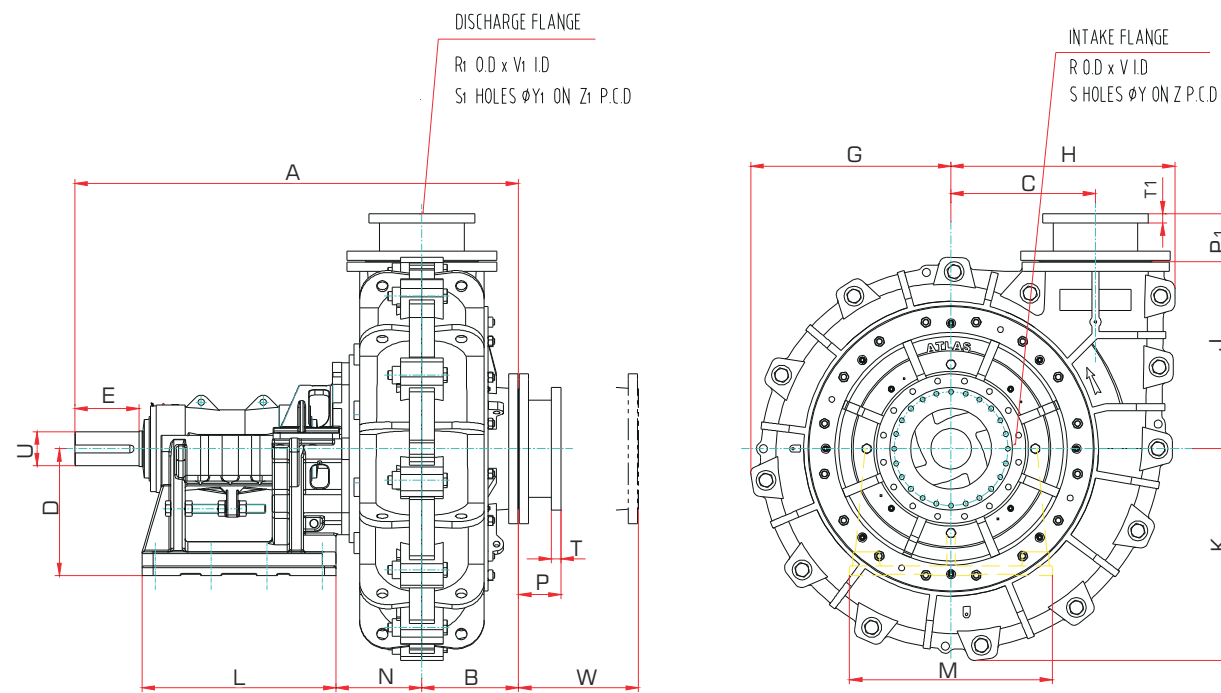


## OUTLINE DIMENSIONS



MODEL	A	B	C	D	E	G	H	J	K	L	M	N	U	KEY	W	INTAKE								DISCHARGE							
																P	T	R	V	S	Y	Z	P <sub>i</sub>	T <sub>i</sub>	R <sub>i</sub>	V <sub>i</sub>	S <sub>i</sub>	Y <sub>i</sub>	Z <sub>i</sub>		
6X5	1200	206	240	457	222	378	412	385	384	448	622	240	85	22X14	364	130	25	279	154	8	22	241	120	24	254	128	8	22	216		
8X6	1247	243	351	457	222	533	569	532	554	448	622	265	85	22X14	400	140	28	343	202	8	22	298	130	25	279	154	8	22	241		
10X8	1670	335	485	610	290	725	752	745	740	705	990	383	120	32X18	460	150	30	406	254	12	25	362	140	28	343	202	8	22	298		
12X10	1742	390	560	610	290	824	868	850	847	705	990	399	120	32X18	350	160	32	432	305	12	25	432	150	30	406	254	12	25	362		
14X12	2010	381	629	851	357	940	1020	879	980	876	1219	393	150	36X20	870	170	35	535	350	12	28	476	160	32	432	304	12	25	432		
16X14	2262	404	697	900	350	1030	1123	970	1077	1050	1460	502	150	36X20	390	180	37	597	400	16	28	540	170	35	535	350	12	28	476		
18X16	2412	510	801	900	350	1148	1281	1156	1199	1050	1460	520	150	36X20	450	190	40	635	450	16	32	578	180	37	597	400	16	28	540		
20X18	2468	580	930	900	350	1293	1431	1207	1345	1050	1460	520	150	36X20	850	210	43	700	500	20	32	635	190	40	635	450	16	32	578		
26X22	3180	680	1025	900	455	1406	1550	1322	1479	1375	1440	610	240	56X32	850	300	68	870	650	24	35	806	280	45	750	550	20	35	692		
30X26	3343	758	1200	900	455	1645	1853	1554	1755	1375	1440	709	240	56X32	1200	320	74	985	750	28	35	914	300	68	870	650	24	35	806		
34X30	3700	850	1500	1000	525	1918	2258	1850	2060	1525	1600	845	280	64X32	1650	350	82	1112	850	32	41	1029	320	74	985	750	28	35	914		

