

**WEH**

**Minerals**

**WARMAN® Centrifugal  
Slurry Pumps**

**WBH® Pump Series**



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

## Key customer benefits

- Fully integrated Wear Reduction Technology (WRT®) provides unrivaled energy saving and extended wear life
- Save energy and reduce abrasive wear through simple throatbush adjustment
- Reduce downtime by adjusting the throatbush without stopping the pump
- Reduce maintenance time with instant pump alignment delivered through the revolutionary one-piece frame
- Safe seal guards that protect the operator during gland seal adjustments
- Leveraging the most advanced wear-resistant materials with options of Ultrachrome® and Hyperchrome® alloys, R55® rubbers and Linathane™ polyurethanes.
- Machine health and performance insights through Synertrex® digital technology

## Technology with a purpose

With your general slurry process pumping requirements front of mind, the Warman® WBH® slurry pump range offers more than 20 enhancements to the iconic Warman® AH® slurry pump, including a patented single-point throatbush adjustment feature to more evenly spread the wear and maintain the pump in tip-top performance for longer periods.

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

## Adjustable throatbush

A traditional 4-point push-pull axial throatbush adjustment feature is fitted as standard, or an upgrade may be configured to add the patented 'single-point adjustment' feature which combines rotation and axial adjustment in one simple operation. Axial adjustment maintains a minimum impeller gap to optimise wear rates and power consumption. Rotational adjustment extends component life further by smoothing any localised wear points.

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



Optional 'single-point adjustment' device to rotate and axially adjust the throatbush. Axial adjustment maintains a minimum impeller gap to optimise wear rates and power consumption. Rotational adjustment extends component life further by smoothing any localised wear points.



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

## Outstanding slurry management

With the patented Wear Reduction Technology (WRT®) integrated into the Warman® 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.

## Improved performance and service life

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

- Wear components leverage our latest Wear Reduction Technology (WRT®).
- Long-life bearings offer increased thrust load capacity whilst maintaining excellent radial load capacity
- Robust labyrinth-style end cover seals reliably protect the bearings
- Streamlined impeller and patented volute flow paths combine high efficiency and long life
- Encapsulated rubber liners offer longer life and prevent liner extrusion or blow-out
- Fully compatible with the Accumin™ automatic grease lubrication system
- Large unitised and rigid bearing frame minimise vibrations and distortions from external piping loads

- Frame options available for grease and oil lubrication
- Fully adjustable throatbush moves axially, as well as rotates (with single-point adjustment option), to distribute the wear evenly and extend the impeller and throatbush life
- Interchangeable metal and elastomer wear components in the one pump casing.

## Enhanced personnel safety

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

- High pressure rating and zero risk of projectiles from worn volutes encased in a pressure-containing outer casing
- Safe seal guards that do not need to be removed to adjust the gland seal, protecting fingers and hands from rotating parts
- Impeller release collar for safer low-torque impeller removal
- Leak detection as standard
- Optional pump health monitoring
- Optional pressure relief and thermal cut-out features
- Lifting lugs on all major components and lifting tools available to fit both new and worn wearing components
- Comprehensive assembly and disassembly procedures
- Safe three point lift for the bare shaft pump



Telescopic gland seal guards that further protect maintenance personnel performing gland seal adjustments.

New one-piece rigid WBH® bearing frame design for improved radial alignment of bearings, seal and impeller, and minimised vibration and distortion. Less part count. More robust.

## Sustainability

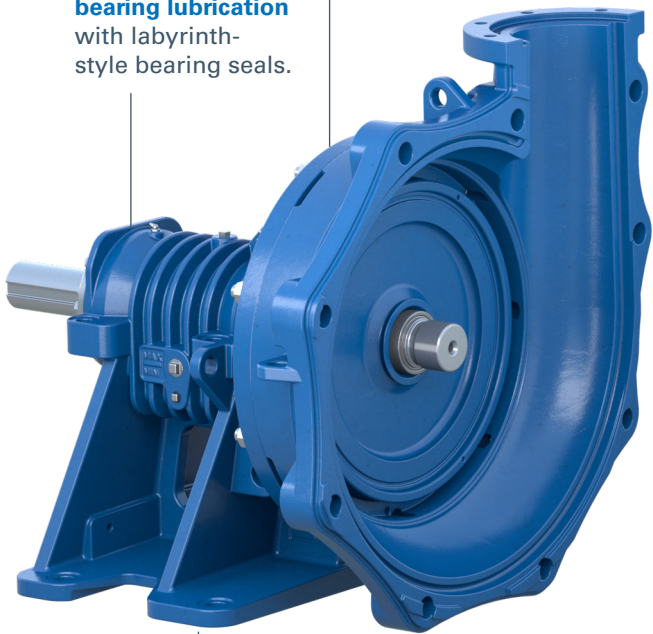
The WBH® pump is a high efficiency machine and boasts a broader efficiency curve than competitor pumps.

