

OTHER TOOLS

HIGH PERFORMANCE HIGH FORCE HYDRAULICS

Page
ENS...48-49
Hydraulic Nut Splitters



Page
HNS...54
Hydraulic Nut Splitters



Page
HS...55
Hydraulic Spreaders



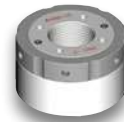
Page
FLS15...50-53
Hydraulic Flange Spreader



Page
HFS...56
Pipe Flange Spreader



Page
EHN...57
Hydraulic Nut



NUT SPLITTERS

HYDRAULIC - ENS

M20 to M90 (3/4" to 3-1/2")
bolt diameter



SINGLE ACTING



DOUBLE ACTING
Ideal for Subsea use

OK FOR SUBSEA



ENS HYDRAULIC NUT SPLITTER

Our hydraulic nut splitter offers a reliable and effective solution to the removal of seized and corroded nuts.

- Triple edge replaceable cutting blade
- Blade positioning scale to eliminate bolt damage
- Cutting depth fixed - Nut size adjustable via rotating cylinder!
- Size range from M20 to M90 (3/4" to 3-1/2") bolt diameters
- Designed to fit ANSI, ASME B.16.5 flanges
 - Will work with some API flanges – contact factory for details
- Twin line hydraulic version available for subsea use
- Versatile, reliable and trouble-free operations
- Operates off a standard 700 bar (10,000 psi) pump unit
- Built-in safety relief valve to protect tool & operator

Double acting (subsea) version comes standard with 700 bar, 1/4" NPT, Push to Connect (PTC) couplers. To use with top side pumps, change out couplers to 700 bar, 1/4" NPT, Screw-to-connect style. See page 102 for coupler details.

Ordering Information

TO SPECIFY AN ENS SOLUTION:

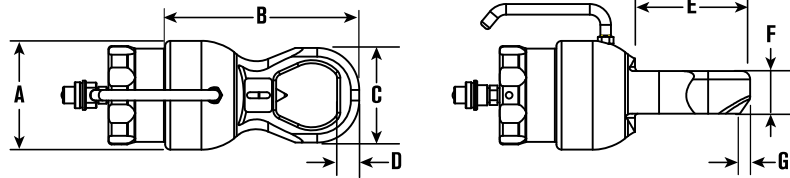
1. Use the table located on the next page to identify the nut you need to split and select the appropriate head.
2. Select a single or double acting cylinder. For subsea applications only select double acting cylinders.
3. Order extra cutting blades (optional).

Accessory Ordering Information

Order No.	Description
ENSBL010001	Cutting blade for ENS1
ENSBL020001	Cutting blade for ENS2
ENSBL030001	Cutting blade for ENS3
ENSBL040001	Cutting blade for ENS4

