

# AMTAS PTY LTD

Mineral Processing & Materials Handling Equipment

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Tel: (618) 9410 2300  
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## RUSSELL JIG



### FEATURES

- Internal Diaphragm, high displacement ratio
- Fully adjustable, variable speed drive unit
- Simple, robust design, easy maintenance

Shown: Model J2/70

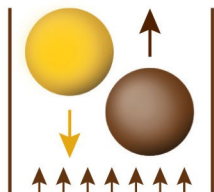


**The Russell Jig** has been designed, developed and tested over many years with proven efficiency, reliability and ease of maintenance. The Jigs are available in two styles, namely 2 cell and 4 cell. The two cells are side by side, with the 4 cells being two side by side and two cells long. The 4 cell Jigs are primarily used for recovery of fine product or where a large percentage of the product is likely to collect on top of the screens

### LABORATORY JIG LJ-2

#### FEATURES

- Variable speed DC drive unit
- Variable stroke
- Quick release hutch box top with fixed screen arrangement



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## RUSSELL JIG

P-2

### Internally Mounted Diaphragm

This is a major innovation designed to increase the displacement ratio of the Jig, i.e. the surface area of the diaphragm divided by the screen area of one cell. The diaphragm, mounted vertically between two half width cells, in a centre baffle plate, allows for a larger diaphragm than can be mounted externally. This ratio is up to three times higher than any other Jig currently available. The advantage of this is that fluidisation of the bed on the screens is much more easily achieved, which in turn results in better fines recovery and efficiency.

### Fully Adjustable Controls

The diaphragm is driven by a gear reducer and electric motor with optional variable frequency drive or mechanical belt variator.

The frequency (strokes per minute) for the range of models up to and including the J2/28 is from approx. 50 – 300. The larger models have a range of 50 – 200. Stroke length is infinitely adjustable within a given range for each model. Hutch make-up water is independently controllable to each cell. These controls allow the Jig to be tuned to optimum efficiency for varying feed conditions as well as significantly reducing water consumption.

### High Performance Screen and Ragging

For some applications, (particularly gold recovery) the Jigs are fitted with specially matched stainless steel screens and spherical ragging balls. The balls are matched precisely to the screen aperture. This creates a dense bed, which prevents blinding of the screens, thus eliminating the need to "rake" the screen beds, a common activity with most Jigs.

Another bonus created by such a dense bed is that the volume and particle size of the concentrate is greatly reduced, with resultant savings in the secondary concentration equipment. Other types of Jigs cannot use dense beds of this nature as a high displacement ratio (not found in any other Jig) is required to fluidise the bed.

### High Gold Recovery

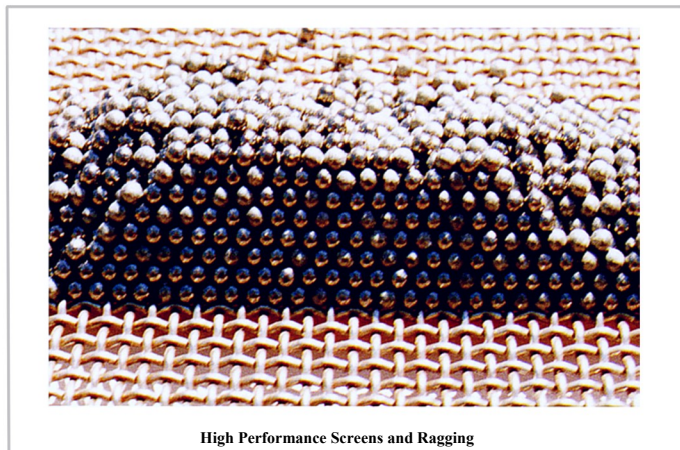
The combination of design features results in exceptional recovery of fine gold (and other heavy minerals). Independent test work has been conducted by a number of companies including the joint venture between Jason Mining, Pelsart International and the Yunawati Perdana Group in Indonesia. A Model J3 achieved 96.9% recovery of gold down to 50 microns in a single pass under field conditions. Most Jig manufacturers can only claim good gold recoveries down to about 100 microns.



Shown Model J2/10  
Optional equipment fitted:-  
Flanged discharge and hutch water manifold

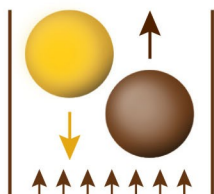


Shown Model J8  
Optional equipment fitted:-  
Gravity feed distributor



High Performance Screens and Ragging





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## RUSSELL JIG

P-3

### SECONDARY JIG MODEL J8 PRIMARY JIG MODEL J24

- Feed distributor
- Screen baskets with ceramic lagging for Diamond recovery
- Pressure distributor
- Feed distributor
- Screen baskets for diamonds and gold nuggets

### Secondary, tertiary Concentration

Russell Jigs can be used as either primary, secondary or tertiary concentration devices. When used as a secondary or tertiary Jig, the throughput rate should be reduced to approximately 1/3 to 1/2 for a secondary and 1/4 to 1/3 for a tertiary, of the primary rated capacity. This will ensure maximum recovery and minimum concentrate volume.

Russell Jigs used for this application use different stroke lengths to primary Jigs, with the Models J3 to J14 and J2/6 to J2/28 using a different main drive shaft.

### Notes

Tonnage throughput varies with ground conditions. Rates quoted are those achievable under average operating conditions and should not be considered accurate for all conditions.

Overall Jig dimensions exclude accessories and are shown in millimetres.

Specifications subject to change without notice.



### BSP-10 Alluvial Bulk Sample Plant

Winner of an Australian BHP Steel Award for excellence in design and innovation, Primary Industry Category, Incorporating the Model J3 Russell Jig



Model No.	No. of cells	Nominal Tonnes/Hour	Power Kw	Screen Dimensions (L x W)	No. of Screens	Overall Dimensions (mm) (L x W x H)
LJ2	2	1	0.18	320 x 320	1	500 x 466 x 710
J3	2	10	0.75	620 x 270	2	980 x 765 x 1170
J5	2	15	1.10	800 x 340	2	980 x 930 x 1170
J8	2	25	1.10	950 x 420	2	1310 x 1140 x 1420
J14	2	35	1.50	1220 x 550	2	1780 x 1580 x 2030
J24	2	45	2.20	1600 x 815	2	2185 x 2062 x 2265
J2/6	4	10	0.75	1240 x 270	2	1610 x 930 x 1170
J2/10	4	15	1.10	1600 x 340	2	2120 x 1140 x 1420
J2/16	4	25	1.50	1950 x 420	2	2460 x 1310 x 1750
J2/28	4	35	2.20	2440 x 550	2	3010 x 1580 x 2030
J2/54	4	50	3.0	1450 x 800 1450 x 1000	2 2	3600 x 2560 x 2470
J2/64	4	60	4.0	1450 x 1000 1450 x 1200	2 2	3644 x 2962 x 2845
J2/70	4	65	4.0	1450 x 1200	4	3644 x 2962 x 2845