



## Ultimate Hydraulic/Mechanical Drilling Jar

The Ultimate Hydraulic/Mechanical Drilling Jar (UHMJ) is a double acting jar, designed to deliver hydraulic delay when jarring in the up direction, and mechanical release when jarring in the down direction.

Using proprietary new technology, Wenzel Downhole Tools has been able to dramatically increase the allowable overpull force. The UHMJ incorporates a latch mechanism to keep the jar locked in the neutral position and eliminate unexpected jarring while tripping or racking on the derrick.

### Features and Benefits

- ▶ The UHMJ is normally operated in the latched position to reduce unexpected jarring while drilling and eliminate movement between jar components, increasing service life.
- ▶ The UHMJ operates with a simple up and down motion and is not affected by torque.
- ▶ The spline drive and latch mechanism are enclosed in a single, sealed oil chamber without ports to the annulus. Such ports on other jars may fill with cuttings and restrict the down jar stroke.
- ▶ The hydraulic delay mechanism is located in a separate chamber to prevent contamination and increase reliability.
- ▶ With the latch mechanism in the latched position, the inner mandrel and outer housing act integrally, virtually eliminating seal and inner tool wear during normal drilling conditions. There is no need to extend or open the jar before running in the hole.
- ▶ Standard seals in the tool are effective to 250°F (120°C). The UHMJ can be dressed with seals effective to 400°F (200°C) for hot hole environments. External sealing surfaces are tungsten carbide-coated to enhance wear and corrosion resistance.
- ▶ The UHMJ can be run in tension or in compression within the preset latch settings.

## Operation

### Jarring Up

- Jarring up is achieved by applying sufficient overpull to overcome the latch setting, which initiates the hydraulic time delay. During the time delay, the overpull at surface can be adjusted to vary the impact force.
- After impact, apply a down force sufficient to close jar and re-engage latch, then repeat the jarring cycle as required.

### Jarring Down

- Jarring down is achieved by applying sufficient downward force to overcome the latch setting and pump open force. At that point, the UHMJ will release and jar downward.
- After impact, pick up the work string to re-engage the mechanical latch then repeat the jarring cycle as required.

### Ultimate Hydraulic / Mechanical Drilling Jar (High Overpull) Specifications

#### IMPERIAL

Nominal OD	Length	Thru Bore	Tensile Yield	Torsional Limit	Nominal Up Latch Setting	Nominal Down Latch Setting	Max Pull During Delay	Free Stroke Up	Free Stroke Down
(inch)	(feet)	(inch)	(lbs)	(ft lbs)	(lbs)	(lbs)	(lbs)	(inch)	(inch)
4.13	18.9	2.00	280 000	15 000	45 000	25 000	110 000	5.0	6.0
4.75	19.6	2.25	391 000	20 000	55 000	30 000	132 000	5.0	6.0
5.25	19.6	2.25	391 000	31 500	55 000	30 000	132 000	5.0	6.0
6.25	20.5	2.25	777 000	48 500	90 000	40 000	250 000	5.0	6.0
6.50	20.5	2.25	777 000	52 400	90 000	40 000	250 000	5.0	6.0
6.62	20.6	2.75	722 500	53 800	90 000	40 000	250 000	5.0	6.0
6.75	20.5	2.75	907 500	48 800	95 000	42 000	270 000	5.0	6.0
8.00	20.7	2.81	949 000	98 000	100 000	45 000	400 000	5.5	6.0
10.00	21.9	3.00	1 658 500	182 200	110 000	50 000	580 000	5.5	6.0

#### METRIC

Nominal OD	Length	Thru Bore	Tensile Yield	Torsional Limit	Nominal Up Latch Setting	Nominal Down Latch Setting	Max Pull During Delay	Free Stroke Up	Free Stroke Down
(mm)	(m)	(mm)	(daN)	(N·m)	(daN)	(daN)	(daN)	(mm)	(mm)
105	5.8	51	124 500	20 300	20 000	11 100	48 900	130	150
121	6.0	57	173 900	27 100	24 500	13 300	58 700	130	150
133	6.0	57	173 900	42 700	24 500	13 300	58 700	130	150
159	6.3	57	345 600	65 800	40 000	17 800	111 200	130	150
165	6.3	57	345 600	71 000	40 000	17 800	111 200	130	150
168	6.3	70	321 400	72 900	40 000	17 800	111 200	130	150
171	6.2	70	403 700	66 200	42 300	18 700	120 100	130	150
203	6.3	71	422 100	132 900	44 500	20 000	177 900	140	150
254	6.7	76	737 700	247 000	48 900	22 200	258 000	140	150

Specifications are based on as new condition and are subject to change without notice.