All dimensions are in millimeter (mm)

## ATLAS EQUIPMENT MANUFACTURING LTD., HEBEI, CHINA

Website: [www.atlas-pump.com](http://www.atlas-pump.com)

Address: 201# Taihang St. Hi-tech Zone, Shijiazhuang, China 050035

### Sales Dept:

Tel: 86-311-85832151 / 85832152

Fax: 86-311-87777076

Email: [sales@atlas-pump.com](mailto:sales@atlas-pump.com)

### Marketing Dept:

Tel: 86-311-85832212

Fax: 86-311-87777076

Email: [marketing@atlas-pump.com](mailto:marketing@atlas-pump.com)



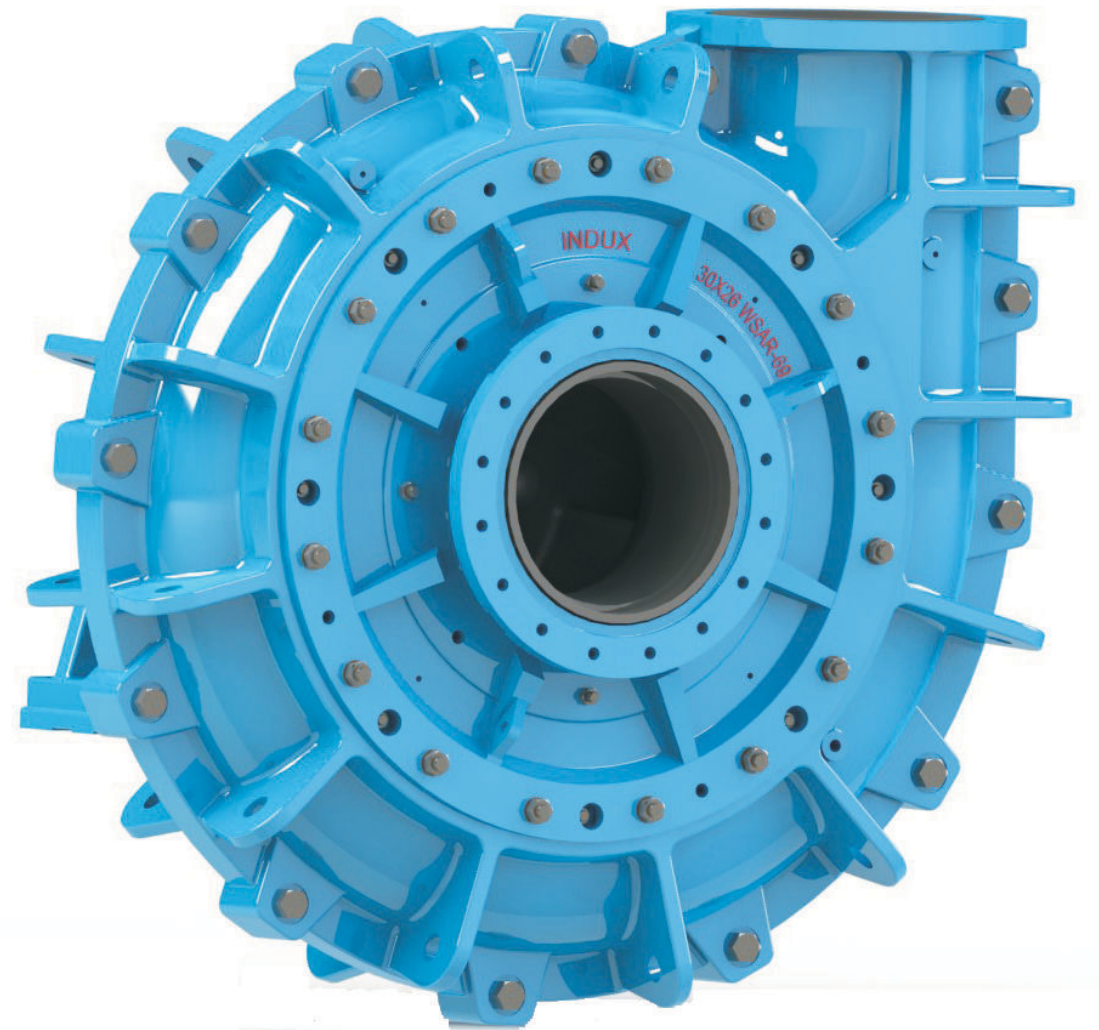
ATLAS PUMP INDUX®

Slurry pumping solutions

WSA(R)

