



A New Generation in Fasteners



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Technofast Industries Pty Ltd

Technofast has been manufacturing hydraulic fastening devices and performing general engineering services for industry since 1992.

The principal activity of Technofast Industries Pty Ltd is the manufacture of high pressure hydraulically operated bolt-tensioning devices that can be quickly and easily fitted and used with standard hydraulic pumps and equipment. Technofast is also structured to provide general engineering services to a wide variety of customers ranging from automotive parts to drive components.

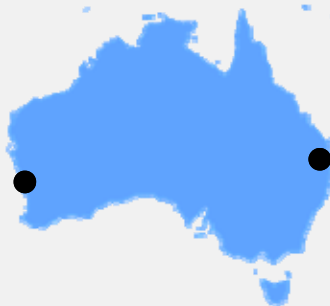


Technofast is proudly Australian Owned and Operated with the Head Office located in Brisbane, QLD.

All design, manufacture, assembly & testing is conducted on site in Brisbane.

Technofast has stringent QA procedures in place and is accredited with the ISO:9001 certification.

Technofast Services Pty Ltd operates out of WA. Specialising in on-site service work & developing business in Western Australia



Technofast Industries Pty Ltd operates out of QLD. Designing, Manufacturing, Assembling & Testing of all Bolt Tensioning Equipment.

All Sales are handled by our Worldwide Agents network.



Technofast's patented designs are:

- Computer generated in 3D to ensure design integrity.
- All parts are then manufactured, assembled to form the complete tool and tested to full working pressure, then a product certificate is created
- The finished goods are then packaged and despatched.



Technofast can design the solution to your bolting challenges





What is Bolt Tensioning?

For the past 50 years Hydraulic Bolt Tensioning has been the accepted engineering practice to achieve highly accurate loads in many types of bolted joints. Using CAD technology we are able to provide the highest standard of calculated bolt loading and therefore prevent many of the losses and dangers associated with other methods of tensioning fasteners.

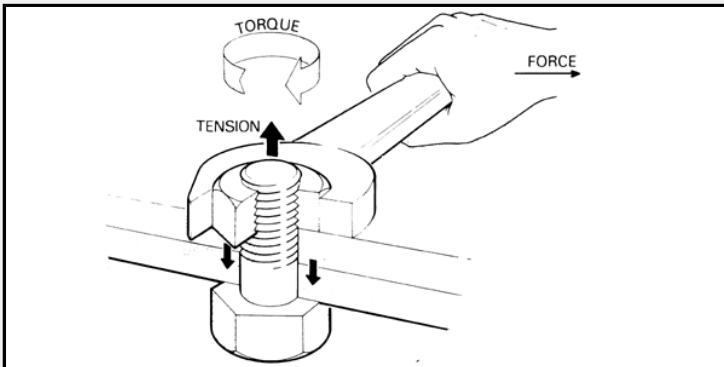
One of mans earliest tools was the lever, which when used in conjunction with an inclined plane allows us to apply a load. The combined mechanical advantages of these two machines enables us when using a nut and bolt to force the nut to climb the helix angle of the bolt which when it reacts against the joint to be clamped will transfer load to the bolt and keep the joint together.

This is the basis of applying a TORQUE to a fastener and if every thing goes well there will be sufficient load provided to overcome all the external forces acting on the joint, friction, thread galling, axial load on the bolt etc. and the joint will remain intact.

The application of hydraulic 'straight line' tensioning has allowed designers to specify exact bolt loads without having to rely on the inherent hit or miss Inclined Plane & Lever (Torque) methods which had been used previously.

Designed bolt loads are easily achieved by applying a predetermined hydraulic force to a calculated surface area confined in what can loosely described as a 'Load Cell'. This load is transferred to the bolt which will stretch along its axis and the resulting load will be directly proportional to the hydraulic pressure applied and therefore known.

As a result of the bolt stretching under the hydraulic load and dependent on the type of joint, a gap will appear under either the hex nut or the locking ring dependent on the type of tensioner used, which will be turned down un-hindered by either load or friction. As the hydraulic load is released the hex nut or locking ring will maintain the applied load.



Why Tension?

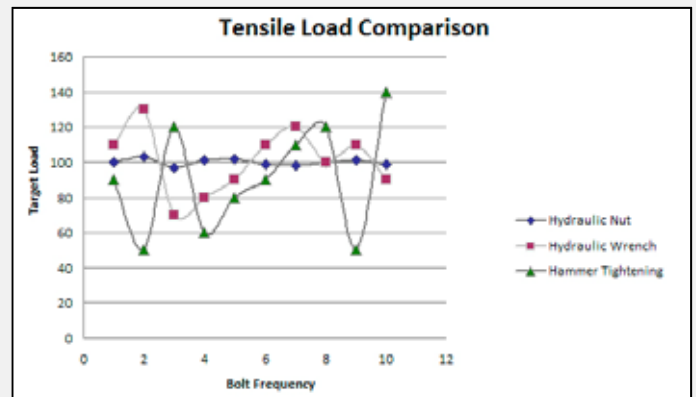
- Safe
- Accurate
- Calculated
- Fast
- Versatile
- Reliable
- User Friendly

The Accuracy of the methods:

Technofast is an award winning innovative company, specialising in Bolt Tensioning products.

Unlike other manufacturers, Technofast will modify or re-configure their designs to suit the application, meaning that the end-user gets a product designed specifically for the job required.

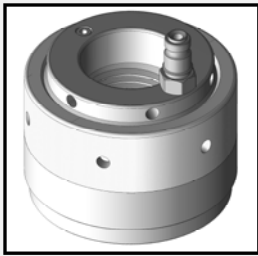
This is why Technofast is a worldwide leader in the Industry.



Why is Precise Bolt Tensioning Necessary?
Tensioning = Accurate Bolt Load

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EziTite® Hydraulic Nut

The EziTite® Hydraulic Nut is a precision engineered, high pressure, high performance, hydraulically operated bolt tensioning device that can be quickly and easily fitted and used with Technofast pumping equipment (eg. Hand Pumps, Electric / Hydraulic or Air / Hydraulic).

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



Features:

The patented design of the EziTite® has given it improved technical efficiency of operation and cost/benefit advantages over other tensioning devices. The EziTite® provides advantages such as:

- 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.

