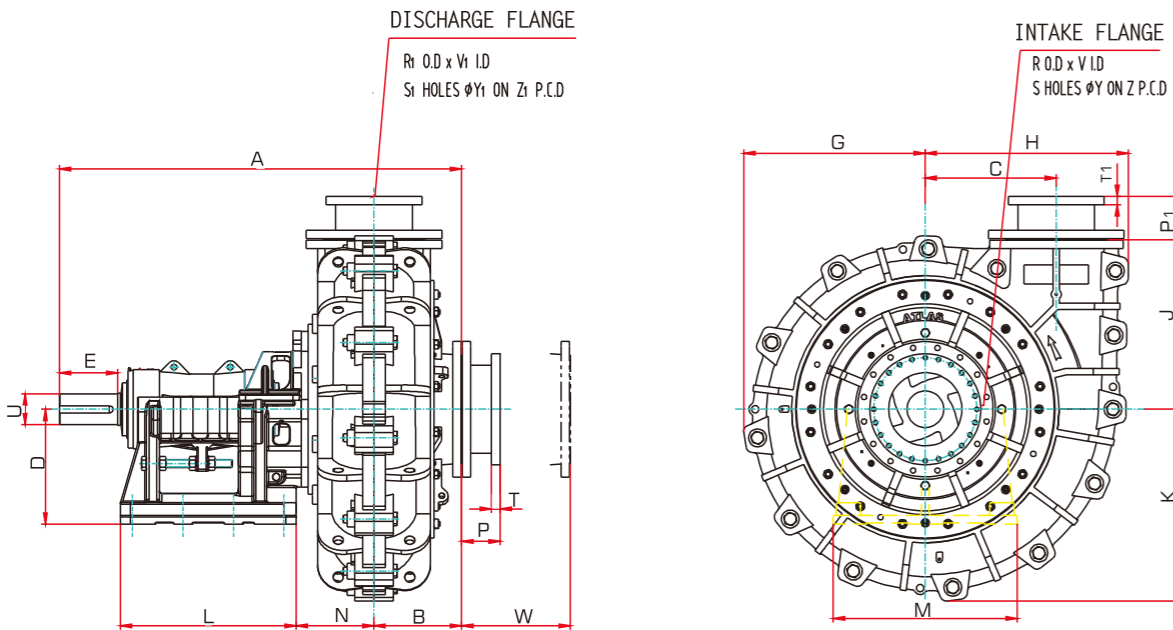


## OUTLINE DIMENSION



Pump 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)

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**TIEC**  
GROUP

INDUX®  
**ATLAS**

**WSA(R)**  
Mill Circuit Pump

Mining | Coal Washing | Power Plant | Dredging



## WSA MILL CIRCUIT PUMPS

The WSA Slurry Pumps series are designed to handle the most aggressive applications like Ball and Sag Mill, Cyclone feed, Dredging and all coarse slurries, to pump highly concentrated slurries with large particles, which standard slurry pumps are unable to effectively handle.

With use of chrome hardened impellers & liners or elastomer parts, even combining the two components, ensures optimal wear life, thus reducing maintenance costs, cost of ownership and minimises downtime.

### Model Descriptions

**26 X 22 WSAM - 62**

- Impeller diameter( inch)
- Double casing pump with hard metal impeller and liners
- Discharge size(inch)
- Suction size(inch)