Specifications and Dimensional Data

Pick One Cylinder +
One Head



(Tool Reference) Order Numbers

STANDARD Standard Cylinder Single Acting	OPTIONAL Subsea * Cylinder Double Acting	Head	Bolt Dia.	Nut A/F	Bolt Dia.	Nut A/F	A		B		C		D		E		F		G		Wt																	
			Metric	mm	Imperial	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb																
ENSAS010001	ENSAS010004	ENSAS010002	M20	30	3/4"	1-1/4	104	4.1	228	9.0	76	3.0	18	0.7	104	4.1	40.5	1.6	9	0.4	6.7	14.8																
			M22	32	7/8"	1-7/16																																
			M24	36	1"	1-3/8																																
			M27	41																																		
		ENSAS010003	M20	30	3/4"	1-1/4	104	4.1	239	9.4	90	3.5	21	0.8	110	4.3	40.5	1.6	10	0.4	6.9	15.2																
			M22	32	7/8"	1-7/16																																
			M24	36	1"	1-3/8																																
			M27	41	1-1/8"	1-13/16																																
	M30		46	1-1/4"	2																																	
	M33		50																																			
	ENSAS020001	ENSAS020004	ENSAS020002	M30	46	1-1/8"	1-13/16	138	5.4	305	12.0	102	4.0	22	0.9	132	5.2	57.5	2.3	6	0.2	15.8	34.8															
				M33	50	1-1/4"	2																															
				M36	55	1-3/8"	2-3/16																															
				M39	60	1-1/2"	2-3/8																															
ENSAS020003			M30	46	1-1/8"	1-13/16	138	5.4	314	12.4	114	4.5	23	0.9	141	5.6	57.5	2.3	6	0.2	16	35.3																
			M33	50	1-1/4"	2																																
			M36	55	1-3/8"	2-3/16																																
			M39	60	1-1/2"	2-3/8																																
		M42	65	1-5/8"	2-9/16																																	
		M45	70	1-3/4"	2-3/4																																	
ENSAS030001		ENSAS030006	ENSAS030002	M45	70	1-3/4"	2-3/4	190	7.5	406	16.0	132	5.2	28	1.1	189	7.4	80.5	3.2	8	0.3	42	92.6															
				M48	75	1-7/8"	2-15/16																															
				M52	80	2"	3-1/8																															
				M56	85	2-1/4"	3-1/2																															
	ENSAS030003		M45	70	1-3/4"	2-3/4	190	7.5	416	16.4	145	5.7	30	1.2	199	7.8	80.5	3.2	8	0.3	42.5	93.7																
			M48	75	1-7/8"	2-15/16																																
			M52	80	2"	3-1/8																																
			M56	85	2-1/4"	3-1/2																																
		ENSAS030004	M45	70	1-3/4"	2-3/4																	190	7.5	426	16.8	160	6.3	31.5	1.2	200	7.9	80.5	3.2	7	0.3	43	94.8
			M48	75	1-7/8"	2-15/16																																
	M52		80	2"	3-1/8																																	
	M56		85	2-1/4"	3-1/2																																	
	ENSAS030005	M45	70	1-3/4"	2-3/4	190	7.5	437	17.2	174	6.9	35	1.4	204	8.0	80.5	3.2	9	0.4	44	97.0																	
		M48	75	1-7/8"	2-15/16																																	
M52		80	2"	3-1/8																																		
M56		85	2-1/4"	3-1/2																																		
M60		90	2-1/2"	3-7/8																																		
M64		95	2-3/4"	4-1/4																																		
M68		100																																				
M72		105																																				
ENSAS040001	ENSAS040004	ENSAS040002	M76	110	2-3/4"	4-1/4	235	9.3	474	18.7	189	7.4	36.5	1.4	235	9.3	110.5	4.4	4	0.2	73	160.9																
			M80	115	3"	4-5/8																																
		ENSAS040003	M76	110	2-3/4"	4-1/4	235	9.3	495	19.5	219	8.6	41	1.6	240	9.4	110.5	4.4	3	0.1	75	165.3																
			M80	115	3"	4-5/8																																
			M85	120	3-1/4"	5																																
	M90	130	3-1/2"	5-3/8																																		

Order a cylinder and a head to make complete nutsplitter. Cylinders are interchangeable with heads within specific size ranges. Each are sold separately.
* Subsea can be use topside.

HYDRAULIC SPREADER

FLS15

15 Metric Ton Capacity
700 bar/10,000 psi



FLS15
WITH SERRATED SHOES—WEDGE FULLY OPENED



FLS15-ST
WITH STEPPED SHOES—WEDGE CLOSED

FLS15 HYDRAULIC SPREADER

SPX FLOW Bolting Systems is pleased to introduce the FLS15 hydraulic spreader. This unit is ideal for pipe and flange repair. It can also be used for removing elbows, gasket and metal seal replacement on couplers, heavy equipment maintenance, and many other tasks. The spreader is capable of developing up to 15 metric tons of force, is lightweight, and easy to use due to its ergonomic design.

- 15 metric ton (33,000 pound) wedge-driven spreader
- Jaws fully supported by wedge for excellent durability
- Low friction provided by heavy-duty extended-life lubricant
- Ideal for flanges with narrow gaps - only 5 mm (0.2 inches) required for entry
- Very high strength due to special alloy used
- Compact and lightweight design - only 287 mm (11.28 inches) long at a weight of 3.2 kg (7 pounds)
- Easy to use - ergonomically balanced handle (optional)
- Suitable for the offshore environment due to superior corrosion resistance
- Quick adjustments for various tasks due to interchangeable shoes (both stepped and serrated)
- Easy and quick maintenance - Only T40 Torx tool required
- Includes female half coupler - mates to standard 3/8" male half coupler (No. 9798)
- Both serrated- and stepped-shoe versions available



FLS15 HYDRAULIC SPREADER

This hydraulic spreader operates using the integrated wedge concept. It is ideal for creating space for flange surface cleaning and repair, and for gasket replacement. The spreader is single-acting, and should be used with a hydraulic pump capable of holding pressure. Maximum operating pressure is 700 bar (10,000 psi).