Currently used in:

- Mines
- Quarries
- Steel Mills
- Steel Recyclers
- Manufacturing Plants
- Power Stations
- Desalination Plants
- Wind Farms
- Construction / Heavy Industry

Applications (examples):

- Dragline: Pivot Motors, Pedestal Housing, Drag Motors, Hoist Motors
- Wash Plants: Vibrating Screens
- Quarries: Crusher Shells & Jaws
- Steel Mills & Recyclers: Shredders
- Shovels: Side Frame Bolts, Motor Mounts, Boom Sheave Pedestals
- Heavy Industry: Flanges

Suitable for:

The EziTite® is suitable for use where:

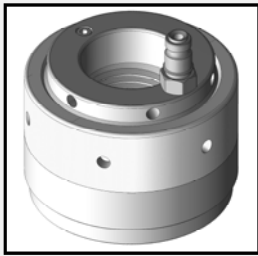
- Accurate and reliable loading is required on bolting.
- Vibrational or torsional stresses are a problem.
- Regular maintenance requires repeated adjustment or removal of nuts.
- There are confined and difficult nut locations.

Operation

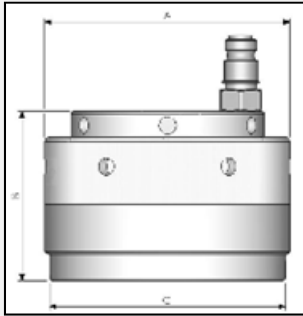
The EziTite® assembly is screwed by hand onto the bolt (replacing the original nut) until the base is tight against the working face. Hydraulic pressure is then applied through the nipple fitting on top of the nut body into the sealed chamber, forcing the piston and the nut body apart, thus stretching and tensioning the bolt through the joint.

The threaded lockring, mounted on the nut body, is then screwed against the abutting face to retain the induced load in the bolt. The pressure is then simply released and the hydraulic coupling removed from the nipple fitting, to complete the operation.

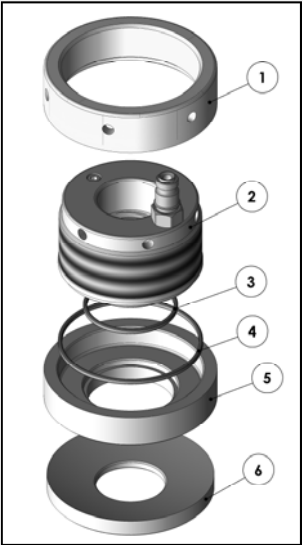




EziTite[®] Hydraulic Nut Specifications



Model Part No.	Thread Size	Force produced (kN)	(A) Nut OD	(B) Height short	(B) Height long	Short Stroke (mm)	Long Stroke (mm)	(C) Washer
EZI-CM24X3	M24	57	Ø58	61	73	6	12	Ø52
EZI-CI100U	1	64	Ø58	61	73	6	12	Ø52
EZI-CI102U	1.125	80	Ø64	63.5	75.8	6	12	Ø58
EZI-CM30X35	M30	86	Ø68	66.2	78.2	6	12	Ø62
EZI-CI104U	1.25	106	Ø72	65.5	77.5	6	12	Ø68
EZI-CI106U	1.375	119	Ø78	68	80	6	12	Ø74
EZI-CM36X4	M36	135	Ø78	68	80	6	12	Ø74
EZI-CI108U	1.5	143	Ø82	69.7	81	6	12	Ø78
EZI-CI110U	1.625	177	Ø88	72.5	84.5	6	12	Ø82
EZI-CM42X45	M42	177	Ø88	72.5	84.5	6	12	Ø82
EZI-CI112U	1.75	186	Ø94	79.2	102.2	8	20	Ø86
EZI-CM48X5	M48	234	Ø104	80.2	103.2	8	20	Ø98
EZI-CI200U	2	245	Ø108	86.9	108.9	8	20	Ø102
EZI-CM56X55	M56	335	Ø122	90.6	112.6	8	20	Ø116
EZI-CI204U	2.25	335	Ø122	90.6	112.6	8	20	Ø116
EZI-CI208U	2.5	439	Ø136	96.1	116.1	8	20	Ø132
EZI-CM64X6	M64	439	Ø136	96.1	116.1	8	20	Ø132
EZI-CI212U	2.75	527	Ø150	105	122.9	8	20	Ø146
EZI-CM72X6	M72	527	Ø150	105	122.9	8	20	Ø146
EZI-CI300U	3	638	Ø160	107	124	8	20	Ø156
EZI-CM80X6	M80	706	Ø170	108.5	125.5	8	20	Ø162



Long Stroke part numbers have an 'L' at the end of the part number. Eg: EZI-CI112UL

Model Part No.	Thread Size	Force produced (kN)	Nut OD (mm)	Height short stoke (mm)	Height long stoke (mm)	Short Stroke (mm)	Long Stroke (mm)	Washer Dia
EZI-HM24X3	M24	160	Ø70	59.9	72	6	12	Ø66
EZI-HI100U	1	160	Ø70	59.9	72	6	12	Ø66
EZI-HI102U	1.125	171.9	Ø74	62.3	74.3	6	12	Ø68
EZI-HM30X35	M30	249.3	Ø84	65	77	6	12	Ø80
EZI-HI104U	1.25	249.3	Ø84	65	77	6	12	Ø80
EZI-HI106U	1.375	277.9	Ø92	68.3	80.3	6	12	Ø88
EZI-HM36X4	M36	357	Ø100	69.6	80.6	6	12	Ø96
EZI-HI108U	1.5	332.5	Ø100	69.6	80.6	6	12	Ø96
EZI-HI110U	1.625	409	Ø110	78.9	88.9	6	12	Ø106
EZI-HM42X45	M42	456	Ø114	78.3	88.3	6	12	Ø110
EZI-HI112U	1.75	456	Ø114	80.3	103.3	8	20	Ø110
EZI-HM48X5	M48	629.3	Ø128	84	106	8	20	Ø124
EZI-HI200U	2	598.5	Ø128	84	106	8	20	Ø124
EZI-HM56X55	M56	821.1	Ø146	89.5	110.5	8	20	Ø142
EZI-HI204U	2.25	785.4	Ø146	89.5	110.5	8	20	Ø142
EZI-HI208U	2.5	940.5	Ø156	95.6	115.6	8	20	Ø152
EZI-HM64X6	M64	1108.4	Ø166	95.8	115.8	8	20	Ø162
EZI-HI212U	2.75	1128.3	Ø172	100.6	120.6	8	20	Ø168
EZI-HM72X6	M72	1474.9	Ø190	99.5	119.5	8	20	Ø186
EZI-HI300U	3	1379.9	Ø190	99.9	119.9	8	20	Ø186
EZI-HM80X6	M80	1770.3	Ø206	105.9	124.9	8	20	Ø202

EziTite[®] Hydraulic Nuts consist of:

1. Lockring
2. Nut Body
3. Inner seal
4. Outer seal
5. Piston



All standard EziTite[®] Hydraulic Nuts come standard with CEJN type male snap fittings, 1/8" BSPP porting and bleed plugs.