- Discharge size: 5"~34"inch
- Capacity to: 22000 m<sup>3</sup>/h
- Head to: 55m

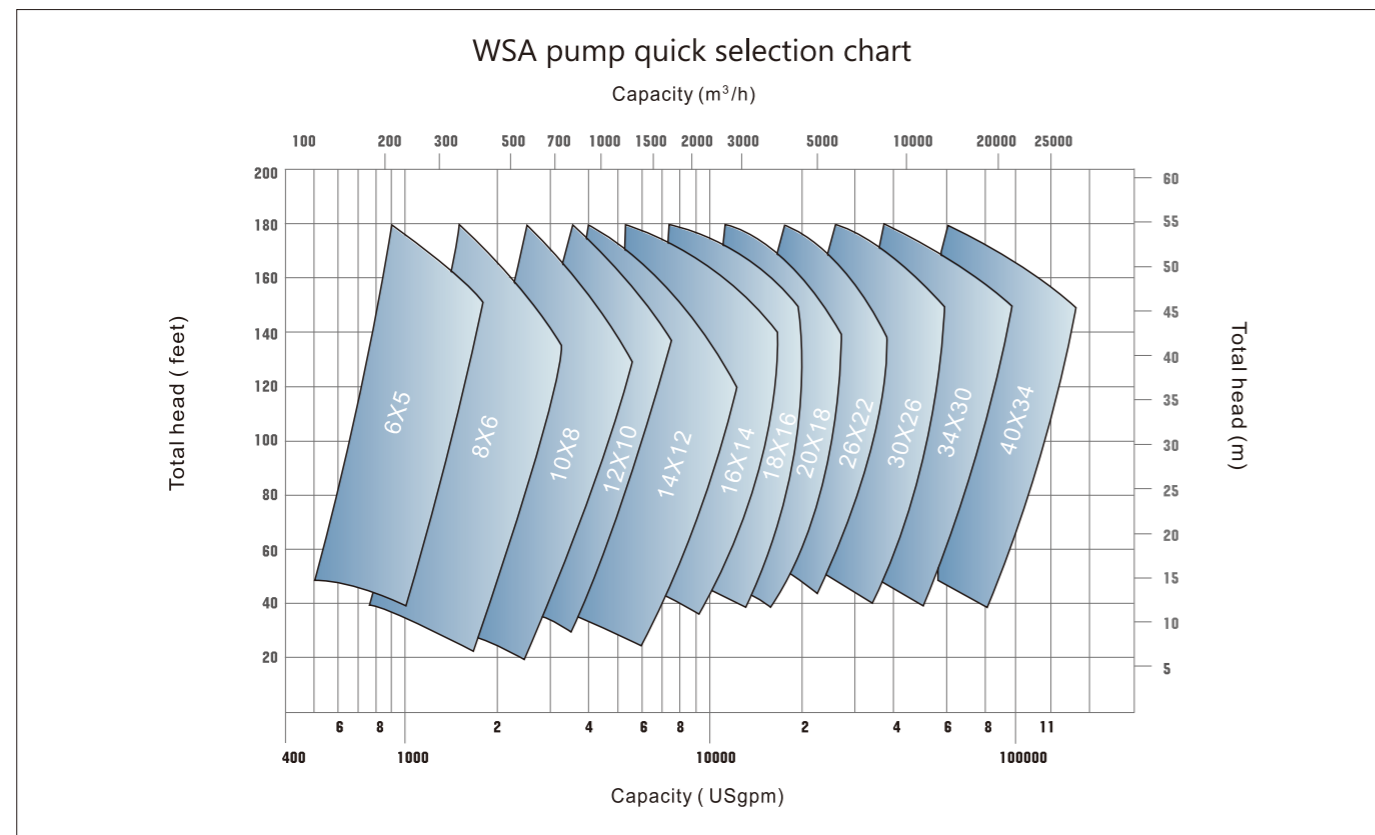
**26 X 22 WSAR - 62**

- Impeller diameter( inch)
- Double casing pump with hard metal impeller and rubber liners
- Discharge size(inch)
- Suction size(inch)

**26 X 22 WSAS - 62**

- Impeller diameter( inch)
- All metal single casing pump
- Discharge size(inch)
- Suction size(inch)

## QUICK SELECTION CHART



## TYPICAL APPLICATIONS

With large suction and discharge sizes, the large internal clearance design makes WSA pumps suitable for a wide variety of applications, such as mill discharge, cyclone feed pump, dredging pump and other severe concentrates used in mineral processing.