Mill Circuit Pump

Mining | Dredging | Coal Washing

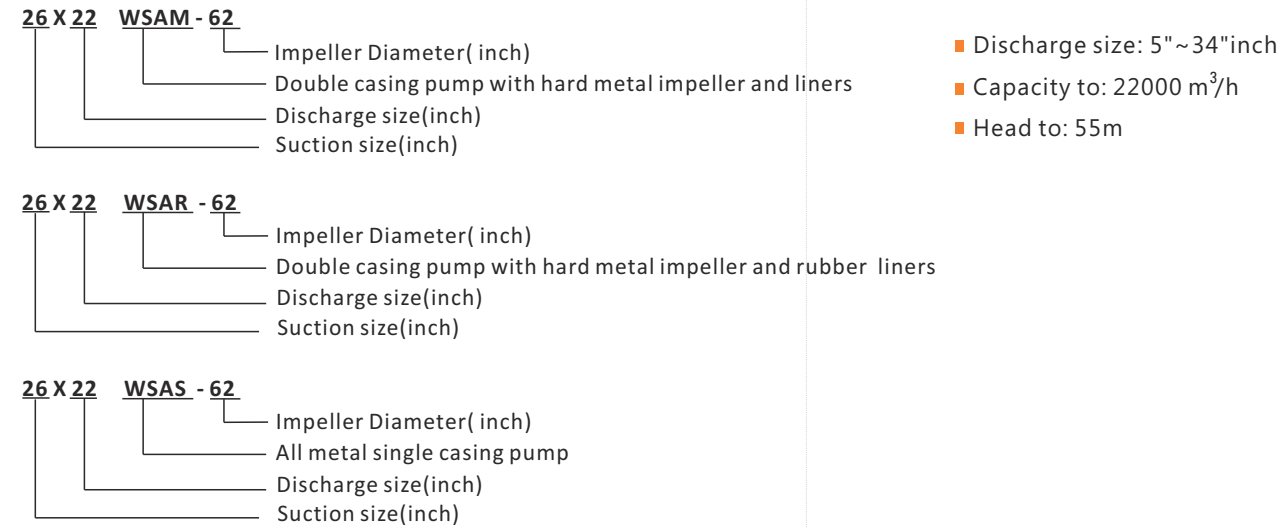


## WSA MILL CIRCUIT PUMPS - designed for the most severe and aggressive applications

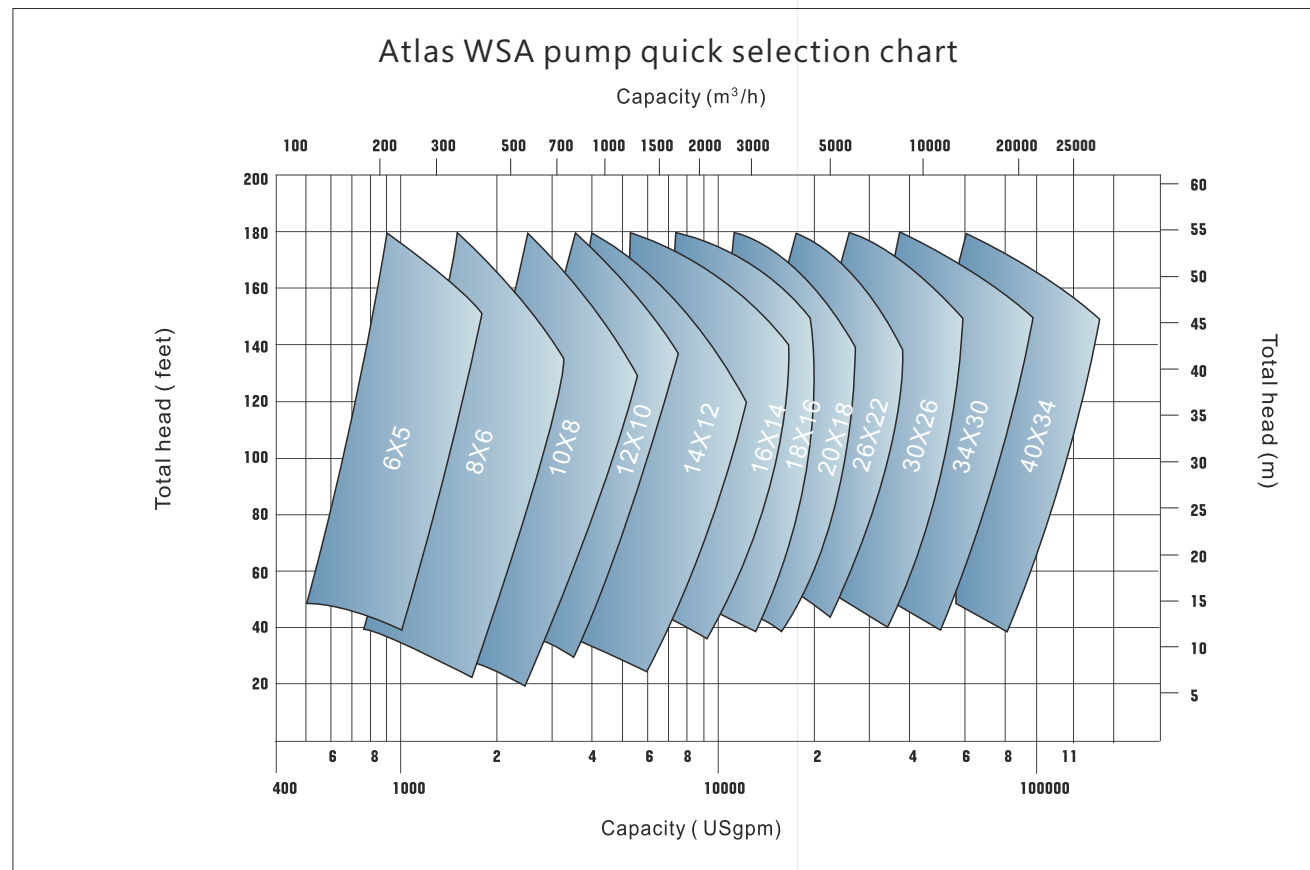
The WSA Slurry Pump series is particularly designed for the most aggressive applications like ball and Sag Mill cyclone feed, dredging and all coarse sand slurries. The WSA series are designed to pump highly concentrated slurries and slurries containing large particles which standard slurry pumps cannot deal with effectively.

Making use of hard metal impellers & liners or hard metal Impellers combined with elastomer liners are optional in achieving maximum wear life whilst ensuring reduced maintenance costs.