Its large diameter Warman Hi-Seal™ expeller also reduces water consumption in high suction pressure applications

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

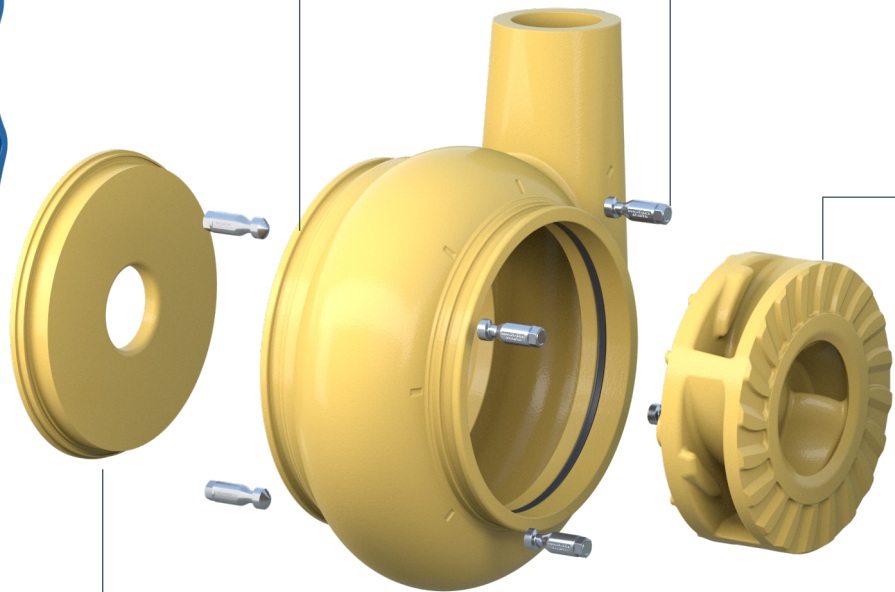
**Multiple seals available:** gland seal, mechanical seal or Hi-Seal™ centrifugal seal available.

**Grease or oil bearing lubrication** with labyrinth-style bearing seals.



**Full liner material thickness can be utilised** before replacement is required due to safe encapsulation within ductile iron outer casing.

**Patented twist-locks** safely secure liners into casing. No troublesome studs and threads.



**Interchangeable metal liners and impeller**

**One piece bearing frame** for better alignment of bearings, seal and impeller to front liner. Less part count, more robust.

**Interchangeable elastomer liners and impeller**



**Patented WRT®**  
throatbush/impeller  
combination reduces  
wear rates and  
improves efficiency

### **Ease of maintenance and longer maintenance intervals**

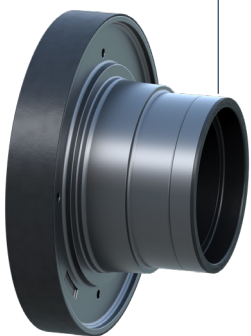
At Weir Minerals we understand the importance of easy and predictable maintenance, and so the Warman® WBH® pump range is designed with these thoughts in mind.

