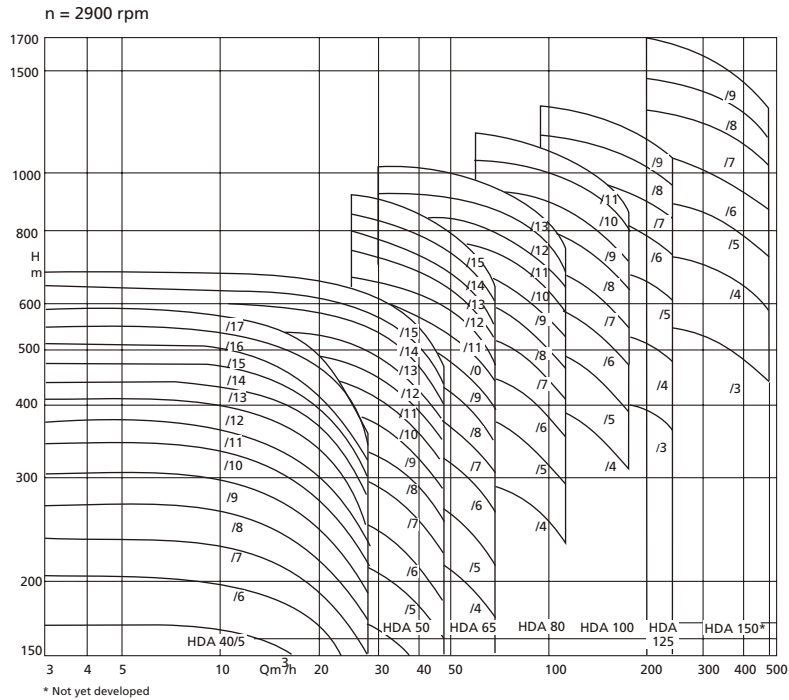


Selection Chart 50Hz

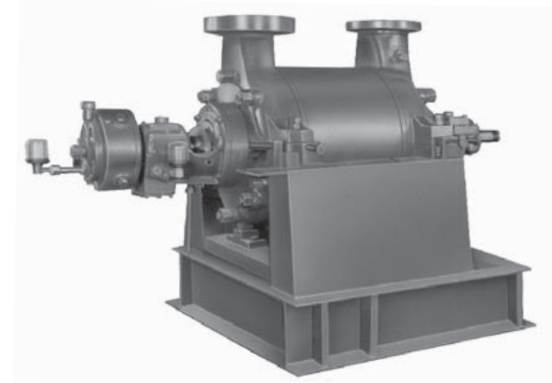


Manufactured in technical collaboration with KSB Aktiengesellschaft., Germany by :

KSB PUMPS LIMITED

Works	Telephone No.	Fax
Pimpri	(020) 7101000	(020) 7426000
Chinchwad		
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Regd. Office:		
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Zonal Offices:		
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Branch Offices:		
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High Pressure Multistage Pump



Applications

HDA pumps are mainly used as Boiler Feed Pumps in industry. They are also employed for high pressure hydraulic circuits viz. Hydraulic presses, Decorticating, Coke cutting, Descaling and Municipal water supply systems. HDA pumps are used extensively in all core sector industries like power, fertiliser, chemical, refinery and steel plants.

Design

Horizontal multistage with vertical split casing and radial single entry impellers. The stage casings are sealed off from one another by metal to metal sealing faces, and are clamped together by external tie rods. The stage casing and tie rods are enclosed in a steel sheathing. The pump feet are cast integral with suction and discharge casing and are generally located at the shaft centre line.

Operating Data

Pumpsizes	DN	40 to 150 mm
Capacity	Q	Up to 576 m³/hr (160 l/s)
Total head	H	Up to 1450m
Temperature	t	-5 to 200°C
Pump Suction Head	ps	Up to 30 kg/cm²
Pump Discharge Head	pd	(at Q = 0, ρ = 1.0 kg/dm³)
HDA 40 to 100		Up to 130 kg/cm²
HDA 125 to 150		Up to 135 kg/cm²
Speed	n	Up to 5500 rpm