### Model Descriptions



## QUICK SELECTION CHART



## TYPICAL APPLICATIONS

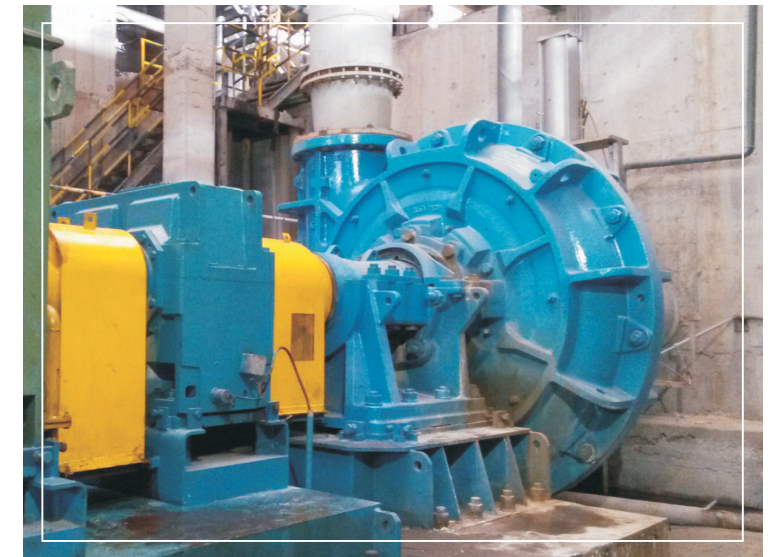
### Mineral Processing

Large suction and discharge sizes as well as a wide passage design are suited for sever applications such as mill discharge (cyclone feeds) in mineral processes. Hard Metal or elastomer liners are optional in different processes which extend the life of the pump and reduce Total Cost of Ownership.



### Coal Washing

A thick impeller and liner plus a wide passage allow large particles to pass through the pump. It is the ideal design for heavy media circuit/slurry in Coal Washing applications.



### Dredging

The use of hard metals and the inclusion of a specific large passage design makes the WSAS pump an outstanding performer in most gravel pump applications.