- Patented alignment features throughout ensure ease of maintenance and excellent balancing from the drive coupling to the throatbush
- Seal chamber is precisely aligned with the shaft



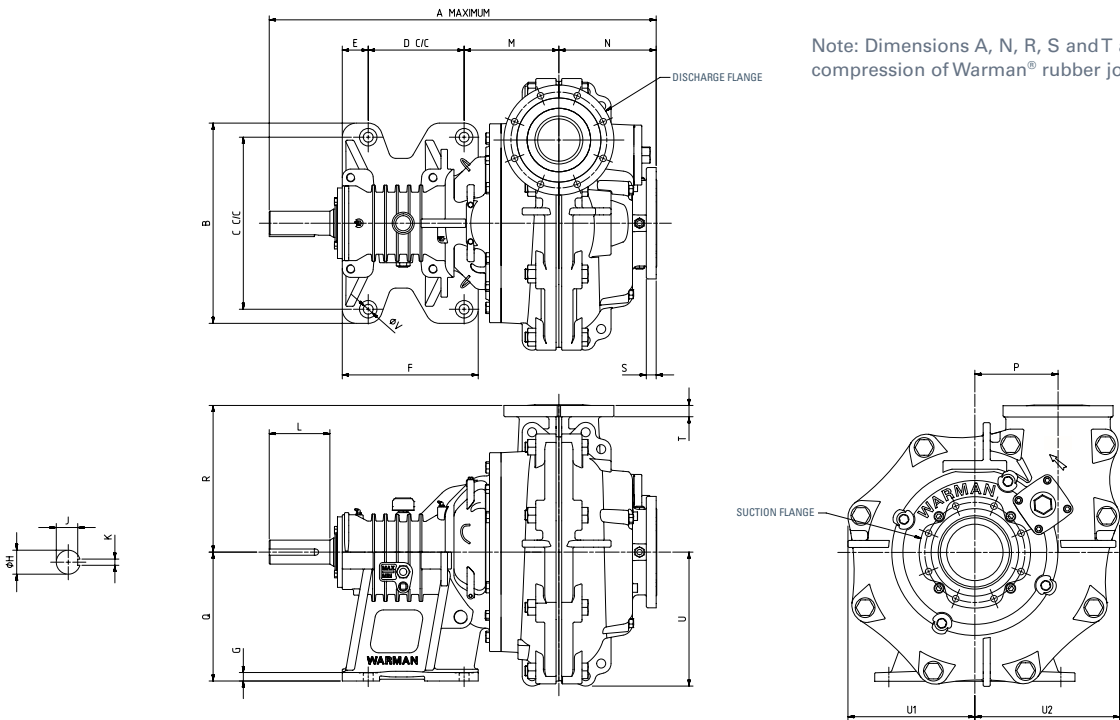
**Single-point  
throatbush adjustment**  
can be carried out with  
pump running. Unique  
axial and rotational  
movement minimises  
front impeller gap  
and localised erosion  
to reduce wear and  
maintain performance.

- External ribs on the frame assist heat transfer 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
- Single-point adjustable throatbush for manual or automated throatbush adjustment while the pump is running
- 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 patented twist-lock liner fixing method reduces assembly time — no fine threads that could become blocked and require re-tapping
- Patented self-aligning pump casing halves prevent pinching and damaging of elastomer liners during assembly
- Nonmetallic split lantern ring for ease of removal and replacement without dismantling the pump
- Optimised component count to reduce maintenance time and increase reliability
- Throatbush adjustment allows the impeller-throatbush gap to be minimised at all times; during assembly, maintenance or operation