Spreading Force:

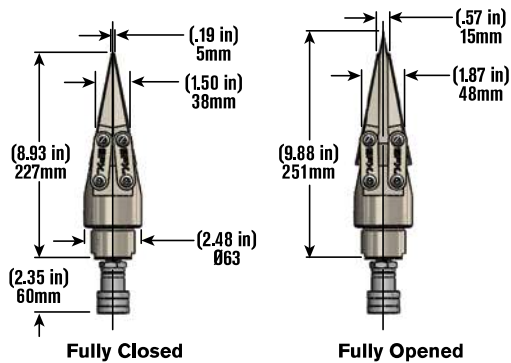
Maximum 15 metric tons (33,000 lb) per tool at 700 bar (10,000 psi). It is recommended that the tools be used in pairs, providing a maximum combined force of 30 metric tons (66,000 lb).

Typical Applications:

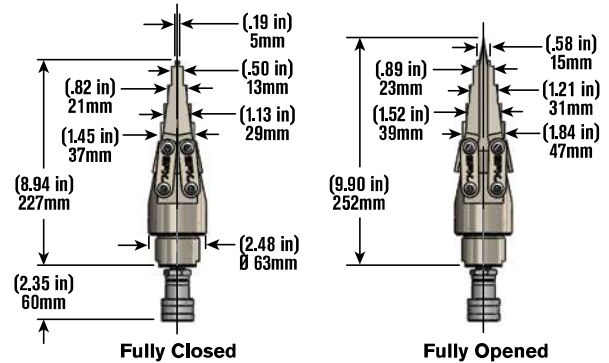
- Pipe and flange repair
- Removing elbows
- Couplers - gasket and metal seal replacement
- Heavy equipment maintenance

Specifications and Dimensional Data

FLS15 Spreader



FLS15-ST Spreader



Order No.	Maximum Spreading Force	Minimum Tip Clearance	Maximum Tip Spread	Spreader Type	Oil Capacity	Weight	Maximum Operating Pressure
FLS15 or FLS15-ST	15 Metric Tons (33,000 Pounds)	5 mm (0.197 Inches)	15 mm (0.59 Inches)	Hydraulic	16 cc (1 Cubic Inch)	3.2 kg (7 Pounds)	700 bar (10,000 psi)

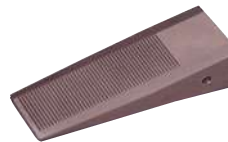
Available FLS15 Accessories



Handle
Part Number 2008410



Stepped Shoe
Part Number 2008083*



Serrated Shoe
Part Number 2008082*



Stepped Block
Part Number SB15

*Two shoes required per spreader.

Recommended Components

Description	Part Number (Europe)	Part Number (Americas & Asia)
Two Speed, Single-Acting Hand Pump	P19L	P19L
Hydraulic Hose Assembly	9764E	9764
Pressure Gauge	9040E (Primary Units = bar)	9040 (Primary Units = psi)
Gauge Adapter	9670	9670
Coupler (male half coupler)	9798	9798
2 Station Manifold with Needle Valves	9642	9642
Female Half Coupler	9796	9796
Male Connector, 3/8	9682	9682

HYDRAULIC SPREADER KIT

FLS15 KIT (TOPSIDE CASE)

15 Metric Ton Capacity
700 bar/10,000 psi



*The spreader kit is available in various combinations, with a standard-duty case that is easy to transport.