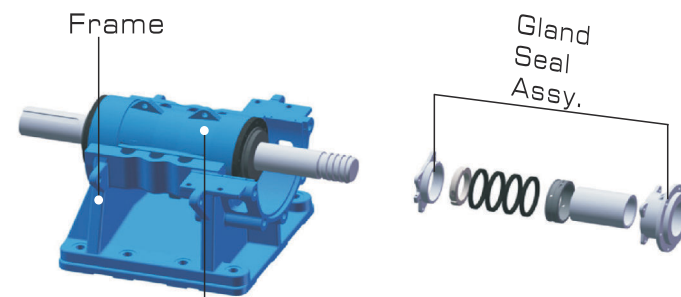


## STRUCTURES & FEATURES

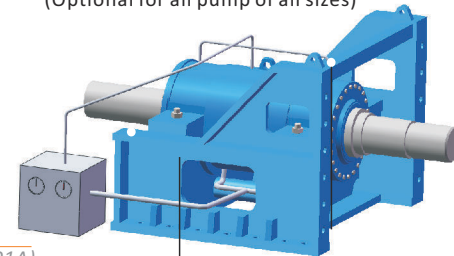
- WSAM - hard metal impeller and lined double casing pump.
- WSAR - hard metal and elastomer molded liners double casing pump.
- WSAS - single casing unlined hard metal pump.
- Interchangeable parts and a wide range of hard alloys plus molded elastomer materials are optional in manufacturing liners, this allows for the best balanced wear life on each component
- Large diameter impellers with a wide passage design assures lower running speeds which achieve longer wear life and reduces maintenance.
- A short and large diameter shaft together with quality heavy duty roller bearings reduce shaft bending, pump vibration and overheating whilst pump is in operation.
- The clearance between the impeller and the throat bush can be adjusted to assure the pumps run at their best efficiencies.
- Flange sizes are in accord with standard ASME/ANSI B16.5 and 16.47, or be customized regarding specific requirement.

### Oil or grease Lubrications are optional

Grease lubrication Bearing Assy.  
(only for pump sizes of 5"~22")



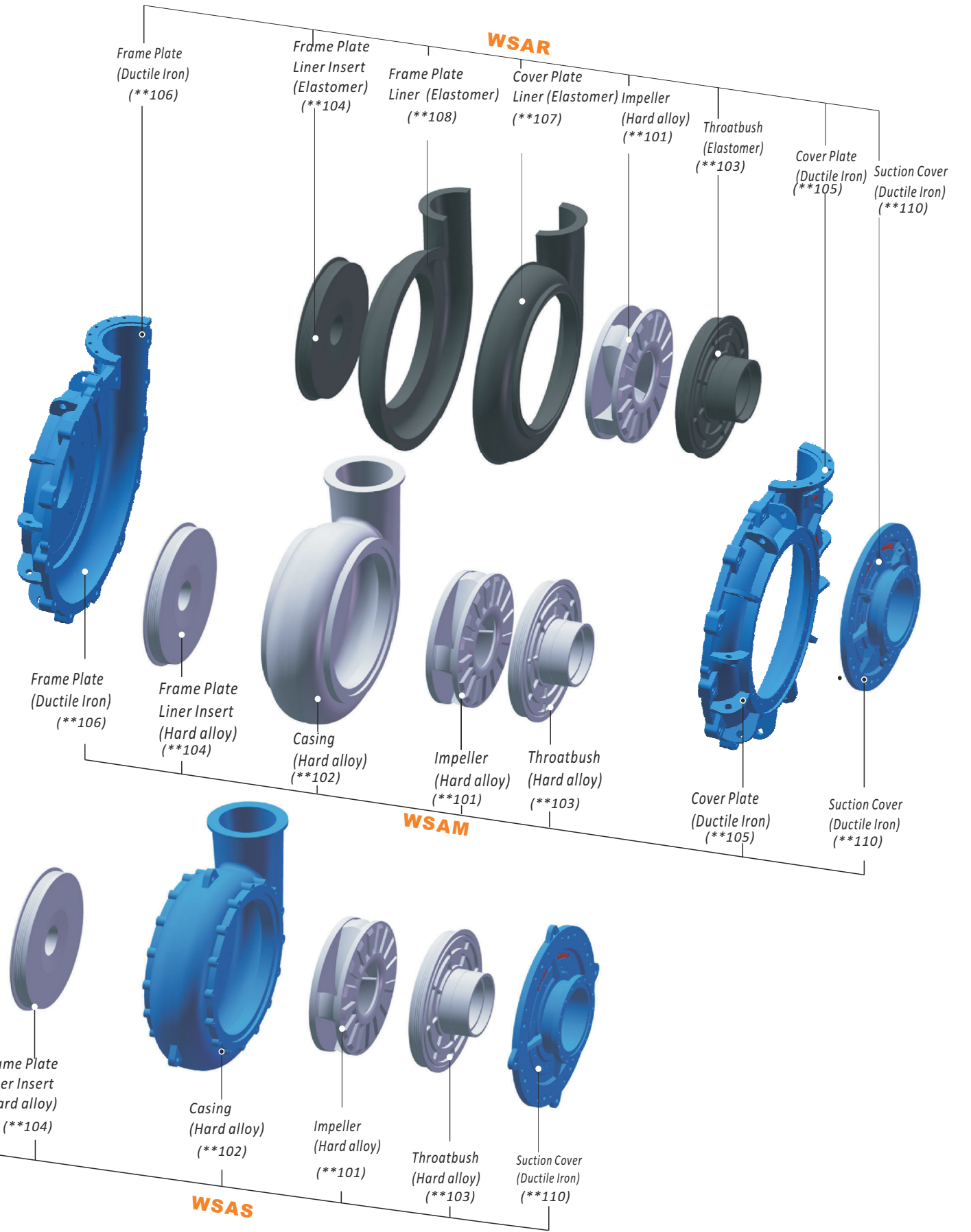
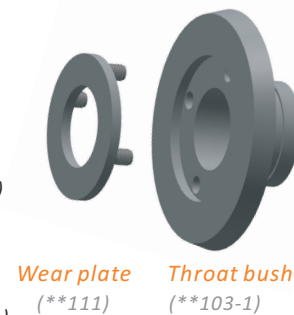
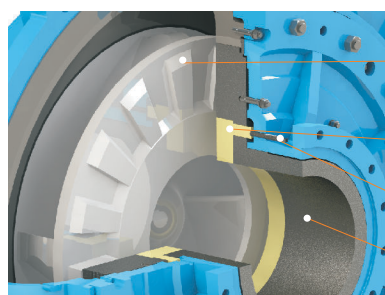
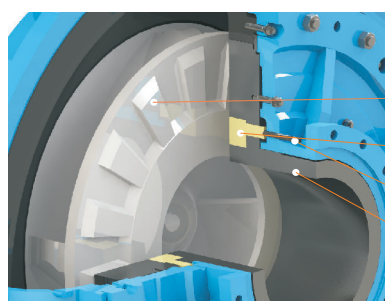
Oil lubrication Bearing Assy.  
(Optional for all pump of all sizes)



