

WEH

Minerals

**WARMAN® Centrifugal
Slurry Pumps**

WBH® Pump



New design and manufacturing techniques result in improvements in performance — all with the Warman® slurry pump quality that you expect

Technology with a purpose

The Warman® WBH® slurry pump range offers more than 20 enhancements to the state-of-the-art Warman® AH® slurry pump, including a fully adjustable and rotatable throatbush to more evenly spread the wear and maintain the pump in tip-top performance for longer periods.

Boasting a revolutionary one-piece frame for correct alignment of bearings, seal and impeller to front liner; as well as easier access for impeller adjustments, the WBH® pump was built with enhanced efficiency and operational savings in mind.

Adjustable front liner

The 'One Point' front liner adjustment feature allows to both rotate and axially move to minimise front impeller gap to reduce wear and maintain performance.

This adjustment can even be made with the pump running without needing to stop production. So you are saving money.



'One-point' adjustment device to rotate and axially move the cover plate liner closer to the impeller. This will minimize the front impeller gap, hence reducing recirculation, which leads to extended wear and maintains performance.



The Warman® WBH® centrifugal slurry pump — meeting the productivity and cost demands of customers in all types of operating environments.

Improved performance and service life

The WBH® pump was designed to ensure that you receive not just superior performance, but also enhanced service life.

- Wear components designed and optimized using state of the art Computational Fluid Dynamics methods
- Large capacity bearings that can withstand high loads including thrust while still providing long bearing life
- Commercial labyrinth style bearing end cover seals
- Streamlined impeller and volute design flow paths that combine high efficiency and long life
- Enhanced performance impeller and liner
- High pressure rating with metal and rubber liners
- Encapsulated rubber liners for longer life and to prevent liner extrusion or blow-out
- Large diameter Warman Hi-Seal™ expeller for sealing at high intake pressures

- Fully adjustable throatbush that moves axially, as well as rotates, to distribute the wear evenly and extend the impeller and throatbush life
- Interchangeable and mixed metal and rubber wear components in the one pump casing
- The impeller is designed for improved slurry guidance for smoother flow throughout the pump for improved life
- Massive unitised and rigid bearing frame to minimize vibrations and distortions from external piping loads
- Large rigid frame can use either grease or oil lubrication

Reduced energy usage

The WBH® pump is a high efficiency unit and boasts a broader efficiency curve than competitive pumps.

Enhanced safety design

The WBH® pump is designed with safety in mind, working hard to minimize the risk of potential catastrophic failure.

- Leak detection as standard
- Vibration, temperature and wear monitoring optional
- Pressure relief and thermal cut-out devices can also be added



New one-piece WBH® bearing frame design for correct alignment of bearings, seal and impeller to front liner. Less part count. More robust.

Outstanding slurry management

With the streamlined impeller inlet of the WBH® pump, there is enhanced handling of even the most difficult slurries.

The low-flow gland seal, expeller seal and mechanical seal options on the WBH® pump mean there is less dilution of the slurry and lower required flow of gland water.

The WBH® pump range has proven performance and wear advantages which will re-write the Total Ownership Cost equation for many end-users



Ease of maintenance and longer maintenance intervals

At Weir Minerals we understand the importance of easy and predictable maintenance, and so the WBH® pump range was designed with these thoughts in mind.

- Alignment features throughout ensure all components are in exact alignment along the pump shaft from drive coupling to the throatbush
- Seal chamber is aligned accurately with the shaft