FLS FLANGE SPREADER KIT

- Standard duty blow molded case organizes and protects the complete spreading kit
- Extra storage space for additional step shoes and up to 3 step blocks
- 15 metric ton wedge-driven spreader
- Jaws fully supported by wedge for excellent durability



FLS15 KIT (TOPSIDE CASE)

Kit Components		Order No							
		FLS15-FBK	FLS15-MBK	FLS15-FBK-ST	FLS15-MBK-ST	FLS15-FBP	FLS15-MBP	FLS15-FBP-ST	FLS15-MBP-ST
Component	Description	CE	CE	CE	CE				
FLS15	Spreader, Hydraulic	2	1	-	-	2	1	-	-
FLS15-ST	Spreader, Hydraulic Stepped	-	-	2	1	-	-	2	1
SB15	Aluminum Holding Block	2	3	2	3	2	3	2	3
P19L	Lightweight Hand Pump	1	1	1	1	1	1	1	1
Manifold Assy	Manifold, 2 Needle Valve Assembly (Incl. 2 Gauges)	1	-	1	-	1	-	1	-
2008410	Handle for FLS15	2	1	2	1	2	1	2	1
2008650	Standard Case	1	1	1	1	1	1	1	1

FLS FLANGE SPREADER KIT

- Heavy duty case is more rugged and compact, ideal for offshore applications
- Weather proof gasket seal and pressure equalization valve
- Tighter product spacing for easier helicopter transport
- 15 metric ton wedge-driven spreader
- Jaws fully supported by wedge for excellent durability
- All kits are CE rated.



HYDRAULIC SPREADER KIT

FLS15 KIT (OFFSHORE CASE)

15 Metric Ton Capacity
700 bar/10,000 psi



*Spreader kit in various combinations available, all in a heavy duty cases; easy to transport and stock.

FLS15 KIT (OFFSHORE CASE)

Kit Components		Order No			
		FLS15-FSK	FLS15-FSK-ST	FLS15-MSK	FLS15-MSK-ST
Component	Description	Spreader kit Tandem, Serrated	Spreader kit Tandem, Stepped	Spreader only kit, Serrated	Spreader only kit, Stepped
FLS15	Spreader, Hydraulic	2	-	1	-
FLS15-ST	Spreader, Hydraulic Stepped	-	2	-	1
SB15	Aluminum Holding Block	2	2	1	1
P19L	Lightweight Hand Pump with Gauge	1	1	-	-
3000827	Manifold, 2 Needle Valve Assembly (Incl. 2 Gauges)	2	2	-	-
2008577	Heavy Duty Case, Large	1	1	-	-
3000832	Heavy Duty Case, Small	-	-	1	1

NUT SPLITTERS

HYDRAULIC - HNS

15 & 25 Ton Capacity
700 bar/10,000 psi



HNS150



HNS150A



HNS225

HNS HYDRAULIC NUT SPLITTER

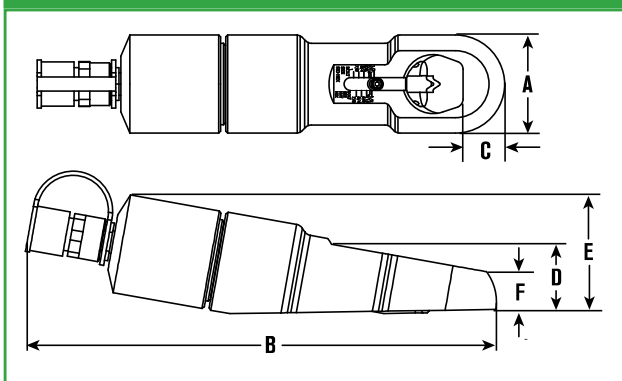
- “Dial-in” feature on HNS150 makes adjustment of splitter simple, without the worry of damaging the bolt
- Specially designed “tool steel” cutter blade penetrates the nut to the precise point where it cracks, stopping short of the bolt threads
- Nut splitter features a dramatically improved cutter blade with an 800% greater resistance to chipping and breaking over previous models
- All models feature a rugged one-piece cutting frame coupled to a heavy-duty hydraulic cylinder
- Compact size allows you to use it in confined areas where it will deliver enough force to split the toughest “fused” or rusted-on grade 2H nuts
- Simply split nut on one side, spin nut splitter 1/2 turn and make second cut on opposite side; nut separates into halves for easy removal
- Uses a standard 3/8" high flow coupler



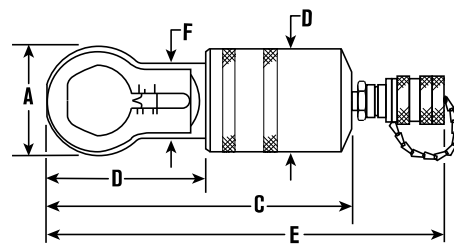
Align mark on cutter blade with scale.