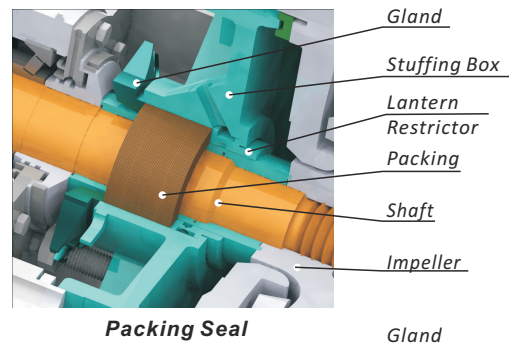
### Adjustable impeller clearance structure is optional

Wear plate could be pushed forward to Impeller several times in its whole service life, to maintain the pump performs in its best efficiency. No need to stop the pump while adjust the Wear Plate.

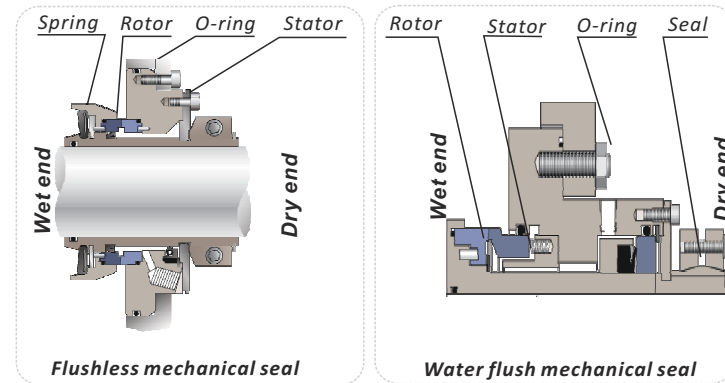
The adjusting studs with square head are very easy to be screwed in to push the Wear Plate closer towards the impeller with simple tools.



## SHAFT SEAL



**Packing seal** – Most popular type of seal. Clean water at a certain pressure being injected into the packing through the lantern restrictor, preventing leakage from casing. Simple structure, easy maintenance and low cost.