- EziTite[®] Hydraulic Nuts are supplied with spherical washers as standard
- Maximum force is generated using maximum operating pressure



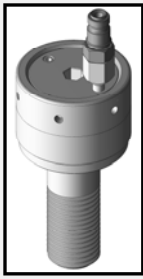
If the standard range above does not suit, our technical staff will modify the design to suit the application

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Commercial grade Imperial EziTite nuts are calculated at approximately 65% proof load of a SAE Grade 2 bolt.
Commercial grade Metric EziTite nuts are calculated at approximately 65% proof load of a Grade 4.6 bolt.
Maximum operating pressure for commercial grade is 700 Bar

High Tensile Grade Imperial— are calculated at approximately 65% proof load of a SAE Grade 5 bolt.
High Tensile Grade Metric— are calculated at approximately 65% proof load of a Grade 8.8 bolt.
Maximum Operating pressure for High Tensile grade is 1000 Bar



EziTite® Hydraulic Bolt

The EziTite® Hydraulic Bolt 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 (eg. Technofast's hand operated, Electric Hydraulic or Air Hydraulic Pumps).

The Hydraulic Bolt is extremely resistant to vibration and shock loads. Hydraulic Bolts are used to minimise the time required to carry out critical bolting procedures. It is manufactured in a choice of steel or stainless steel of tensile strength to suit the required application.



Features

- Standard Range—20mm (7/8") to 100mm (4") bolt diameter.
- Unique Lockring thread technology ensures maximum retained load.
- Spherical seat gives alignment to joint face.
- Variety of seal designs for temperature/pressure requirements.
- Quick connect fittings.
- Stroke Indicator.

Currently used in:

- Mines
- Quarries
- Steel Mills
- Steel Recyclers
- Manufacturing Plants
- Power Stations
- Desalination Plants
- Wind Farms
- Construction / Heavy Industry

Applications

EziTite® Hydraulic Bolts are designed for many applications eg: where vibration or restrictive spaces can be a problem, a few examples of applications are:

- Vibrating Screens
- Flanges
- Reactors
- Autoclaves

Suitable for:

The EziTite® 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.

All standard Hydraulic Bolts fitted with CEJN type male snap fittings, 1/8" BSPP porting and bleed plugs

- Hydraulic Bolts supplied with spherical washers as standard.
- Hydraulic Bolts may be supplied with a Nut & flat washer
- Maximum pressure of standard Hydraulic Bolts is 100 Mpa (custom designs may be higher)

Operation

The EziTite® assembly replaces the ordinary bolt on the application. Hydraulic pressure is then applied 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 lockring, mounted on the piston, is then screwed against the abutting face to retain the induced load in the bolt. The pressure is then simply released and the hydraulic coupling removed from the nipple fitting to complete the operation. This guarantees no galling of threads, no torsional stresses and ease of future removal as lock ring is unscrewed without friction.





EziTite® Hydraulic Clamp Nut

EziTite® Hydraulic Clamp Nuts are the modern, safe and efficient way to ensure precise tool clamping. EziTite® Hydraulic Clamp Nuts replace conventional torque-loaded threaded nuts to make shaft tensioning a simple, efficient and safe hydraulically assisted operation. They are also widely used to set large shaft bearings.

They are manufactured in a wide range of sizes to suit applications throughout many industries. EziTite® Hydraulic Clamp Nuts are made in a standard range to suit thread sizes from 50mm to 300mm and other sizes by request.



Features

- Vastly reduces downtime and maintenance problems.
- Improves productivity.
- Is user friendly, fast and easy to fit.
- Greatly enhances tool life.
- Repeatable accuracy of the tensioning operation reduces product variation.
- Achieves faster throughput without compromising product quality.
- Minimises risk of personal injury and collateral damage to capital equipment during blade and tool changes.
- Threaded locking collar counteracts loosening forces of impact on rotating shafts.

Operation

The EziTite® assembly is screwed by hand onto the bolt until the base is tight against the working face. Hydraulic pressure is then applied 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 collar, mounted on the nut body, is then screwed against the abutting face to retain the induced load tension in the bolt. The pressure is then simply released and the hydraulic coupling removed from the nipple fitting, to complete the operation.

Currently used in: Applications (examples):

- Steel Mills
- Steel Recyclers
- Manufacturing Plants
- Construction / Heavy Industry
- Marine Industry
- Sugar Mills
- Metal slitting mills
- Coil Rewinders
- Marine propeller shafts
- Sugar milling equipment
- Manufacturing machinery such as punches and presses
- Steel rolling mills
- Bearing setting and removal

Suitable for:

The EziTite® Hydraulic Clamp Nut 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.



If required, the EziTite® Hydraulic Clamp Nut can be manufactured with a sacrificial ring. Therefore, if for some reason the nut becomes locked on to the application— you simply remove the sacrificial ring and the nut will release.



Patent No: PCT/WO2006/037173

This product is covered by numerous patents worldwide

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CamNut

Many Technofast product users have wished to extend the benefits of HydraJac Tensioning Systems across more applications, but have been restricted by bolts which do not have sufficient stud protrusion through the nut to apply these tools. There are many instances where stud replacement is not an option, or where stud protrusion is undesirable.

Technofast's revolutionary CamNut HydraJac system brings an affordable and efficient solution to this problem, in a compact system which is simple, safe and easy to use.

Normally, a Bolt Tensioning tool pulls on the bolt threads protruding above the regular hex nut, which is then screwed down to retain the loads induced by hydraulic operation of the tool. With no available thread, the CamNut performs as the connection to the bolt for the operation. Its integral collar expands to take up the bolt's elongation under force and retains the load when the hydraulic charging pressure is released.



Features

The patented design of the CamNut is inexpensive and has the following advantages:

- User friendly, fast to fit & remove.
- Requires little physical effort.
- Ideal for situations with short bolt grip length.
- Modular construction reduces overall tool weight.
- Designed for extreme situations / adverse conditions.
- No longer need to replace expensive studs to provide sufficient grip length.

CamNut Standard Range

A standard range of CamNuts are available for use with Technofast's A3 Spring Return Series HydraJacs.

Example:

- A3S-T2 = 361 kN (max load)
- A3S-T4 = 666 kN (max load)
- A3S-T6 = 1216 kN (max load)
- A3S-T8 = 1900 kN (max load)

Max Load refers to a Hydraulic pressure of 1500 bar being applied to the Tensioner.