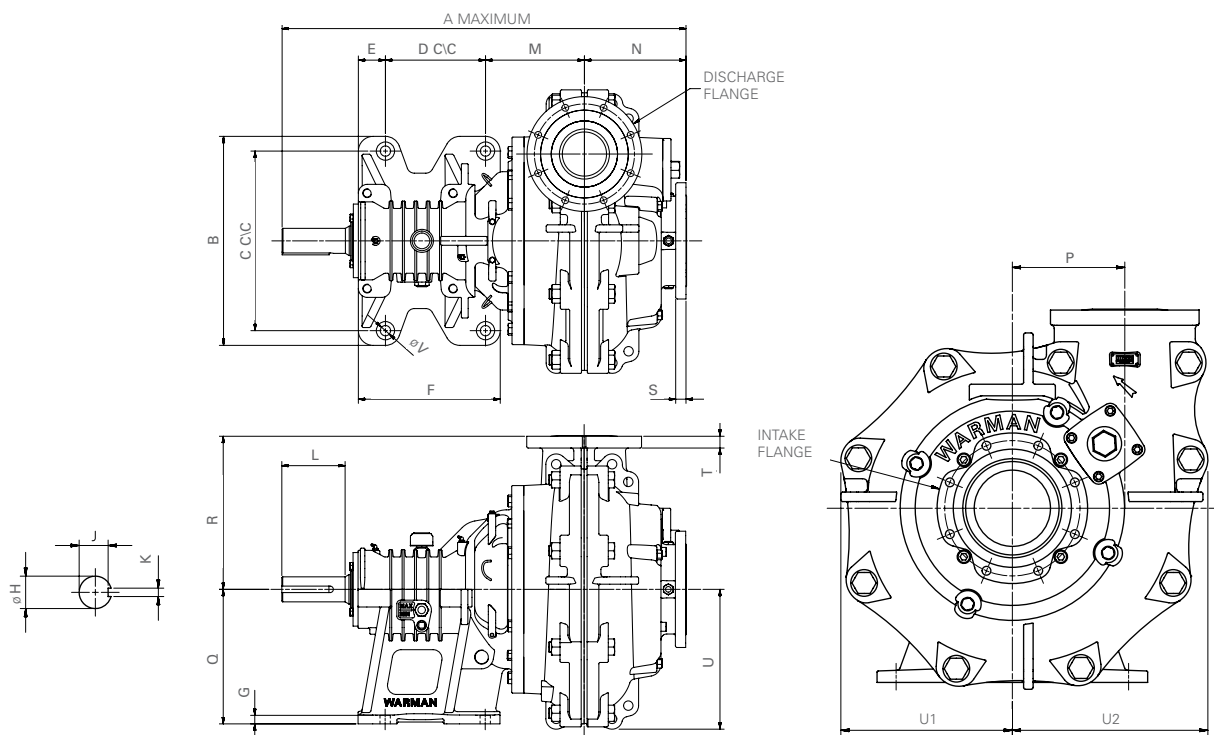
One-point front liner adjustment can be carried out with pump running. Unique axial and rotational movement minimizes front impeller gap to reduce wear and maintain performance.

- External ribs assist to transfer heat and keep the bearings cool
- Large robust bearings that can run at high speed
- Reversible and slip-fit shaft sleeve
- Impeller release collar in larger sized models to ease impeller removal
- One point adjustable throatbush for manual, motorised or automatic throatbush adjustment while the pump is running
- Lifting lugs on all major components and lifting tools that fit both new and worn wearing components
- Once installed, bearings and drive remain fixed
- Rigid overhung shaft with short overhang and large diameter shaft for minimum deflection, and improved reliability of mechanical seals
- Unique liner fixing method reduces assembly time — no fine threads so threads cannot become blocked and require re-tapping
- Improved assembly and disassembly procedures
- Self aligning pump casing halves prevent movement or dislodgement of elastomer liners during assembly
- Nonmetallic split lantern ring for ease of removal and replacement without dismantling the pump
- Minimum number of components and minimum number of larger bolts to ease maintenance
- Three point lift for the bare shaft pump
- Impeller release collar for low-torque impeller removal
- Throatbush adjustment allows the impeller to throatbush gap to be minimised at all times; during assembly and when installed in service either running or stopped



Warman® WBH® slurry pumps - outline dimensions

To be used for preliminary selection only. All measurements in mm.



Note: Dimensions A, N, R, S and T include compression of Warman® rubber joints.