Specifications and Dimensional Data

HNS150A



HNS150 & HNS225



Tool Model	A		B		C		D		E		F		HEAD THICKNESS		REPLACEMENT BLADE	TOOL Wt	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		kg	lb
HNS150	73	2.875	86	3.375	200	7.875	70	2.75	264	10.375	52	2.0625	25	1	308840	3.7	8.1
HNS150A	77	3.02	361	14.2	26	1.03	54	2.11	94	3.7	29	1.16	25	1	351985	7.2	15.8
HNS225	108	4.25	152	6	365	14.375	98	3.875	N/A	N/A	83	3.25	38	1.5	308022	13.2	29

CAPACITIES (by Nut Grade)

Order No.	2 or A in. hex	5 or B in hex	8 or C in hex	2H in hex
HNS150	1/2 - 1-1/2	1/2 - 1- 1/2	1/2 - 1-5/16	1/2 - 1-1/8
HNS150A	1/2 - 1-1/2	1/2 - 1-1/2	1/2 - 1-5/16	1/2 - 1-1/8
HNS225	1-1/8 - 2-1/4	1-1/8 - 2-1/4	1-1/8 - 2-1/4	1-1/8 - 1-11/16

HS HYDRAULIC SPREADERS

- Often used to position and align heavy pipes and flanges for easier bolting.
- Conforms to ASME B30.1 standard.
- High strength alloy steel forged upper and lower jaws on HS2000.
- Jaws are spring-return; retract automatically when pressure is released.
- Uses a standard 3/8" high flow coupler

HYDRAULIC SPREADERS

HS

1-1/2 Short Tons
700 bar/10,000 psi



HS2000
(Forged Steel)



HS3000
(High Grade Ductile Iron)

Specifications and Dimensional Data

HS2000 SPECIFICATIONS

Maximum Rated Capacity: 0.91 metric tons @ 690 bar (1 short ton @ 10,000 psi)

Maximum Spread: 101 mm (4")

Minimum Clearance Required: 14.3 mm (9/16")

Oil Required: 10.3 mL (0.63 in³)

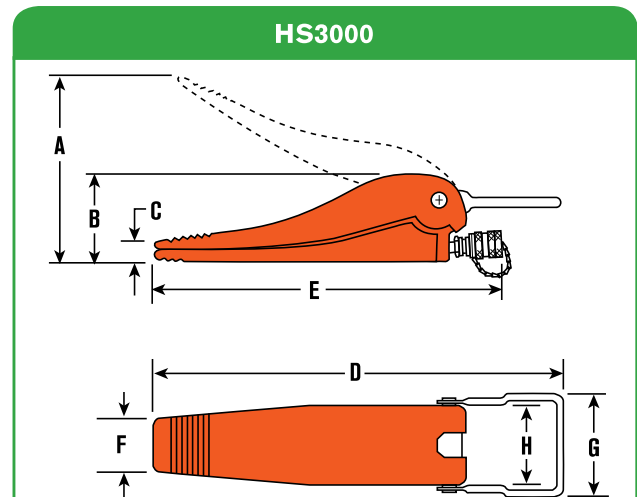
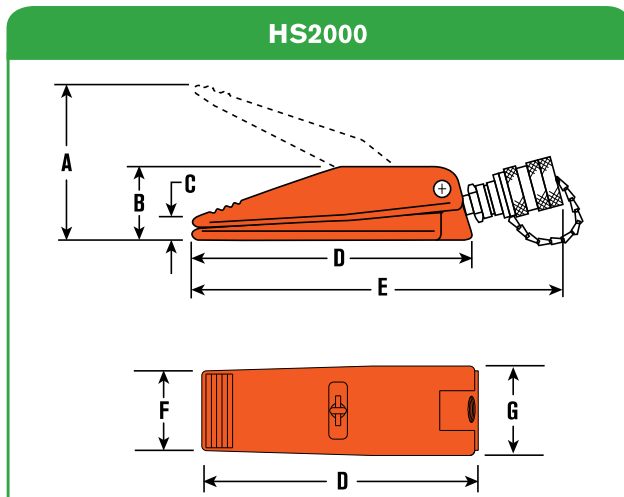
HS3000 SPECIFICATIONS