Recommended for:

- Mines
- Quarries
- Steel Mills
- Steel Recyclers
- Manufacturing Plants
- Power Stations
- Desalination Plants
- Wind Farms
- Construction / Heavy Industry

Suitable for:

The CamNut is suitable:

- When accurate and reliable loading is required.
- When confined spaces are an issue, including restricted bolt spacing.
- Where environmental issues are a concern

Applications:

A few examples of applications are:

- Pressure Vessel Closure (i.e.: Autoclaves, Boilers, etc).
- Crusher Liner Bolts.
- Flange Makeup
- Turbine Joints

Custom Units also available

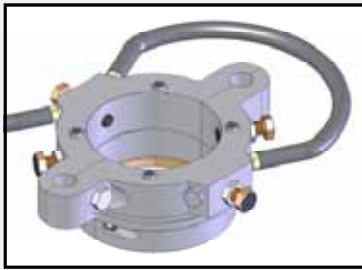


Patent No: PCT/WO2005/123345

This product is covered by numerous patents worldwide

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Gland Packer



Owners and operators of centrifugal and axial flow pumps are familiar with the problems caused by fluid leakage through the packing gland of these. In some cases, costly mechanical seals can solve the problem, but this remedy is unsuitable in all situations. Technofast Industries have applied their hydraulic tensing expertise to produce the Hydraulic Gland Follower which has now been demonstrated to resolve safety and operational issues associated with traditional packed gland sealing.

This device replaces standard hex-nut operated gland packing collars, and allows pump operators to remotely set & adjust system pressure to preload the gland packing whilst maintaining the necessary pilot dribble.

Current "turn of nut" operated gland followers require the attention of maintenance personnel to frequently adjust the packing to limit the loss of fluids from the gland.



Features

- Huge purge water and/or product savings from leaking seals.
- Eliminates the need for plant operators to manually adjust standard gland followers.
- Eliminates safety hazard of performing adjustments on live shafts.
- Packing life increased as constant pressure is applied eliminating overheating, erosion and wash out of the packing.
- Less downtime due to pump extended packing life.

How does it work?

The Gland Follower is designed to be retrofitted to existing pumps so no major modifications are needed. The system uses the existing bolts to anchor the Gland Follower (fig 1) and a simple bracket is used to mount the remote charging/monitoring system at a safe distance from the pump (fig 4).

The system is pressurised using a high pressure grease/oil pump from the remote charging/monitoring station thus activating the pistons in the Gland Follower applying a preload to the gland packing.

The system is fitted with an accumulator, allowing the unit to apply a constant load to the packing without further adjustment from the operator as the packing wears.

Suitable for:

- Centrifugal & Axial flow pumps
- Valve steam glands
- Propeller Shafts

Each product is designed to suit the pump it will be used on. Please contact Technofast for Technical information or a quote.



Fig 1.



Fig 2.



Fig 4.



Fig 3.



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A2 Dedicated Series HydraJac

The HydraJac Stud Tensioner utilizes the power of hydraulic pressure to easily produce the forces necessary to effectively tension bolts and studs. Once the HydraJac is in place, screwed onto the bolt's thread over the standard nut, the required pressure is applied to stretch the bolt to its recommended preload, and the nut screwed down to retain the load. The pressure is relieved, the HydraJac removed and is ready to use again. HydraJac Dedicated Thread Stud Tensioners provide the answer to many of the fitting problems associated with using larger tensioning equipment. They are also ideal for single task applications which do not require interchangeability of thread sizes. Any number of HydraJacs can be interlinked to provide even amounts of simultaneous tension over multiple studs or bolts as required. Produced from high strength alloy steel, HydraJac Stud Tensioners are made in standard configurations. They can also be made to suit the requirements of a specific application.

Features:

- Reduces maintenance down time.
- Improves safety on the job by eliminating hammer tightening.
- 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.
- Multiple tensioning for leak-free flange makeup.

Currently used in:

- Mining & Quarrying
- Oil & Gas
- Marine
- Power Generation
- Agricultural
- Structural
- Heavy Equipment in general industry
- Chemical Plants

Suitable for:

The EziTite® 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.
- Simultaneous tightening of bolts is required (eg: Flanges)
- No torque means used (eg: Foundation Bolts)

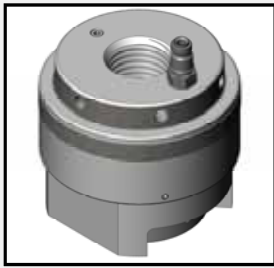


Operation

Although smaller and lighter than many competitive types, HydraJac Stud Tensioners are capable of high application forces. The higher forces generated by HydraJac devices permit their use with bolts of very high tensile strength, for example, in bolting of highly stressed assemblies or those prone to destructive vibration.

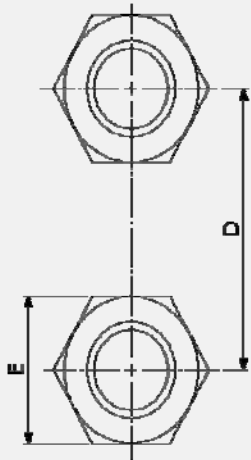
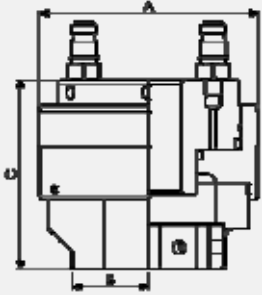
Operation of HydraJac at typical lower charge pressures requires less use of costly pumping equipment, and with an improved degree of safety. All HydraJac tensioners are designed to use seals which can be easily replaced in minutes, eliminating expensive repairs.