Water flush seals are preferential unless field condition are inapplicable

**Mechanical seal** – Suitable for applications where no extra substance is allowed to mix with the fluid being pumped, such as chemical or food industry.

Water flush seals are preferential unless field condition are inapplicable

## CLEAR WATER PERFORMANCE

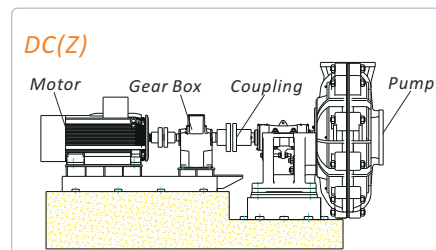
WSA Clear Water Performance

Model	Max.Motor Power Kw	Material		Clear Water Performance					
		Liner	Impeller	Capacity		Head H(m)	Pump speed n(r/min)	Eff. η%	NPSH (m)
				(m <sup>3</sup> /hr)	(l/s)				
6X5WSAM/S-16	225	M	M	72 ~ 360	20 ~ 100	13 ~ 62	800 ~ 1600	68	3 ~ 8
6X5WSAR-16		RU	M	72 ~ 360	20 ~ 100	13 ~ 44	800 ~ 1350	68	2 ~ 5
8X6WSAM/S-22	425	M	M	180 ~ 720	50 ~ 200	10 ~ 61	500 ~ 1140	71	2 ~ 8
8X6WSAR-22		RU	M	180 ~ 720	50 ~ 200	10 ~ 48	500 ~ 1000	71	2 ~ 7
10X8WSAM/S-32	560	M	M	200 ~ 1300	55 ~ 361	7 ~ 58	400 ~ 800	73	1 ~ 7
10X8WSAR-32		RU	M	200 ~ 1100	55 ~ 305	7 ~ 45	400 ~ 700	73	1 ~ 6
12X10WSAM/S-35	560	M	M	250 ~ 1700	69 ~ 472	8 ~ 70	300 ~ 800	74	2 ~ 7.5
12X10WSAR-35		RU	M	250 ~ 1500	69 ~ 416	8 ~ 54	300 ~ 700	74	2 ~ 5.5
14X12WSAM/S-40	900	M	M	432 ~ 2880	120 ~ 800	13.5 ~ 64	300 ~ 600	78	3 ~ 14
14X12WSAR-40		RU	M	432 ~ 2520	120 ~ 700	13.5 ~ 53.5	300 ~ 550	78	3 ~ 10
16X14WSAM/S-45	1600	M	M	850 ~ 4500	236 ~ 1250	15 ~ 82	300 ~ 600	79	2.5 ~ 15
16X14WSAR-45		RU	M	850 ~ 4000	236 ~ 1111	15 ~ 67	300 ~ 550	79	2.5 ~ 13
18X16WSAM/S-50	1600	M	M	1000 ~ 5000	277 ~ 1388	9 ~ 66	200 ~ 500	81	2 ~ 11
18X16WSAR-50		RU	M	1000 ~ 4500	277 ~ 1250	9 ~ 54	200 ~ 450	81	2 ~ 10
20X18WSAM/S-56	2500	M	M	1200 ~ 6500	333 ~ 1805	12 ~ 77	200 ~ 450	83	2 ~ 10
20X18WSAR-56		RU	M	1200 ~ 6000	333 ~ 1666	12 ~ 61	200 ~ 400	83	2 ~ 9
26X22WSAM/S-62	3000	M	M	1800 ~ 8280	500 ~ 2300	14 ~ 76	200 ~ 425	86	2 ~ 9
26X22WSAR-62		RU	M	1800 ~ 7560	500 ~ 2100	14 ~ 60	200 ~ 375	86	2 ~ 7.5
30X26WSAM/S-69	4000	M	M	5000 ~ 12600	800 ~ 3500	10 ~ 70	150 ~ 375	86	2 ~ 9
30X26WSAR-69		RU	M	2880 ~ 10800	800 ~ 3000	10 ~ 54	150 ~ 325	86	2 ~ 6.5
34X30WSAS-79	5000	M	M	5000 ~ 19000	1389 ~ 5278	10 ~ 58	140 ~ 300	88	2 ~ 7.5
40X34WSAS-100	6000	M	M	6000 ~ 22000	1667 ~ 6111	10 ~ 56	100 ~ 250	88	2 ~ 6