Maximum Rated Capacity: 1.36 metric tons @ 690 bar (1-1/2 short ton @ 10,000 psi)

Maximum Spread: 292 mm (11-1/2")

Minimum Clearance Required: 31.8 mm (1-1/4")

Oil Required: 57.4 mL (3.50 in³)



Order Number	Capacity metric ton (short ton)	A	B	C	D	E	F	G	H	Oil Capacity mL (cu in)	Min. Clearance Required mm (in)	Wt kg (lb)
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)			
HS2000	0.91 (1)	101 (4)	50.8 (2)	14.3 (9/16)	176 (6-15/16)	236.5 (9-5/16)	50.8 (2)	57.1 (2-1/4)	-	10.3 (0.63)	14.3 (9/16)	2.2 (4.8)
HS3000	1.36 (1-1/2)	292 (11-1/2)	108 (4-1/4)	30.2 (1-3/16)	511 (20-1/8)	450.9 (17-3/4)	57.1 (2-1/4)	142.9 (5-5/8)	92 (3-5/8)	57.4 (3.5)	31.8 (1-1/4)	10 (22)

Value(s) shown in short tons (2,000 lb). To convert to long tons, multiply by 0.893. To convert to metric tons, multiply by 0.907

PIPE FLANGE HYDRAULIC SPREADER - HFS

5 & 10 Ton Capacity
700 bar/10,000 psi

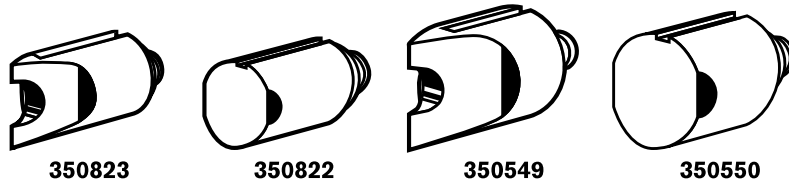


HFS3A

HFS PIPE FLANGE SPREADER

- You'll never again have to resort to "hammer and chisel" methods that waste time and effort. Flange spreaders should be used in pairs to provide even spreading force.
- Standard 60° wedge is suitable for most flanges; 30° "thin" and 60° "blunt" wedges are optional.
- The HFS3A is designed for applications where total thickness of flanges and max. spread gap is 3" or less and flange bolts are a min. of 11/16" dia.
- Use HFS6A if total thickness of flanges and max. spread gap is 6" or less, and flange bolts are a min. of 13/16" dia.
- Max working pressure 700 bar (10,000 psi)
- Uses a standard 3/8" high flow coupler

Specifications and Dimensional Data



Order No.	Capacity Metric tons Short tons	Standard Wedge Type	Optional Wedges		Min. Flange Opening			Max. Flange Opening			Combined Flange Opening mm in	Min. Pin Dia.	Wt lb kg
			30°	60°	60°	60°	30°	60°	60°	30°			
			Thin	Blunt	mm in	mm in	mm in	mm in	mm in	mm in			
HFS3A	4.5	60° Sharp	350823	350822	1,6	25,4	1,6	38,1	38,1	18,3	76,2	17,4	4,1
	5				1/16"	1"	1/16"	1-1/4"	1-1/4"	23/32"			
HFS6A	9	60° Sharp	350549	350550	1,6	38,1	1,6	50,8	50,8	24,6	152,4	20,6	8,2
	10				1/16"	1-1/2"	1/16"	2"	2"	31/32"			

Value(s) shown in short tons (2,000 lb). To convert to long tons, multiply by 0.893. To convert to metric tons, multiply by 0.907.