HydraJac A2 Dedicated Model Specifications

Model #	Size Imp	Size ISO	Max Force kN	O.D. (A)	Min Pitch (D)	Relief (B)	Height (C)	Nut A.F. (E)	Weight
A2I010X11	5/8"		137	52	41	23	72	16	0.9
A2M16X20		M16			41	23	72	27	
A2M18X25		M18	185	62	46	23	76	30	1.2
A2I012X10	3/4"		185	60	46	24	76	31.8	
A2M20X25		M20	225	67	51	26	82	34	1.4
A2M22X25		M22	285	72	51	26	84	36	1.9
A2I014X9	7/8"		285	72	51	26	84	36.6	
A2M24X30		M24	235	78	59	29	87	41	2.0
A2I100X8	1"		352	79	59	29	87	41.3	
A2M27X30		M27	483	90	65	36	93	46	2.7
A2I102X8	1.1/8"		483	91	65	36	93	46	
A2M30X35		M30			72	36	93	50	
A2I104X8	1.1/4"		602	96	73	36	96	50.8	3.1
A2M33X35		M33	732	108	76	39	103	55	4.6
A2I106X8	1.3/8"		732	108	76	39	105	55.8	
A2M36X40		M36	873	118	80	42	108	60	5.5
A2I108X8	1.1/2"				80	42	108	60.4	
A2M39X40		M39			89	42	112	65	
A2M42X45		M42	988	129	91	45	114	70	6.1
A2I110X8	1.5/8"				91	45	114	65.1	
A2M45X45		M45	1026	130	94	49	118	75	6.7
A2I112X8	1.3/4"		1026	131	94	49	118	69.9	
A2M48X50		M48	1240	143	102	51	127	80	9.2
A2I114X8	1.7/8"		1240	143	102	51	129	74.7	
A2M52X50		M52	1376	151	110	54	123	85	10.4
A2I200X8	2"		1376	151	106	54	123	79.4	
A2M56X55		M56	1568	161	119	59	143	90	14.4
A2I204X8	2.1/4"		1568	161	119	54	123	88.9	
A2M60X55		M60			131	65	142	95	
A2M64X60		M64	1935	178	131	65	151	100	16.2
A2I208X8	2.1/2"		1933	179	131	65	152	98.5	
A2M68X60		M68			146	71	151	105	
A2M72X60		M72	2280	190	146	71	164	110	19.5
A2I212X8	2.3/4"				146	71	159	108	
A2I300X8	3"		2779	215	160	77	177	117.5	23.8
A2M76X60		M76			160	77	177	115	
A2M80X60		M80		215	161	77	177	120	
A2I304X8	3.1/4"		3192	230	172	87	197	127	31.0
A2M85X60		M85	3056		230	87	180	125	
A2I308X8	3.1/2"		3777	250	177	93	202	136.5	38.6
A2M90X60		M90			177	93	202	135	
A2I312X8	3.3/4"		4256	265	202	96	218	146	51.4
A2M95X60		M95			202	96	218	145	
A2I400X8	4"		4926	285	212	105	225	155.6	61.9
A2M100X60		M100			212	105	225	150	



Stroke for all models is 15 mm.
 Maximum force is generated at 150 MPa.
 A2M42X45 model number is read as M42 x 4.5 pitch.
 A2I110X8 model number is read as 1.5/8" x 8 tpi, (imperial numbers are written as 16th of an inch).

These dimensions are a guide only. If our standard product does not fit within your space restrictions, please contact our office and one of our technical staff will design a solution for your tensioning requirements.





A3 Modular Series HydraJac

The HydraJac Stud Tensioner provides accurate and versatile tensioning of bolts and studs whilst being fast, simple and safe to use.

The HydraJac uses hydraulic pressure to tension the bolt to the exact load required. Once the bolt has been tensioned, the nut is wound down the thread to retain the load. The HydraJac is then de-pressurised, released and ready to use again.



Features:

- Reduces maintenance down time.
- Improves safety on the job by eliminating hammer tightening.
- 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.
- Multiple tensioning for leak-free flange makeup.

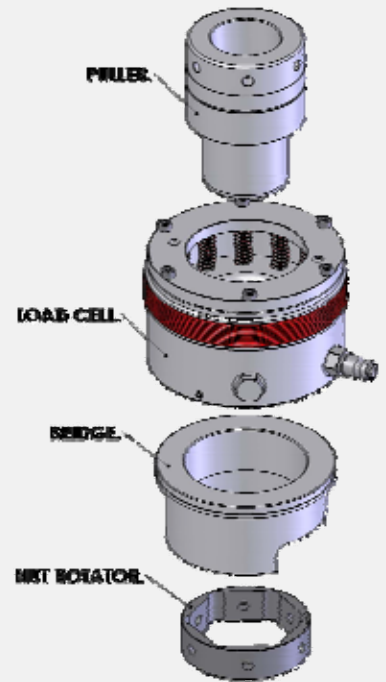
Currently used in:

- Mining & Quarrying
- Oil & Gas
- Marine
- Power Generation
- Agricultural
- Structural
- Heavy Equipment in general industry
- Chemical Plants

Suitable for:

The HydraJac 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.
- Simultaneous tightening of bolts is required (eg: Flanges)

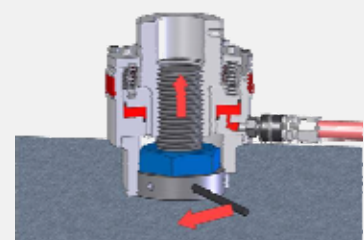
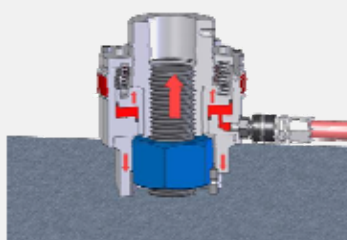
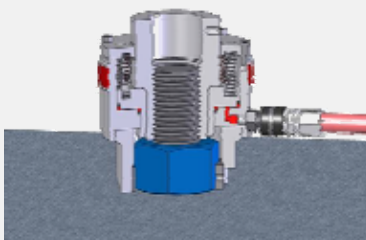


Operation

(a) Place the HydraJac onto the stud.

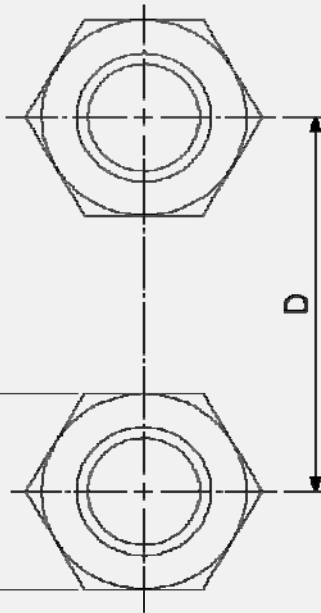
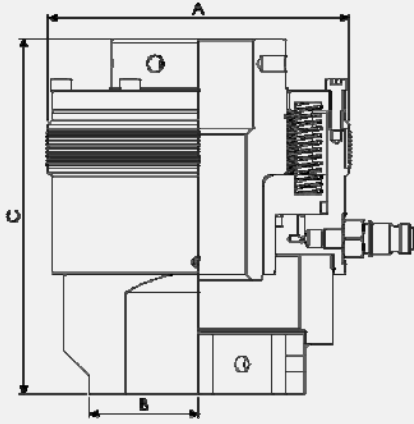
(b) Pressurise the tool.

(c) Lock the nut off.





