



## HYDRANUT *description*

*The HydraNut is a precision engineered, high pressure, high performance, hydraulically operated bolt tensioning device that can be quickly and easily fitted and used with standard pumping equipment (e.g. hand operated pressure pumps).*

*It is manufactured in a choice of steel or stainless steel of tensile strength to suit the required application.*

## HYDRANUT *applications*

The HydraNut is suitable for use where:

- Accurate and reliable loading is required on bolting
- Vibrational or torsional stresses are a problem
- Regular maintenance requires repeated adjustment or removal of nuts
- There are confined and difficult nut locations

Typical HydraNut applications are found in many industries, including:

- Mining and quarrying
- Oil drilling
- Marine
- Power generation
- Agricultural
- Structural
- Heavy equipment in general industry

## HYDRANUT *features*

The patented design of the HydraNut has given it improved technical efficiency of operation and cost/benefit advantages over other tensioning devices.

The HydraNut provides the following advantages:

- Reduces maintenance down time
- Improves safety on the job
- Gives reliable and precise tensioning
- Is user-friendly – fast to fit and remove
- Requires little physical effort
- Is ideal for confined spaces or difficult locations

# HYDRANUT<sup>®</sup> operation

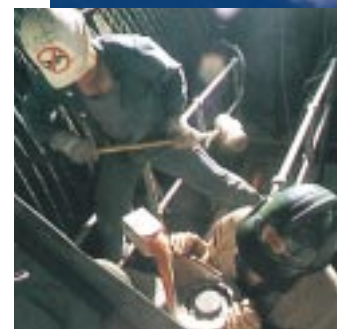
The HydraNut assembly is screwed by hand onto the bolt until the base is tight against the working face. It is then nipped tighter with a "C" wrench.

Hydraulic pressure is then applied by a pressure gun through the nipple fitting on top of the nut body into the sealed chamber, forcing the piston and the nut body apart, thus stretching and tensioning the bolt through the joint.

The threaded locking, mounted on the piston, is then screwed back and hand tightened to retain the induced load tension in the bolt. The pressure is then simply released and the pressure gun removed from the nipple fitting, to complete the operation.

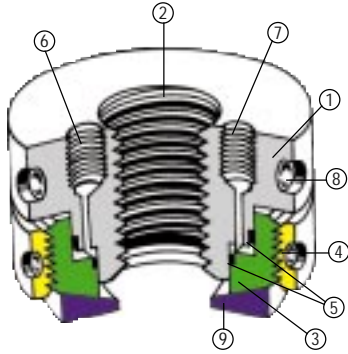
To remove the HydraNut, pressure is reapplied through the nipple fitting to unload the locking. The internal pressure is then relieved and the HydraNut can be removed easily.

No major physical force, large wrenches or torque tools are required to correctly fit and remove the HydraNut.



No more sledge hammers.

## HYDRANUT<sup>®</sup> components



HydraNut with hydraulic pressure applied showing extended piston.

1. Nut body, which screws onto the bolt thread.
2. Screw thread in bore of nut body, made to suit individual bolts.
3. Piston, with outside buttressed screw thread to accept locking ring.
4. Lockring, to retain the load when hydraulic pressure is released.
5. High pressure seals.
6. Pressure release porting.
7. High pressure inlet for nipple connection.
8. Holes for insertion of "C" spanner to nip tight nut body and locking ring.
9. Spherical washer designed to self-correct seating and bolt misalignments.

Australian and International Patents Pending Australian Patent No. 25403/88 USA Patent No. 07/478009 International PCT/AU88/00381 and others applied for.

## HYDRANUT<sup>®</sup> technical specifications

- HydraNuts are made in any size. Common sizes range from M20 to M150 (6 inches).
- Nuts for restricted space locations and higher load applications are also available.
- HydraNuts are supplied with spherical washers as standard. Orders not requiring the spherical base and washer must specify same.
- HydraNuts are typically made of Medium Tensile Steel and in other grades and Stainless Steel, to suit the application.
- HydraNuts typically develop 65% of the bolt proof load at standard operating pressures (around 10,000 psi/70MPa for mild steel).
- HydraNuts can also be supplied for special load requirements.
- Standard hydraulic fittings are supplied with each HydraNut (pressurising port is 1/8" N.P.T to suit).

HYDRANUT STANDARD STROKE RANGE - HIGH TENSILE GRADE*							
Bolt Thread Size (mm)	(inches)	Force @ 100mpa	Nut Diam (mm)	Nut Height (mm)	Piston Stroke (mm)	Washer Diam (mm)	Nut Weight (kg)
M20	7/8"	99	68	46	5	48	1.1
		124	68	46	5	56	1.1
M24	1"	161	78	54	5	58	1.7
	1 1/8"	161	78	54	5	64	1.6
M30		183	82	56	5	68	1.8
	1 1/4"	249	88	56	5	68	2.1
		228	88	58	5	68	2.2
M36		357	104	62	5	84	3.6
	1 1/2"	333	104	62	5	84	3.2
	1 5/8"	392	114	74	5	98	4.6
M42		484	118	74	5	98	5.0
	1 3/4"	456	118	74	5	98	4.9
M48		629	134	84	8	98	7.3
	2"	599	134	82	5	98	7.0
M56		821	150	88	8	126	9.5
	2 1/4"	760	144	88	8	118	8.5
	2 1/2"	941	165	90	8	136	11.6
M64		1108	165	92	8	136	11.8
	2 3/4"	1214	185	96	8	156	15.6
M72		1402	185	96	8	156	15.5
	3"	1439	215	114	8	156	25.6
M80		1730	215	114	8	186	25.2

\* Maximum Pressure 100MPa, 1000 Bar, 14 500 Psi.  
Metric available in coarse & fine pitch. Imperial available in UNC, UNF, WHIT & as specified.  
Also available in long stroke models or to your specifications.

HYDRANUT STANDARD STROKE RANGE - COMMERCIAL GRADE*							
Bolt Thread Size (mm)	(inches)	Force @ 100mpa	Nut Diam (mm)	Nut Height (mm)	Piston Stroke (mm)	Washer Diam (mm)	Nut Weight (kg)
M20	7/8"	38	62	46	5	48	0.9
		58	62	46	5	48	0.9
M24	1"	58	68	52	5	48	1.2
	1 1/8"	75	68	52	5	56	1.2
M30		86	78	54	5	58	1.6
	1 1/4"	86	78	54	5	58	1.6
M36		113	82	56	5	68	1.8
	1 1/2"	144	88	56	5	68	2.0
	1 1/2"	151	98	64	5	78	2.9
M42		177	98	68	5	84	3.0
	1 5/8"	186	104	64	5	84	3.2
M48		224	108	68	5	86	3.7
	1 3/4"	266	118	74	5	98	4.8
M48		277	118	74	5	98	4.7
M56		821	130	74	5	98	5.7
	2 1/4"	372	134	78	5	98	6.4
	2 1/2"	440	144	88	8	118	8.2
M64		481	150	84	8	118	8.6
	2 3/4"	512	155	88	8	128	9.3
M72		557	155	92	8	128	9.6
	3"	638	165	94	8	136	11.2
M80		790	165	94	8	136	10.9

\* Maximum Pressure 70MPa, 700 Bar.

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