EHN TOP COLLAR HYDRAULIC NUT

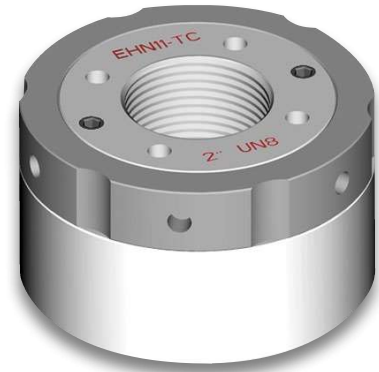
Our precision machined top collar hydraulic nuts offer a quick, accurate and cost effective solution to simultaneous tightening of multiple bolted joints.

In addition to standard features normally associated with hydraulic nuts, our system also provides the following benefits:

- Compact enough to fit the most confined spaces
- Maximum load generated at 1,500 bar (21,750 psi)
- Energized from either a hand operated or air driven pump
- Custom Hydraulic Nut designs available
- Alternative Bottom Collar and Shim type versions available
- Made to Order, Consult Factory

Note: Hydraulic Nuts will require minimum order quantity - consult factory for details.

HYDRAULIC NUT TOP COLLAR - EHN



Specifications and Dimensional Data

Tool Ref.	THREAD		INITIAL LOAD		HYDRAULIC AREA		NUT DIAM.		HEIGHT		STROKE	
	Metric	in	kN	Ton F	mm ²	in ²	mm	in	mm	in	mm	in
EHN1-TC	M20	3/4	180	18.07	1200	1.86	68	2.7	55	2.2	5	0.2
EHN2-TC	M22	7/8	180	18.07	1200	1.86	68	2.7	55	2.2	5	0.2
EHN3-TC	M24	1	195	19.57	1300	2.02	72	2.8	55	2.2	5	0.2
EHN4-TC	M27	1-1/8	210	21.08	1400	2.17	75	3.0	55	2.2	5	0.2
EHN5-TC	M33	1-1/4	250	25.09	1667	2.58	82	3.2	57	2.2	5	0.2
EHN6-TC	M36	1-3/8	300	30.11	2001	3.10	88	3.5	57	2.2	5	0.2
EHN7-TC	M39	1-1/2	340	34.12	2267	3.51	93	3.7	58	2.3	5	0.2
EHN8-TC	M42	1-5/8	400	40.15	2667	4.13	100	3.9	62	2.4	6	0.2
EHN9-TC	M45	1-3/4	460	46.17	3067	4.75	106	4.2	64	2.5	6	0.2
EHN10-TC	M48	1-7/8	500	50.18	3334	5.17	110	4.3	64	2.5	6	0.2
EHN11-TC	M52	2	560	56.20	3734	5.79	117	4.6	67	2.6	6	0.2
EHN12-TC	M56	2-1/4	720	72.26	4801	7.44	128	5.0	74	2.9	8	0.3
EHN13-TC	M64	2-1/2	900	90.33	6002	9.30	141	5.6	77	3.0	8	0.3
EHN14-TC	M68	2-3/4	1000	100.37	6668	10.34	150	5.9	78	3.1	8	0.3
EHN15-TC	M76	3	1200	120.44	8002	12.40	162	6.4	81	3.2	8	0.3
EHN16-TC	M80	3-1/4	1400	140.51	9336	14.47	174	6.9	87	3.4	10	0.4
EHN17-TC	M90	3-1/2	1600	160.59	10669	16.54	187	7.4	95	3.7	10	0.4
EHN18-TC	M95	3-3/4	1700	170.62	11336	17.57	194	7.6	102	4.0	10	0.4
EHN19-TC	M100	4	1900	190.70	12670	19.64	205	8.1	110	4.3	10	0.4
EHN20-TC	M110	4-1/2	2200	220.81	14671	22.74	223	8.8	120	4.7	10	0.4
EHN21-TC	M125	5	2400	240.88	16004	24.81	239	9.4	135	5.3	15	0.6
EHN22-TC	M140	5-1/2	2900	291.06	19338	29.97	261	10.3	145	5.7	15	0.6
EHN23-TC	M150	6	3400	341.24	22673	35.14	282	11.1	160	6.3	15	0.6

NOTE: EHN#-TC[®] is not a part number that can be ordered please contact factory for ordering information.