### Applications:

- Ball Mill Discharge
- SAG Mill
- Discharge Coarse
- Sand Mineral
- Sands Wet
- Crushers
- Oil Sands



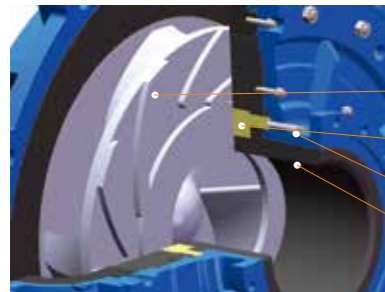
## STRUCTURES & FEATURES

- WSAM - hard metal impeller and lined double casing pump.
- WSAR - hard metal and elastomer moulded liners double casing pump.
- WSAS - single casing unlined hard metal pump.
- Fully interchangeable parts and a wide range of hard alloys, plus moulded elastomer materials are optional in manufacturing liners, this allows for the best-balanced wear life for each component.
- Large diameter impellers with a larger internal clearance design, assures lower running speeds, which achieve ultimate wear life and reduces maintenance costs and downtime.
- A shorter and larger diameter shaft, together with high quality, heavy duty roller bearings reduces the risk of shaft bending, pump vibration and overheating under production demands.
- The clearance between the impeller and the throat bush can be adjusted to ensure the pumps run to best efficiency point at all times.
- Flange sizes are in accordance with ASME/ANSI B16.5 and 16.47 standards or can be customized to suit specific requirement.

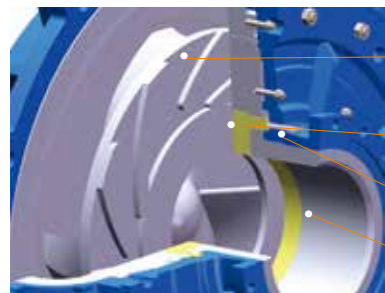
### Adjustable impeller clearance structure is optional

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 adjusting 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.



- Impeller (Hard Alloy) (\*\*101A)
- Wear Plate (Hard Metal) (\*\*111)
- Adjusting Bolt
- Throat Bush (Hard Elastomer) (\*\*103-1)



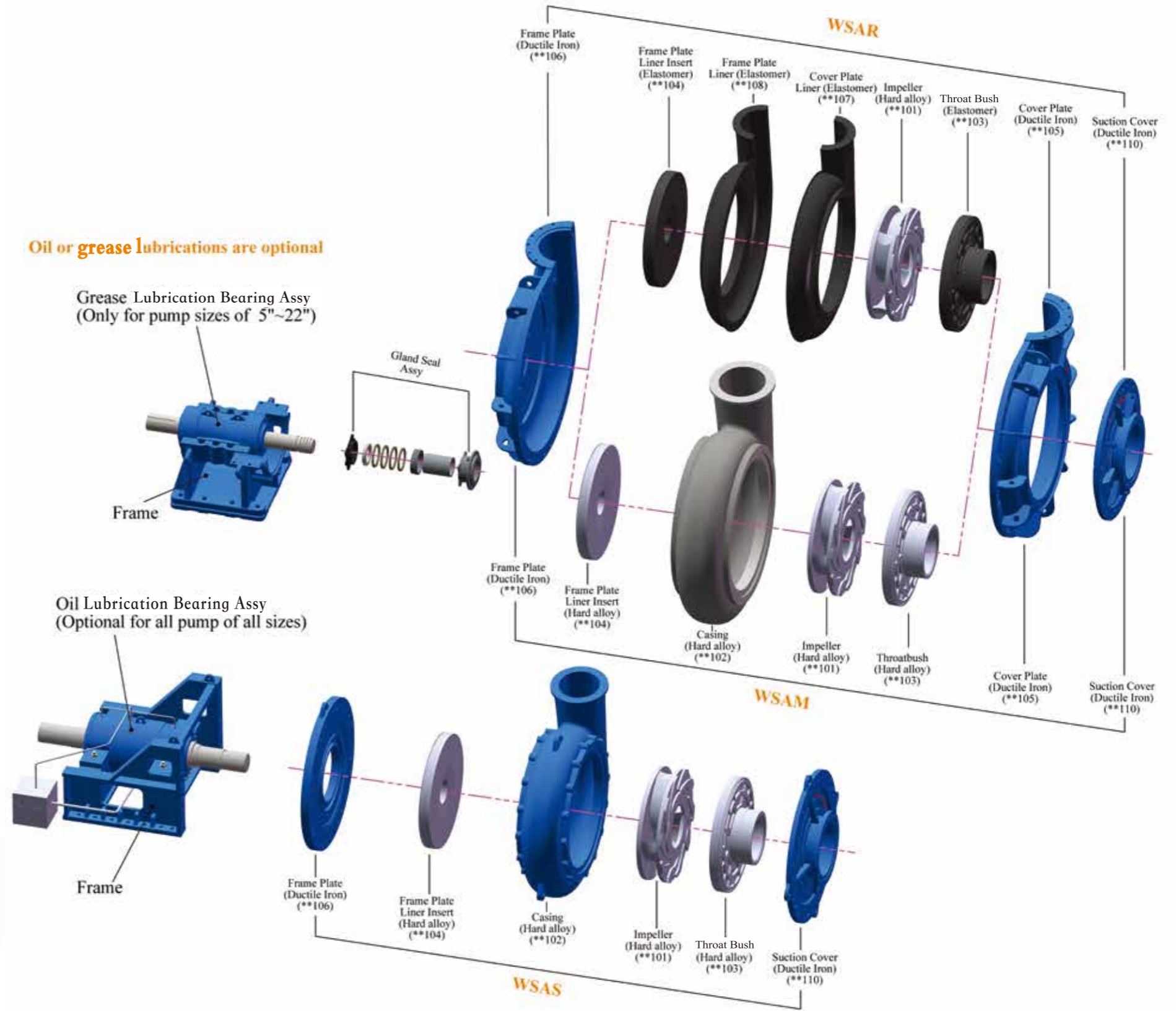
- Impeller(Hard Alloy) (\*\*101A)
- Wear Plate (Hard Metal) (\*\*111)
- Adjusting Bolt
- Throat Bush(Hard Alloy) (\*\*103-1)