A3 HydraJac Technical Specifications



These dimensions are a guide only

Note: All dimensions in millimetres

Tool #	Size Imp	Size ISO	Kit # P=Pitch	Max-Force kN	O/D (A)	Min Pitch (D)	Relief (B)	Height (C)	Nut Thick	Nut A.F (E)	Total Weight	A/K Weig					
T2	7/8"		T2-014XP	361	88	59	26	117	21.8	36.5	3.1	1.5					
	1"		T2-100XP										59	29	117	25.7	41.3
		M24	T2-M24X30										59	29	117	24.2	41
	1.1/8"		T2-102XP										60	32	124	28.9	46
T3		M27	T2-M27X30	546	104	72	36	142	30.7	50	4.2	2.3					
	1.1/4"		T3-104XP										73	36	142	31.8	50.8
		M33	T3-M33X35										73	36	145	33.7	55
T4	1.3/8"		T3-106XP	666	114	77	36	147	35	55.8	6.1	3.1					
		M36	T3-M36X40										76	39	147	36.6	60
	1.1/4"		T4-104XP										77	36	144	31.8	50.8
		M33	T4-M33X35										77	36	146	33.7	55
T5	1.3/8"		T4-106XP	964	134	89	42	166	38.2	60.4	9.8	5.2					
		M36	T4-M36X40										78	39	147	35	55.8
	1.1/2"		T4-108XP										80	42	150	38.2	60.4
		M39	T4-M39X40										80	42	151	39.6	65
T6	1.1/2"		T5-108XP	1 217	149	99	45	166	41.5	65.1	11.6	5.8					
		M39	T5-M39X40										89	42	169	39.6	65
	1.5/8"		T5-110XP										91	45	170	41.5	65.1
		M42	T5-M42X45										91	45	173	42	70
	1.3/4"		T5-112XP										94	49	174	44.7	69.9
T7		M45	T5-M45X45	1 496	162	101	49	170	44.7	69.9	13.7	6.9					
	1.5/8"		T6-110XP										101	49	170	45	75
		M42	T6-M42X45										99	45	167	42	70
	1.3/4"		T6-112XP										101	49	170	44.7	69.9
		M45	T6-M45X45										101	49	170	45	75
T8	1.7/8"		T6-114XP	2 508	202	105	54	176	51.1	79.4	21.0	10.6					
		M48	T6-M48X50										102	51	173	47.9	74.7
	2"		T6-200XP										105	54	176	51.1	79.4
		M52	T6-M52X50										105	54	178	52	85
	1.7/8"		T7-114XP										110	51	181	47.9	74.7
T9		M48	T7-M48X50	1 900	184	110	51	181	48	80	26.2	13.5					
	2"		T7-200XP										112	54	181	51.1	79.4
		M52	T7-M52X50										112	54	181	52	85
	2.1/4"		T7-204XP										119	59	185	57.2	88.9
		M56	T7-M56X55										119	59	185	56	90
T10	2.1/4"		T8-204XP	2 903	219	124	59	186	57.2	88.9	31.1	15.2					
		M56	T8-M56X55										124	59	186	56	90
		M60	T8-M60X55										131	65	191	60	95
	2.1/2"		T8-208XP										131	65	193	63.7	98.5
		M64	T8-M64X60										131	65	193	64	100
T11	2.1/2"		T9-208XP	3 777	242	136	65	203	63.7	98.5	39.0	19.6					
		M64	T9-M64X60										136	65	203	64	100
		M68	T9-M68X60										146	71	207	68	105
	2.3/4"		T9-212XP										146	71	209	70.1	108
		M72	T9-M72X60										146	71	211	72	110
T12	2.3/4"		T10-212XP	4 927	280	150	71	213	70.1	108	55.9	27.4					
		M72	T10-M72X60										150	71	215	72	110
	3"		T10-300XP										157	77	220	76.5	117.5
		M76	T10-M76X60										157	77	220	76	115
		M80	T11-M80X60										163	77	227	80	120
T11	3.1/4"		T11-304XP	3 777	242	161	77	224	76.5	117.5	39.0	19.6					
		M85	T11-M85X60										175	87	230	82.6	127
		M85	T11-M85X60										175	87	234	85	125
	3.1/2"		T11-308XP										177	93	236	89.1	136.5
		M90	T11-M90X60										177	93	239	90	135
T12	3.3/4"		T12-312XP	4 927	280	202	99	238	95.5	146	55.9	27.4					
		M95	T12-M95X60										202	99	238	95	145
	4"		T12-400XP										212	105	245	102	155.6
		M100	T12-M100X60										212	105	245	100	150

- ❑ Stroke for all models is 15mm.
- ❑ Maximum force is generated at 150 MPa.
- ❑ HydraJac ordered as a complete tool, for example: A3S-T4-M36X40 is specified to suit M36 x 4.
- ❑ Adaptor kits ordered separately, for example T4-M36X40 is specified to suit M36 X 4.0.



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A4 Subsea Series HydraJac

Technofast's Subsea HydraJac has been designed to address the difficulties experienced by divers operating the tools under water. The unique patented Tri-Nut allows a one handed operation & prevents gloves from getting caught (in pinch points). This means that the tool is both extremely fast to operate & it is safer for the diver than other tools available on the market.

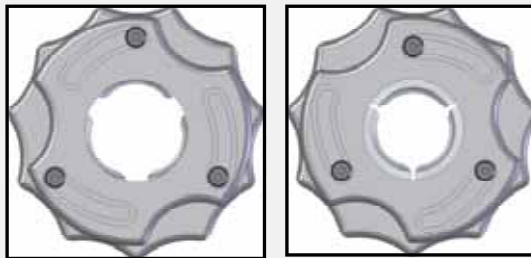
Another important feature of the Subsea HydraJac is that the Tri-Nut will lock into place even when operating the tool upside down. This is extremely beneficial for a diver, due to the harsh environment in which they are working.

The Subsea HydraJac is user-friendly and provides a comprehensive solution to underwater tensioning applications.



Features

- 1" to 3.1/2" bolt diameter.
- 30mm stroke capacity.
- Unique cam lock design.
- Tri nut locks into tool, even in upside down position.
- Hi visibility coating.
- Quick connect.
- No Pinch Points
- Divers can wear gloves while operating the tool.



SAFE FAST RELIABLE

SAFE FAST RELIABLE

Operation

The Subsea HydraJac is operated by placing the unique patented Tri-Nut over the thread of the protruding stud until seated. Using the top cap turn to a closed position which closes the nut onto the thread. (This alleviates the need for the time consuming process of screwing a reaction nut down over the full required thread engagement). A Hose & pump are then connected to the HydraJac via the quick connect fittings and pressure is applied to the tool. Once the HydraJac has reached the pressure/load required, simply lock off the standard nut and relieve the hydraulic pressure within the tool. The HydraJac can then be removed and the tensioning procedure is complete.