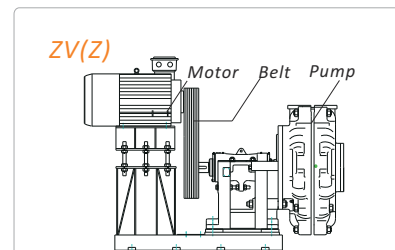
1. Recommend 50%Q' ≤ Q ≤ 110%Q', (Q' ≈ Capacity at Max. eff. point) 2. M means metal, R means rubber

## DRIVE ARRANGMENTS

**DC(Z)**– Use gear box to obtain lower speeds, couplings connecting the pump and motor together.



**ZV(Z)**– Use pulleys and belts to obtain lower speeds.



## MATERIAL OPTIONS

### Hard Metals

Material Code	Material Description	Performance Comparison				Applicable Parts		Applications
		Hardness HRC	Anti-Brush	PH Value	Max. Particle Size	Impeller	Liner	
AT01	Medium-Cr Martensitic White Iron	≥55	0.9	3 7 12		●	●	Mud & slag applications.
AT03	Ni-Martensitic White Iron	≥56	0.8			●	●	Neutral water-sand slurry or lower impact load.
AT05	27% Cr White Iron	≥56	1.0 (Datum)			●	●	High impact load abrasion PH rate ranging from 5 to 12.
AT07	Chromium/Molybdenum	≥58	1.2			●	●	High impact load abrasion.
AT08	27% Cr White Iron	≥56	1.0			●	●	Same as AT05, suit for thick wall parts.
AT11	Low Alloy With Iron	38-42	0.7			●	●	Fine particles, light abrasion.
AT12	30% Cr Hyper eutectic Chromium White Iron	≥62	1.5			●		Highly abrasive, fine particles.
AT33	33% Cr Erosions & Corrosion Resistance White Iron	≥43	0.7			●	●	Acidic slurries like Phosphoric.
AT49	28% Cr Low Carbon White Iron	≥45	0.7			●	●	FGD process in power plant
AT530	Super high-Cr White Iron	63-68	1.8			●		Severe abrasive, fine particles.

### Rubbers

Material Code	Polymer	Applications
RT08	Natural Rubber	Black medium hardness rubber mainly used in impellers for fine slurry applications where cutting and chunking resistant is required. Due to its hardness, it is less prone to deformation during running. Formulated with excellent protection against the environment for maximum storage stability.
RT26	Natural Rubber	A soft black natural rubber with good protection against the environment for storage stability and ageing properties. High resilience and good physical properties, suitable for fine slurry applications.
RT55	Natural Rubber	Black medium hardness rubber with excellent resistance against the environment for maximum storage stability. General purpose grade for fine to medium slurry applications. Good erosion resistance and physical properties.
RT66	Natural Rubber	Black medium hardness rubber used mainly in impellers, suitable for application where chunking and cutting resistant is required. Specially formulated to give excellent erosion resistance for medium to coarse aggregates. Well protected against weather and ageing for maximum storage stability.
ST01	EPDM	Medium hardness rubber for seal application.
ST02	EPDM	Soft to medium hardness rubber for seal application.
ST12	NBR	Black synthetic rubber with moderate wear resistance. Suitable for applications where organic oils and fats resistance is required. Formulated with good protection against the environment for good storage properties.
ST21	Butyl	Black synthetic rubber with moderate wear resistance, suitable for applications where weak acid or alkali are presence. Suitable for working temperature exceeding 100°C.
ST31	Hypalon	Black synthetic rubber, for weather, heat and chemical resistance applications. Moderate wear properties, however excellent performance for strong acid applications.
ST42	Polychloroprene	Black synthetic rubber for impellers and liners with good resistance against mineral oils. Excellent performance in oil and gas application.
ST51	Fluoroelastomer	Black synthetic rubber with exceptional resistance to chemicals and oil at high temperature.

### Polyurathane

Material Code	Hardness Shore A	Tensile strength/MPa	Elongation at break / %	Performance	Applicable conditions
PC01	80	36	440	Excellent wear and corrosion properties. Excellent tensile and tear properties.	-Abrasion resistance, adhesion to metal, tear resistance, oxidation and weather resistance, in animal and vegetable oils, aliphatic fuels, mineral oil and silicone oil.
PC02	90	45	490	Excellent wear and corrosion properties. Excellent tensile and tear properties.	-Suit for Slurries PH range 1~14.
PC03	95	41	490	Exceptional wear properties, better than PC01 and PC02. Excellent tensile and tear properties.	-Suitable for fine to medium particle erosive slurry applications. Max particle size could be 10mm.
PC04	60	46	600	Excellent wear and corrosion properties. Excellent Tensile properties with medium tear.	-Max. tip speed could be 30m/sec.