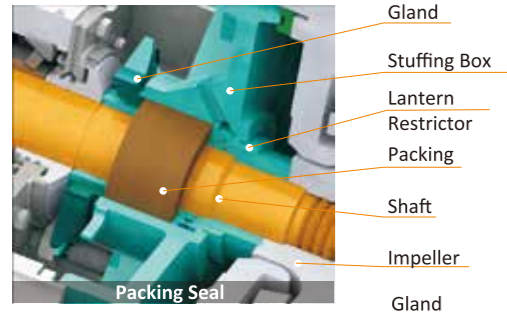
Wear plate (\*\*111)

Throat bush (\*\*103-1/103-3)

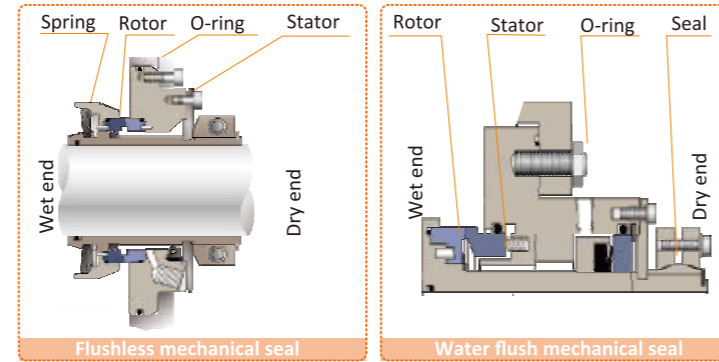
### Oil or grease lubrications are optional



## 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 to maintenance and low cost.



Water flush seals are preferential unless field condition is not applicable

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

Water flush seals are preferential unless field condition is not applicable

## 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		R	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		R	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		R	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		R	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		R	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		R	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		R	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		R	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		R	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		R	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  $50\%Q' \leq Q \leq 110\%Q'$ ; ( $Q' \approx$  Capacity at Max. eff. point) 2. M means metal, R means rubber

## MATERIAL OPTIONS

### Hard Metals

Material Code	Material Description	Performance Comparison				Applicable Parts		Applications
		Hardness HRC	Anti-Brush	PH Value 3 7 12	Max. Particle Size	Impeller Liner		
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.
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.

## DRIVE ARRANGEMENTS

**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.