Patent No: PCT/WO2005/123345

This product is covered by numerous patents worldwide





A5 2-Stage HydraJac

Technofast's A5 2-Stage HydraJacs encompass a large range of slim bodied tensioners to complete maintenance on any application with restricted space.

The A5 series of hydraulic Tensioners are a lightweight, user friendly range of Tensioners, which are quickly and easily fitted in restricted spaces. These Tensioners are powerful & provide accurate and versatile tensioning of bolts and studs whilst being fast, simple and safe to use.

When using Technofast's A5 range of tensioners, down time can be dramatically reduced on all jointing applications. This in turn increases productivity and reduces costs to the end-user.

There is a standard A5 range available, or the Tensioners can be designed to suit the application.



Features

- The slim fit design allows these Tensioners to operate in restricted space.
- Reduce outage time for critical jointing applications.
- Optional side gear box for quick installation.
- To suit application, these can be custom designed.

Suitable for:

A5 HydraJacs have a slender profile designed for restricted access around the bolt head. These Jacs are ideal for applications such as:

- Crane Slew Rings
- Steam Turbines
- Gas Turbines
- Wind Tower

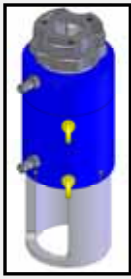


Operation

The HydraJac uses hydraulic pressure to tension the bolt to the exact load required. Once the application has been tensioned, the nut is wound down the thread to retain the load. The HydraJac is then depressurized, released and ready to use again.

Any number of HydraJacs can be interlinked to provide even amounts of simultaneous tension over multiple studs or bolts as required.





FastaJac

Technofast's FastaJac saves on production, labour and maintenance costs for manufacturers of plate heat exchangers. The use of a lightweight hollow cylinder jack in conjunction with the patented 'Tri Nut' allows the compression of plates to be carried out evenly, squarely and efficiently. The hydraulic cylinders simultaneously compress the plates.



Quickly Adjustable

The Patented 'Tri Nut' allows the compression of plates to be carried out evenly, squarely and efficiently. The hydraulic cylinders simultaneously compress the plates.

Features

- Unique cam lock design.
- Tri nut locks into tool, even in upside down position.
- Quick connect fittings
- No Pinch Points



Above Left - Open Tri-Nut
Above middle: Tri-Nut Closed
Right - Complete Tri-Nut

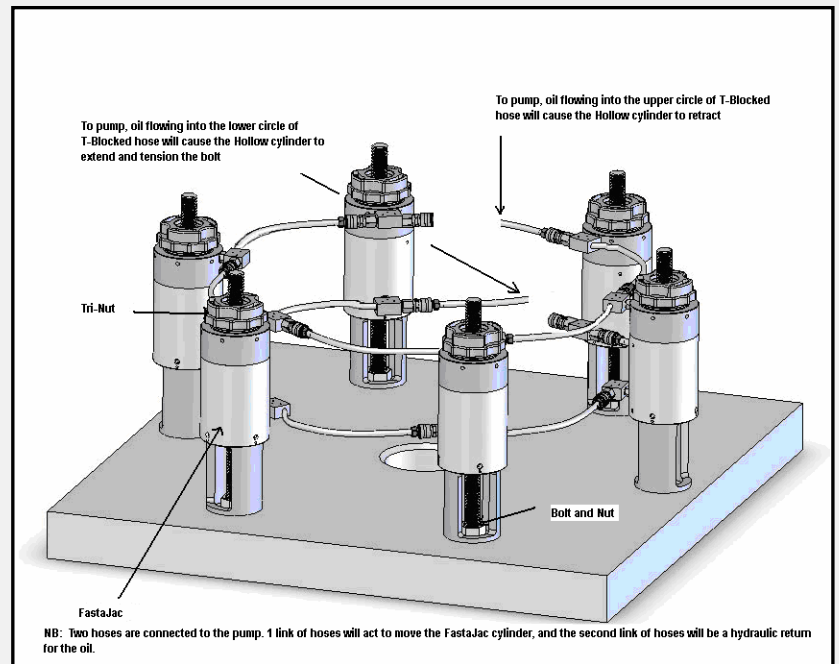
Suitable for:

- Plate Heat Exchangers
- Pre & Post Tensioning Applications

Operation

The Tri-Nut is designed to fit over the major diameter of the thread until it engages into its spherical seat. This closes the nut onto the thread and the nut is screwed home as normal.

This facilitates speedy fitting and removal of the tools removing the need for 'running down' the Tensioner retaining nut over the full length of the thread.

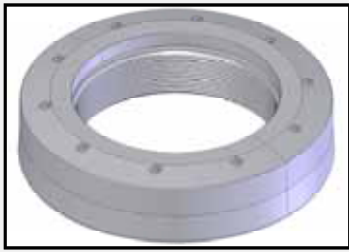


Patent No: PCT/WO2005/123345

This product is covered by numerous patents worldwide

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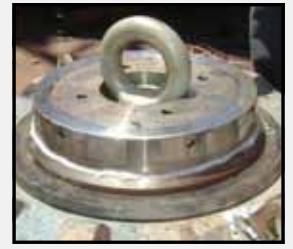


EziTite® Hydraulic Head Nut

Since the development of the gyratory Crusher, the quarrying industry has sought better means for effective and safely tightening mantle head nuts.

Technofast Industries have successfully developed the EziTite® Hydraulic Head Nut System to replace standard mantle Head Nuts. In additions to technical and performance criteria, major considerations of the design are aimed at protection of operators from strike or shrapnel injuries commonly occurring when hammering tight the standard mantle head nut.

The EziTite® features an hydraulic clamping nut with an integral sacrificial protective cover which can be constructed according to the abrasive nature of the material being crushed.



Features

Precise clamping forces are generated by hydraulic pressure acting on a constrained area within the EziTite® nut. Head Nuts are fitted with mechanical locking rings to retain these tensile loads.

In the unlikely situation that there is a hydraulic malfunction, a simple patented breaker ring that is positioned between the lock ring and the nut body can be used to release the load on the shaft.

Advantages

- Vastly reduces downtime and maintenance problems.
- Improves productivity.
- Greatly enhances mantle shaft life, by reducing the damage
- Repeatability accuracy of the tensioning operation reduces product variation.
- Is user friendly, fast and easy to fit.
- Minimises risk of personal injury and collateral damage to capital equipment during changes of wearing parts.
- Threaded locking collar counteracts loosening forces of impact on rotating shafts.
- Requires low level of skill for operation.