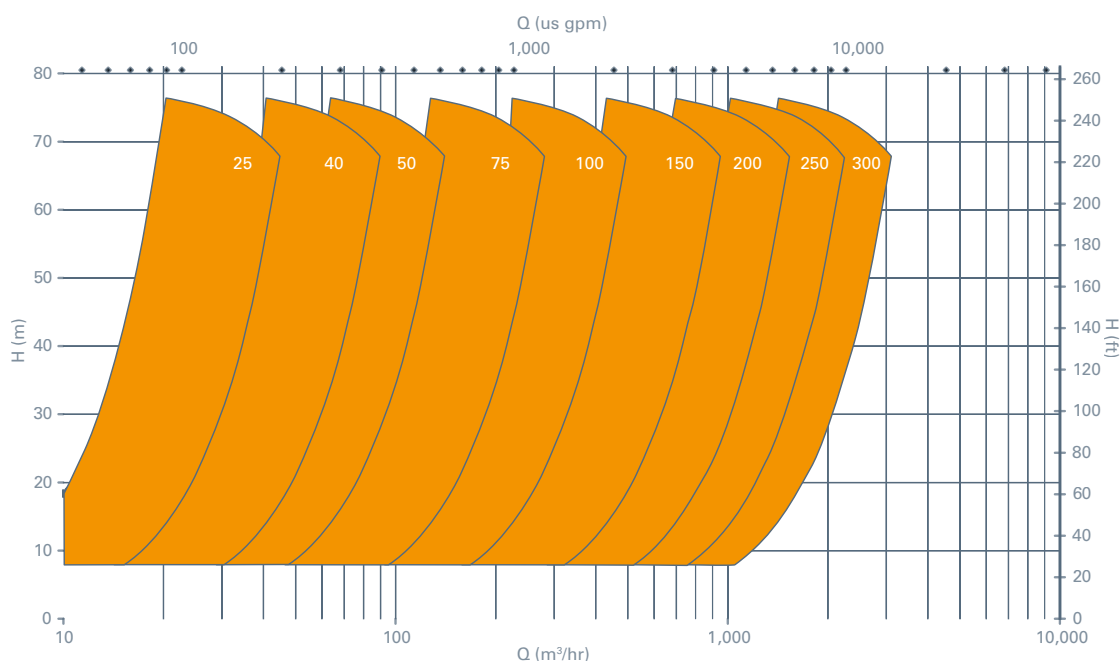
Pump Size	Base Dimensions							Discharge Flange				Intake Flange			
	A	B	C	D	E	F	G	O.D	No. of Holes	Hole Dia	P.C.D	O.D	No. of Holes	Hole Dia	P.C.D
25 MC-WBH	687	310	260	200	25	250	18	185	4	18	146	205	4	18	165
40 MC-WBH	687	310	260	200	25	250	18	185	4	18	146	205	4	18	165
50 NC-WBH	772	330	280	230	25	280	20		4	18	178	220	4	18	178
75 NPC-WBH	832	330	280	230	25	280	20	280	8	18	235	280	8	18	235
75 PC-WBH	890	430	370	230	55	315	20	280	8	18	235	280	8	18	235
100 PQC-WBH	956	406	356	175	55	269	20	305	4	23	260	325	8	23	280
100 QC-WBH	1109	540	470	300	65	400	25	305	4	23	260	325	8	23	280
150 QRC-WBH	1201	502	432	213	49	297	25	390	8	23	340	395	8	23	355
150 RC-WBH	1372	710	610	340	92	482	30	390	8	23	340	395	8	23	355
200 RSC-WBH	1499	638	546	257	85	388	30	490	8	27	440	525	8	33	470
200 SC-WBH	1766	1000	850	460	135	670	40	490	8	27	440	525	8	33	470
250 SC-WBH	1836	1000	850	460	135	670	40	550	12	23	495	610	12	27	550
300 TC-WBH	2317	1120	960	640	156	876	45	660	12	33	580	690	12	33	615