## 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 assume full compression of Warman® rubber joint.

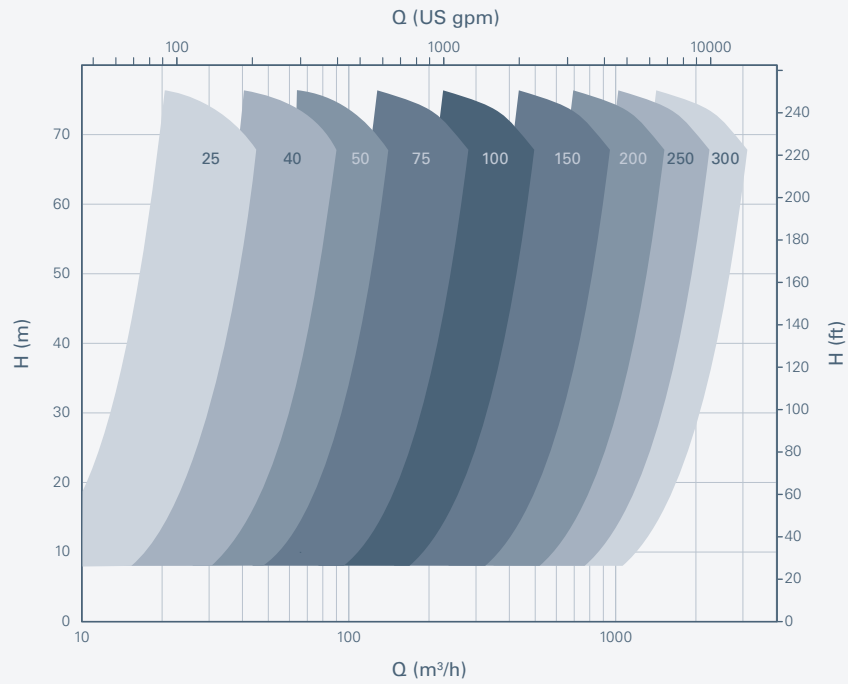
| Pump Size | Base Dimensions (mm) |      |     |     |     |     |    | Discharge Flange (mm) |              |          |       | Intake Flange (mm) |              |          |       |
|-----------|----------------------|------|-----|-----|-----|-----|----|-----------------------|--------------|----------|-------|--------------------|--------------|----------|-------|
|           | 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     | 661                  | 270  | 220 | 180 | 25  | 230 | 18 | 165                   | 4            | 18       | 127   | 185                | 4            | 18       | 146   |
| 40 MC     | 672                  | 270  | 220 | 180 | 25  | 230 | 18 | 185                   | 4            | 18       | 146   | 205                | 4            | 18       | 165   |
| 50 NC     | 772                  | 330  | 280 | 230 | 25  | 280 | 20 | 220                   | 4            | 18       | 178   | 220                | 4            | 18       | 178   |
| 75 NPC    | 832                  | 330  | 280 | 230 | 25  | 280 | 20 | 280                   | 8            | 18       | 235   | 280                | 8            | 18       | 235   |
| 75 PC     | 890                  | 430  | 370 | 230 | 55  | 315 | 20 | 280                   | 8            | 18       | 235   | 280                | 8            | 18       | 235   |
| 100 PQC   | 956                  | 406  | 356 | 175 | 55  | 269 | 20 | 305                   | 4            | 23       | 260   | 325                | 8            | 23       | 280   |
| 100 QC    | 1108                 | 540  | 470 | 300 | 65  | 400 | 25 | 305                   | 4            | 23       | 260   | 325                | 8            | 23       | 280   |
| 150 QRC   | 1202                 | 502  | 432 | 213 | 49  | 297 | 25 | 390                   | 8            | 23       | 340   | 395                | 8            | 23       | 355   |
| 150 RC    | 1372                 | 710  | 610 | 340 | 92  | 482 | 30 | 390                   | 8            | 23       | 340   | 395                | 8            | 23       | 355   |
| 200 RSC   | 1499                 | 638  | 546 | 257 | 85  | 388 | 30 | 490                   | 8            | 27       | 440   | 525                | 8            | 33       | 470   |
| 200 SC    | 1766                 | 1000 | 850 | 460 | 135 | 670 | 40 | 490                   | 8            | 27       | 440   | 525                | 8            | 33       | 470   |
| 250 SC    | 1836                 | 1000 | 850 | 460 | 135 | 670 | 40 | 550                   | 12           | 23       | 495   | 610                | 12           | 27       | 550   |
| 300 TC    | 2356                 | 1120 | 960 | 640 | 185 | 905 | 45 | 660                   | 12           | 33       | 580   | 690                | 12           | 33       | 615   |

