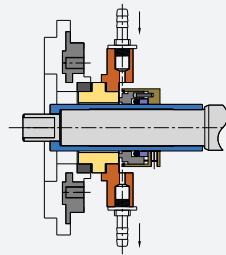
- Injection moulded casing cover with sole plate to accommodate single & double mechanical seals without any modifications
 - Back pull out design provides safe, simple and quick assembly & disassembly of pump

- Injection moulded, center line discharge handles higher hydraulic pressures
 - Effectively collects process media and delivers to discharge connection
 - High wall thickness of non metallic discharge maximizes pump life for corrosive applications
 - Option for drain plug for easy & safe maintenance

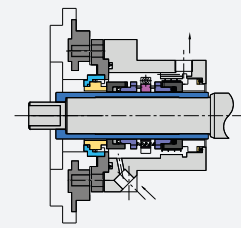
MECHANICAL SEAL OPTIONS



Single PTFE Bellows seal (TB)



Single Pusher Seal (RA)



Double Pusher Seal (DROTT)

- **Type TB** is single, outside mounted seal, uses PTFE bellows as secondary seal offering universal chemical resistance for a broad range of clean & corrosive pumping media.
- **Type RA** is single, outside mounted seal, employs fluoroelastomer (FKM/FFKM) as secondary seal to handle highly corrosive & homogenous slurries.
- **Type DROTT** is double, back to back arrangement seal; using fluoroelastomer (FKM / FFKM) & fluoropolymer (PTFE) as secondary seals suitable for handling hazardous chemicals, media with tendency to crystallize and to avoid dry running while pumping volatile liquids. Compatible pressurized buffer liquid needs to be circulated via thermosiphon or other external pressurized systems.

Operating parameters*

Type		TB	RA	DROTT
Pressure	up to	5 bar (75 psi)	27.6 bar (400 psi)	27.6 bar (400 psi)
Temperature	up to	71°C (160°F)	204°C (400°F)	204°C (400°F)
Shaft Speed	up to	10 m/s (33 fps)	23 m/s (75 fps)	23 m/s (75 fps)

*Values for Flowserve seals. Other seals available on request.

TESTING FACILITIES

- Cast parts : Chemical / Mechanical tests, Spectrometer and Dye Penetrant test
- Shaft : Ultrasonic test
- Wetted parts : Spark test and Hydrostatic test
- Impeller : Dynamic balancing facility
- Pump : Temperature, Noise & Vibration measuring instruments
- Pump performance : Pump is tested hydraulically as per IS 5120 standard on a 15kl test bench equipped with calibrated magnetic flow meters, control valves, pressure gauges and motors from 1hp to 100hp (1440 & 2900 rpm).

APPLICATIONS

NJRP Series pumps are best suited for pumping corrosive media with/without contaminants. Typical applications are

- Acidic Effluents & Fume Extraction Systems of Chemical Process industries
- Plating Solutions of Metal Finishing industries
- Acids & Alkalis of Chlor Alkali industries

er provide rigid support to shaft

ffective heat transfer for cooler

et and cover & lantern to prevent

hp & coupling end ensure

safety

pen impeller enables adjustment

optimal hydraulic performance

dynamic loads to run beyond

- Casing Frame
- Volute Casing
- Retaining Ring
- Impeller
- Impeller Insert
- Casing Cover
- Sole Plate
- O-Rings
- Shaft
- Sleeve
- Bush
- Stationary Unit
- Rotary Unit
- Seal Cover
- Hose Barb Nipple
- Lantern
- Bearing Pedestal
- Bearings
- Oil Seal
- Bearing Cover (OB)
- Bearing Cover (IB)
- Support Foot
- Constant Level Oiler
- Keys & Fasteners