Mantle before the Installation



Mantle with Technofast's EziTite Hydraulic Head Nut installed



Close up of the EziTite Hydraulic Head Nut installed



Patent No: PCT/WO2006/037173

This product is covered by numerous patents worldwide

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Technofast Supplies everything you require in order to operate your bolt tensioning devices



Technofast have a standard range of pump units available including:

- Hand Pumps
- Electric Pumps
- Air/Hydraulic Pumps

Protective Pump Cages are also available



Technofast can supply:

- Fittings
- High & Low pressure hoses
- Adaptors
- Manifolds & T-Blocks
- Poly Covers to protect nuts & bolts from contamination

Please refer to the following page to see what pump & hose configuration you will need in order to use your Technofast products.

If you require assistance with this, please contact our friendly sales staff who are more than happy to assist you.



Technofast can create a package to include everything you need, and supply this in a solid tool box which can easily be moved around by forklift and stored or fitted with wheels for mobility & convenience.



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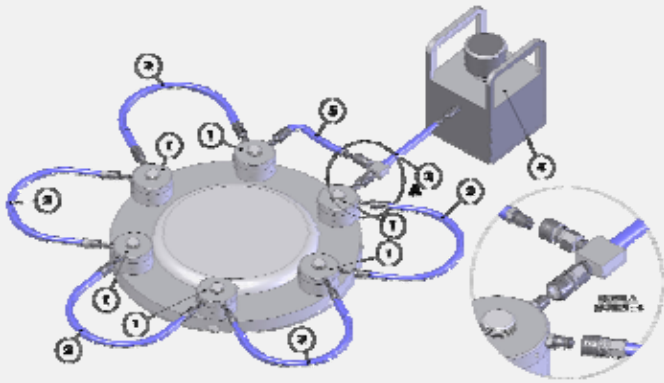




Standard Circuit Configurations

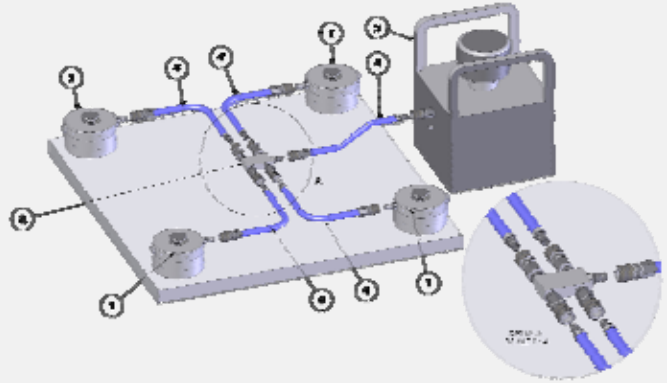
When using Technofast products, we recommend the following circuit configurations for the best possible result.

Daisy Chain



1. Technofast Product (supplied with an additional nipple)
2. Interconnect Hose
3. T-Blocked Hose
4. Pump Unit
5. Link Hose

Manifold



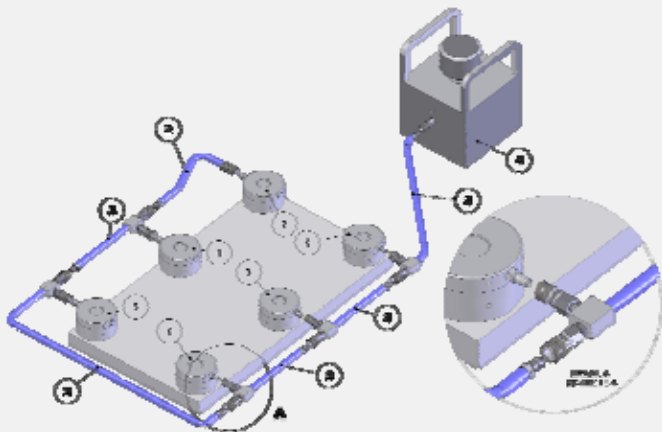
1. Technofast Product
3. 5 Way Manifold
4. Link Hose
5. Pump Unit

Please Note:

* Hose lengths depend on the application

* Always ensure that the hoses and pump unit can operate at a pressure relevant to the tool

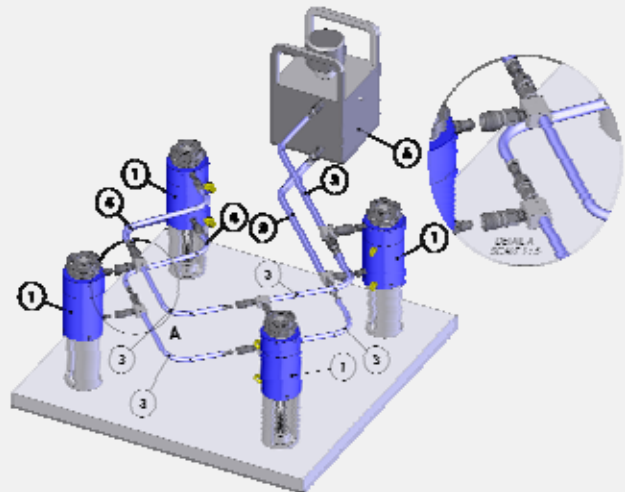
T-Block



1. Technofast Product (supplied with an additional nipple)
2. Link Hose
3. T-Block Hose
4. Pump Unit

FastaJac

Dual action, arrangement required for 'FastaJac's'.



1. Technofast Product
3. T-Block Hose
4. Link Hose
6. Pump Unit





Technofast Services Pty Ltd



Technofast Services a division of the Technofast Group is dedicated to assisting our customers with all on-site work relating to tensioning, leak sealing, hot tapping, flange facing and drilling.

We can perform on-site installations of Technofast Products if required and can perform on-site training.

We are 100% Australian Owned and Operated, and offer very competitive prices.

Hire Products Available

- Hire of Tensioners
- Hire of Pumps, Hosing & Fittings
- Hire of Torque Wrenches
- Hire of In-Situ Machines

Services Available

- On-site installation & operation of Technofast Products
- Leak Sealing
- Hot Tapping
- Flange Facing
- Drilling
- Subsea Bolting
- Bolt tensioning
- Torque Tensioning
- Bolt Load & Flange Stress Calculations
- Staff training on the operation of Hydraulic Tensioning Devices

Major projects have been successfully undertaken with leading industrial clients.

A comprehensive list is available.

For a quote or information, please contact:

Technofast Services
Unit 1, 23 Mandurah Road
Kwinana WA 6167

Tel: 08 94395111
Fax: 08 9439 5222
Email: saleswa@technofast.com



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