Materials

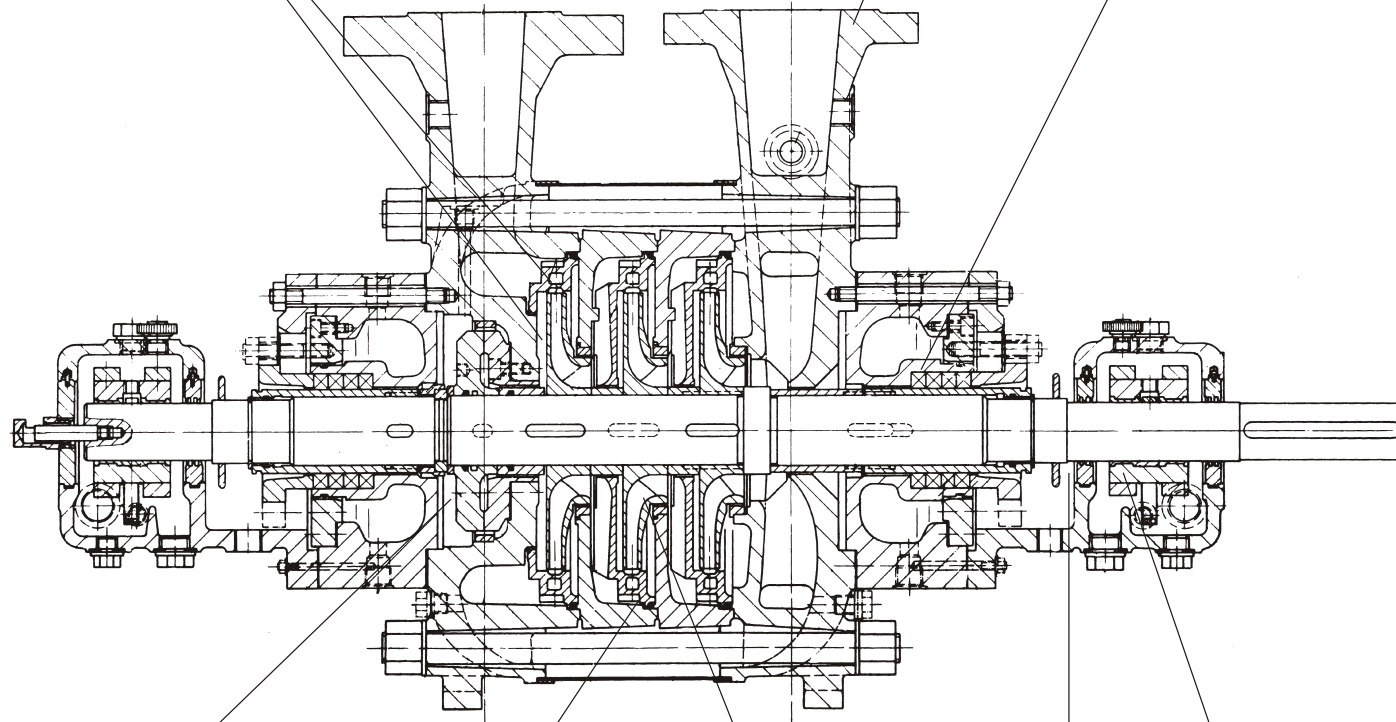
Part No.	Description	Material Options						
		00	01	02	03	04	05	06
106	Suction casing	C.I.	ASTMA 216 Gr. WCB					1.4008
107	Discharge casing	ASTMA 216 Gr. WCB					1.4008	
108	Stage casing	C.I.	ASTMA 216 Gr. WCB					1.4008
171.1/2	Diffuser	C.I.			1.4008	1.4008	1.4008	
210	Shaft	45C8	AISI410	AISI410 (Chrome plated if impeller is of CA6NM)				
230	Impeller	C.I.	C.I.	1.4008				
451	St. box housing	C.I.	ASTMA216 Gr. WCB					1.4008
502.1/2	Wearing ring	C.I.	C.I.	C.I.	C.I.	Cr. Hard 400	C.I.	Cr. Hard 400
521	Stage sleeve	Ni Cl	Ni Cl	Ni Cl	Ni Cl	AISI410 (A)	Ni Cl	AISI 410 (A)
524.1/2	Shaft port. sleeve	AISI410						
525.1/2	Spacer sleeve	Ni Cl	Ni Cl	Ni Cl	Ni Cl	AISI410 (A)	Ni Cl	AISI410 (A)
601	Balancing disc	ASTMA 182 Gr. F6a						
602	Counter bal. disc	ASTMA 182 Gr. F6a						
905	Tie rod	EN 24 Condition V						

Technical matter. Subject to change without notice.

Minimum radial forces because of secured hydraulic impeller/ diffuser design. Simultaneously use of high grade oil lubricated plain bearing / radial roller bearings guarantees the bearing life up to 40,000 operating hours

Flanges as per DIN / ANSI / BS connection as per customers choice is possible. Higher values of permissible forces and moments

Alternative arrangement of shaft sealing with mechanical seal of reputed make is possible



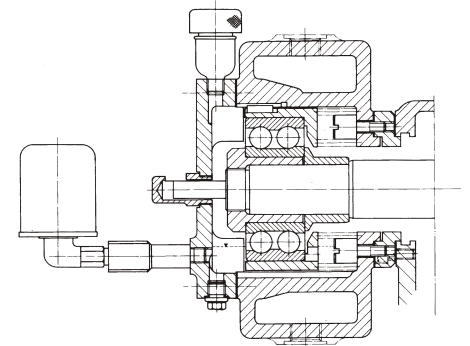
Guarantees axial thrust balancing by balancing disc
No residual thrust
Negligible abrasion
Higher pump efficiency
Small amount of balancing leak off

Perfect and safe casing sealing by metallic sealing faces together with 'O' rings.

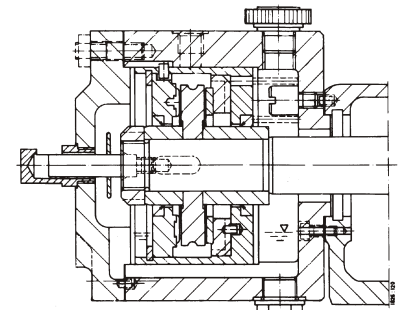
Easily replaceable impeller rings, wearing rings and stage sleeve of reliable materials with anti-galling properties, available on request

Long life robust ring / pressure oil lubricated plain bearings. Pump with antifriction bearing with sump oil lubrication and plain bearing with ring oil lubrication is also possible.

Labyrinth rings prevent the ingress of flow medium, sealing liquid and contamination as well as leaking of lubricating oil.



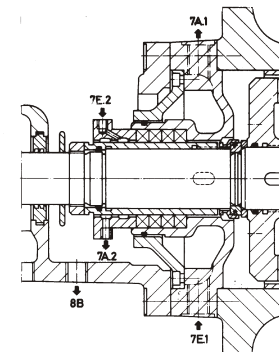
Lift off device - ball bearing



Lift off device - segmental thrust bearing

Spring loaded Lift off device with ball bearing/ segmental thrust bearing execution, separates positively the balancing disc off the counter balancing disc during

- transient operating condition
- lower speeds
- higher number of starts-stops
- Drive through electric motor without its own thrust bearing



Soft packed cooled stuffing box with external sealing