change in frame type construction

s and flange loads with ease

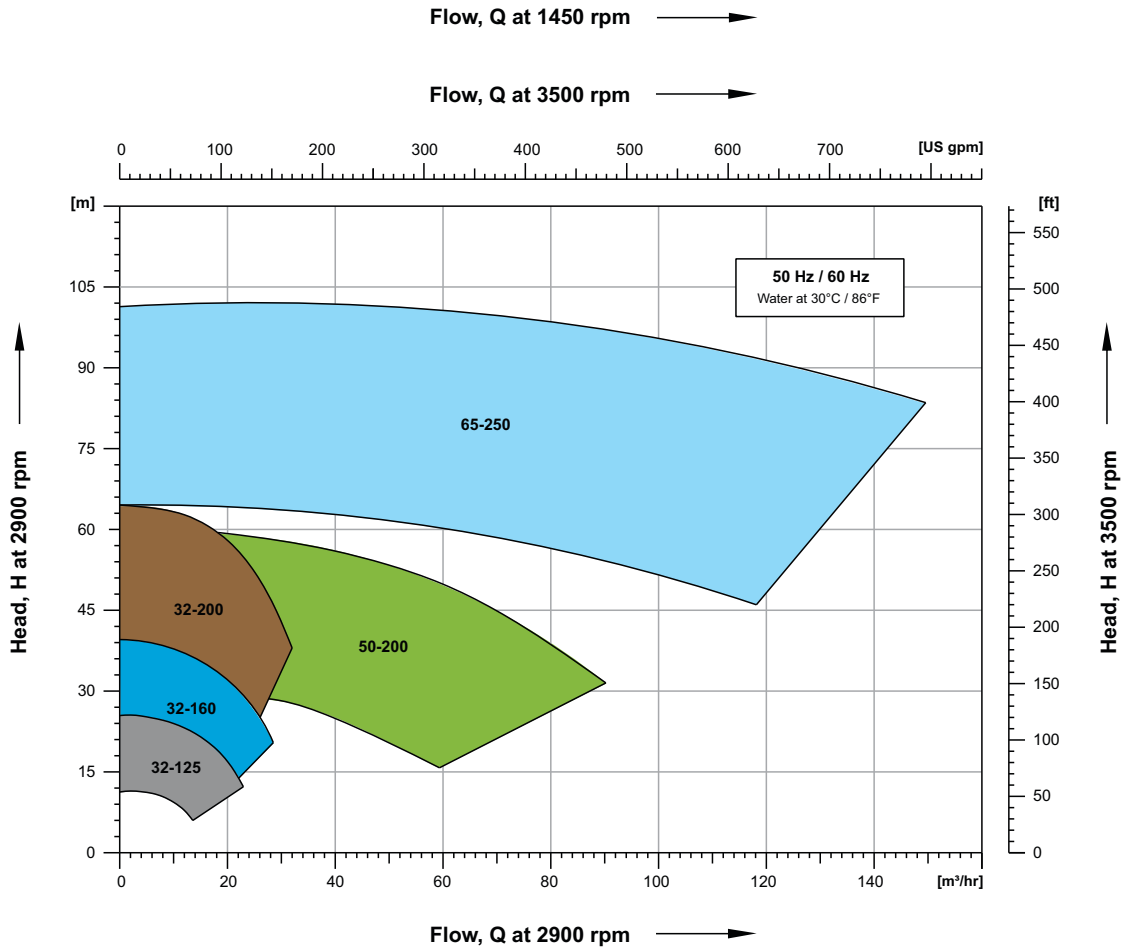