Pump Size	Pump Head Dimensions										ØV	Mass kg Metal Lined	Mass kg Rubber Lined
	M	N	P	Q	R	S	T	U	U1	U2			
25 MC-WBH	187	155	110	197	235	18	19	200	200	202	18	160	137
40 MC-WBH	187	155	110	197	235	18	19	200	200	202	18	160	137
50 NC-WBH	202	190	120	197	266	22	20	270	265	280	18	221	190
75 NPC-WBH	222	230	160	197	330	24	24	340	335	350	18	398	328
75 PC-WBH	228	230	160	250	330	24	24	340	335	350	19	460	390
100 PQC-WBH	302	275	205	254	400	28	30	385	395	435	23	707	562
100 QC-WBH	272	275	205	300	400	28	30	385	395	435	23	780	670
150 QRC-WBH	398	345	295	330	520	35	40	475	450	513	33	1479	1122
150 RC-WBH	336	345	295	457	520	35	40	475	450	513	33	1680	1400
200 RSC-WBH	478	420	355	457	650	36	42	670	590	715	45	2856	2717
200 SC-WBH	428	420	355	610	650	36	42	670	590	715	45	3410	2900
250 SC-WBH	442	476	425	610	715	43	50	750	734	790	45	4514	3650
300 TC-WBH	547	555	485	610	810	45	50	848	855	918	51	6840	5730

Pump Size	Drive End Shaft Dimensions				
	ØH	J	K	L	KEY
25 MC-WBH	32.03/32.01	27.00/26.80	10.00/9.96	95	10 x 8
40 MC-WBH	32.03/32.01	27.00/26.80	10.00/9.96	95	10 x 8
50 NC-WBH	35.03/35.01	30.00/29.80	10.00/9.96	100	10 x 8
75 NPC-WBH	35.03/35.01	30.00/29.80	10.00/9.96	100	10 x 8
75 PC-WBH	45.02/45.01	39.50/39.30	14.00/13.96	115	14 x 9
100 PQC-WBH	45.02/45.01	39.50/39.30	14.00/13.96	115	14 x 9
100 QC-WBH	60.03/60.01	53.20/53.00	18.00/17.96	150	18 x 11
150 QRC-WBH	60.03/60.01	53.20/53.00	18.00/17.96	150	18 x 11
150 RC-WBH	85.04/85.01	76.00/75.80	22.00/21.95	215	22 x 14
200 RSC-WBH	85.04/85.01	76.00/75.80	22.00/21.95	215	22 x 14
200 SC-WBH	120.04/120.01	109.00/108.80	32.00/31.94	280	32 x 18
250 SC-WBH	120.04/120.01	109.00/108.80	32.00/31.94	280	32 x 18
300 TC-WBH	150.06/150.04	138.02/137.72	36.00/35.94	350	36 x 20

Warman® WBH® slurry pumps - quick selection guide

Approximate clear water performance - to be used for preliminary selection only.



L-R Paul Sharp and Matt Cosgrove from Sibelco Australia enjoy the many benefits of the WBH® slurry pump at the Tallawang mine site in NSW, Australia.

“The pump ran beautifully from Day One.”

Sibelco Australia takes pride in using innovative methods and sophisticated equipment in its work of processing and supplying raw materials for the Australian, New Zealand and Asian manufacturing and primary industries. Its Tallawang mine in central western NSW was therefore a natural choice for the world-first trial of Weir Minerals’ new Warman® WBH® centrifugal slurry pump.

The trial began in December 2009, with Weir Minerals staff helping with the installation. It was a trouble-free process, even with the need to make up a base plate for the WBH® pump to bring it to the same height as its predecessor, a Warman® AH® pump. “We’d allowed two days for the changeover but it was done in one day,” said maintenance supervisor, Matt Cosgrove. “And the pump ran beautifully from Day One with no dramas whatsoever.”

Since then, hopes for the performance of the WBH® pump have been realized.

“It runs cooler and uses less power, and we can adjust it on the run, which couldn’t be done with the previous pumps,” said Matt. “To adjust them we would have had to shut the plant down for several hours.”

With the pump wearing out in the expected time, Weir Minerals staff then performed a complete rebuild on-site in one day, serving the additional purpose of training mine staff to perform the task in the future.

“We had no hesitation in purchasing the pump at the end of the trial in December,” said Matt. “And while we’re very happy with it, we’re all still learning about it, so it’s good to know ongoing support and service is available from Weir Minerals whenever we need it.”



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