| Pump Size | Pump Head Dimensions (mm) |     |     |     |     |    |    |     |     |     | ØV (mm) | Mass Metal Lined (kg) | Mass Rubber Lined (kg) |
|-----------|---------------------------|-----|-----|-----|-----|----|----|-----|-----|-----|---------|-----------------------|------------------------|
|           | M                         | N   | P   | Q   | R   | S  | T  | U   | U1  | U2  |         |                       |                        |
| 25 MC     | 185                       | 147 | 100 | 185 | 205 | 19 | 19 | 172 | 272 | 182 | 18      | 120                   | 105                    |
| 40 MC     | 188                       | 155 | 110 | 185 | 235 | 19 | 19 | 197 | 197 | 202 | 18      | 144                   | 118                    |
| 50 NC     | 202                       | 190 | 120 | 197 | 266 | 22 | 20 | 270 | 265 | 280 | 18      | 224                   | 198                    |
| 75 NPC    | 222                       | 230 | 160 | 197 | 330 | 24 | 24 | 340 | 335 | 350 | 18      | 399                   | 336                    |
| 75 PC     | 228                       | 230 | 160 | 251 | 330 | 24 | 24 | 340 | 335 | 350 | 19      | 437                   | 384                    |
| 100 PQC   | 304                       | 275 | 205 | 255 | 400 | 28 | 30 | 385 | 395 | 435 | 23      | 690                   | 522                    |
| 100 QC    | 272                       | 275 | 205 | 300 | 400 | 28 | 30 | 385 | 395 | 435 | 23      | 777                   | 626                    |
| 150 QRC   | 398                       | 345 | 295 | 330 | 520 | 35 | 40 | 475 | 450 | 513 | 33      | 1482                  | 1174                   |
| 150 RC    | 336                       | 345 | 295 | 457 | 520 | 35 | 40 | 475 | 450 | 513 | 33      | 1673                  | 1312                   |
| 200 RSC   | 478                       | 420 | 355 | 457 | 650 | 36 | 42 | 670 | 590 | 715 | 45      | 2839                  | 2212                   |
| 200 SC    | 428                       | 420 | 355 | 610 | 650 | 36 | 42 | 670 | 590 | 715 | 45      | 3377                  | 2861                   |
| 250 SC    | 442                       | 476 | 425 | 610 | 715 | 43 | 50 | 750 | 735 | 810 | 45      | 4514                  | 3611                   |
| 300 TC    | 554                       | 555 | 485 | 610 | 835 | 45 | 50 | 850 | 830 | 925 | 51      | 7241                  | 5717                   |

| Pump Size | Drive End Shaft Dimensions (mm) |               |             |     |         |
|-----------|---------------------------------|---------------|-------------|-----|---------|
|           | ØH                              | J             | K           | L   | KEY     |
| 25 MC     | 32.03/32.01                     | 27.00/26.80   | 10.00/9.96  | 95  | 10 x 8  |
| 40 MC     | 32.03/32.01                     | 27.00/26.80   | 10.00/9.96  | 95  | 10 x 8  |
| 50 NC     | 35.03/35.01                     | 30.00/29.80   | 10.00/9.96  | 100 | 10 x 8  |
| 75 NPC    | 35.03/35.01                     | 30.00/29.80   | 10.00/9.96  | 100 | 10 x 8  |
| 75 PC     | 45.02/45.01                     | 39.50/39.30   | 14.00/13.96 | 115 | 14 x 9  |
| 100 PQC   | 45.02/45.01                     | 39.50/39.30   | 14.00/13.96 | 115 | 14 x 9  |
| 100 QC    | 60.03/60.01                     | 53.20/53.00   | 18.00/17.96 | 150 | 18 x 11 |
| 150 QRC   | 60.03/60.01                     | 53.20/53.00   | 18.00/17.96 | 150 | 18 x 11 |
| 150 RC    | 85.04/85.01                     | 76.00/75.80   | 22.00/21.95 | 215 | 22 x 14 |
| 200 RSC   | 85.04/85.01                     | 76.00/75.80   | 22.00/21.95 | 215 | 22 x 14 |
| 200 SC    | 120.04/120.01                   | 109.00/108.80 | 32.00/31.94 | 280 | 32 x 18 |
| 250 SC    | 120.04/120.01                   | 109.00/108.80 | 32.00/31.94 | 280 | 32 x 18 |
| 300 TC    | 150.04/150.02                   | 138.00/137.70 | 36.00/35.94 | 345 | 36 x 20 |

## Warman® WBH® slurry pumps - quick selection guide

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



The Warman WBH® pump fitted with Accumin™ automatic grease lubricators





## Minerals

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