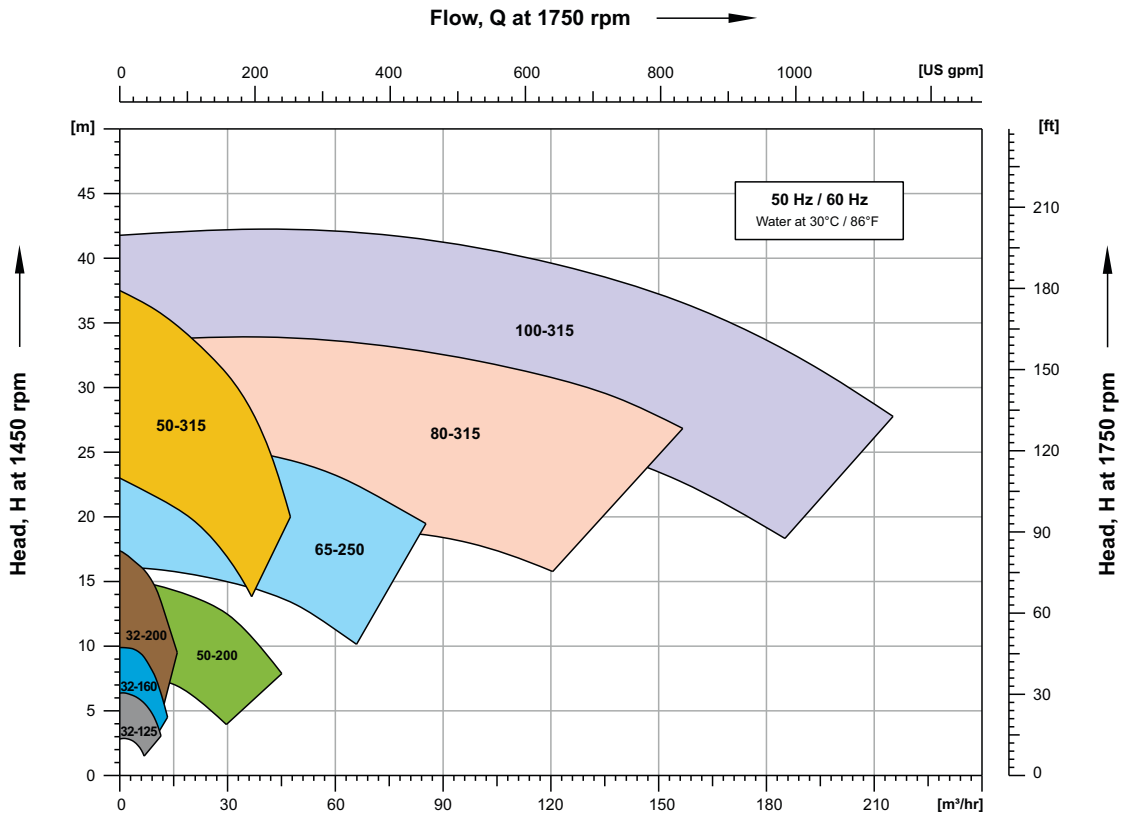
from exit of the impeller and

wetted parts (Min 10 mm)

applications

ie maintenance

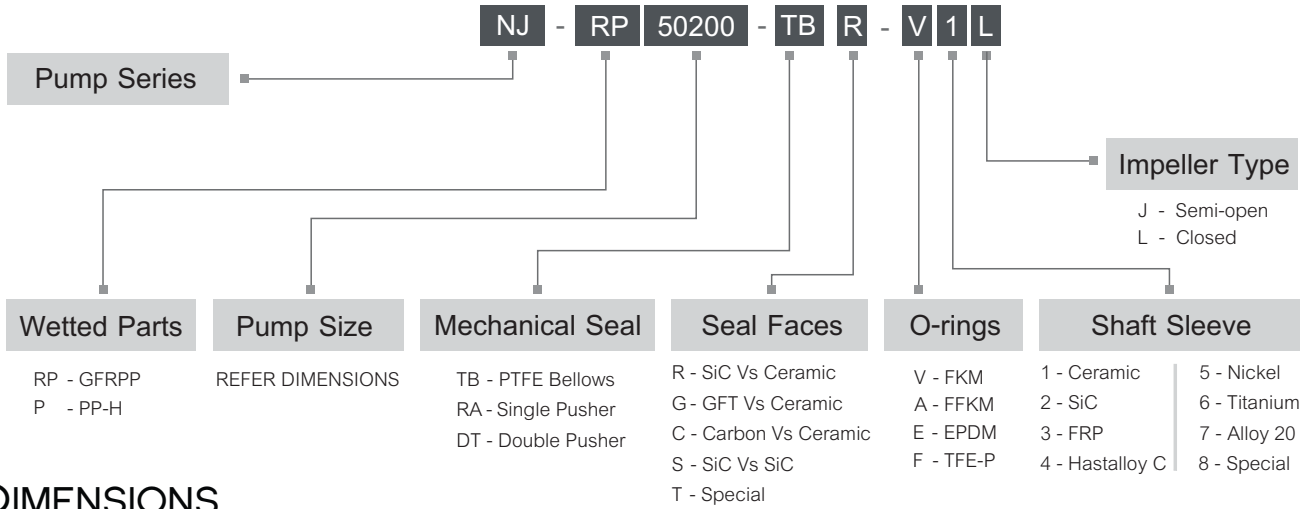
HYDRAULIC COVERAGE



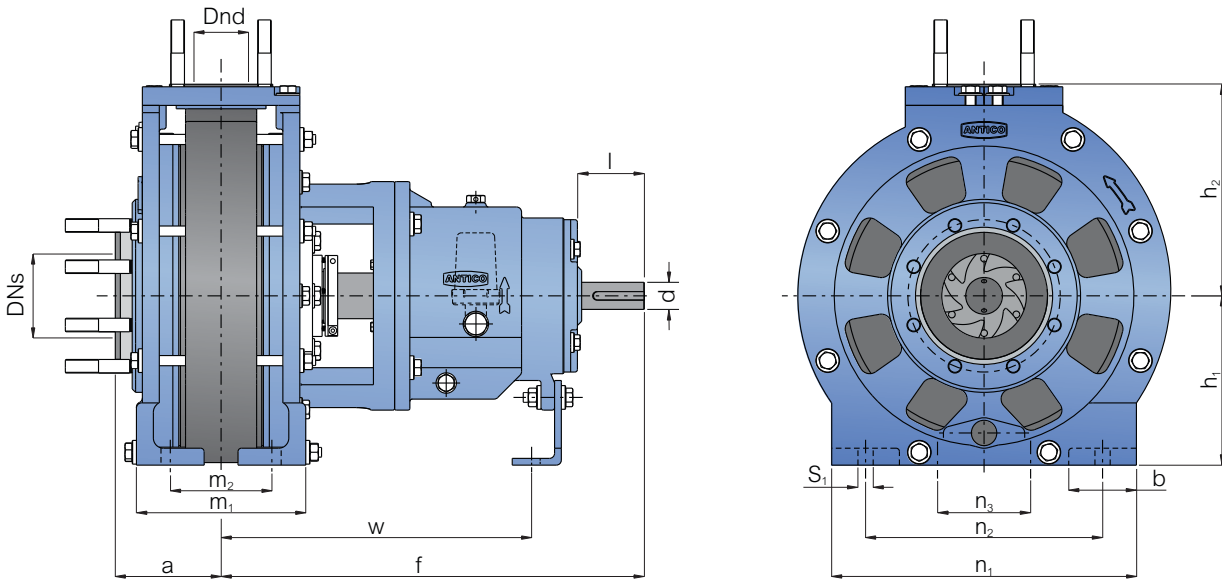
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PUMP IDENTIFICATION



DIMENSIONS



MODELS	PUMP DIMENSIONS															
	DN _s	DN _d	a	f	h ₁	h ₂	b	m ₁	m ₂	n ₁	n ₂	n ₃	w	S ₁	d	l
50-32-125	50	32	80	385	112	140	50	100	70	190	140	110	285	M12	24	50
50-32-160	50	32	80	385	132	160	50	100	70	240	190	110	285	M12	24	50
50-32-200	50	32	80	385	160	180	50	100	70	240	190	110	285	M12	24	50
80-50-200	80	50	100	385	160	200	50	100	70	265	212	110	285	M12	24	50
80-50-315	80	50	125	500	225	280	65	125	95	345	280	110	370	M12	32	80
100-65-250	100	65	125	500	200	250	80	160	120	360	280	110	370	M16	32	80
125-80-315	125	80	125	530	250	315	80	160	120	400	315	110	370	M16	42	110
125-100-315	125	100	140	530	250	315	80	160	120	400	315	110	370	M16	42	110

All Dimensions in mm



Anticorrosive Equipment Pvt. Ltd.