

# OTHER TOOLS

## HIGH PERFORMANCE HIGH FORCE HYDRAULICS

Page  
**ENS...48- $\langle ? \rangle$**   
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

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



**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 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 10,000 psi (700 bar) 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:

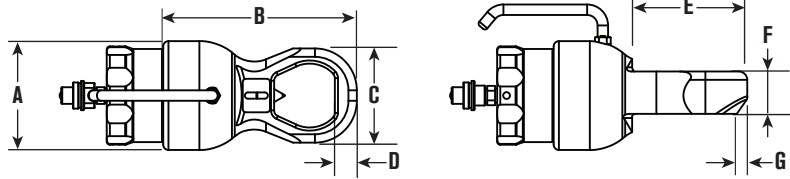
1. Use the table located on the next page to identify the nut you need to split and select the appropriate head.
2. Select a single or double acting cylinder. For subsea applications only select double acting cylinders.
3. Order extra cutting blades (optional).

### Accessory Ordering Information

| Order No.          | Description            |
|--------------------|------------------------|
| <b>ENSBL010001</b> | 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                | OPTIONAL              | Head                    | Bolt Dia.             | Nut A/F                 | Bolt Dia. | Nut A/F | A   |     | B   |      | C   |      | D    |     | E   |     | F     |     | G    |     | Wt   |       |      |      |
|-------------------------|-----------------------|-------------------------|-----------------------|-------------------------|-----------|---------|-----|-----|-----|------|-----|------|------|-----|-----|-----|-------|-----|------|-----|------|-------|------|------|
|                         |                       |                         | Imperial              | in                      | Metric    | mm      | mm  | in  | mm  | in   | mm  | in   | mm   | in  | mm  | in  | mm    | in  | mm   | in  | kg   | lb    |      |      |
| (ENS1)<br>ENSAS010001   | (ENS1)<br>ENSAS010002 | (ENS1-1)<br>ENSAS010004 | 3/4"                  | 1-1/4                   | M20       | 30      | 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  |      |      |
|                         |                       |                         | 7/8"                  | 1-7/16                  | M22       | 32      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 1"                    | 1-3/8                   | M24       | 36      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       |                         | M27       | 41      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | (ENS1-2)<br>ENSAS010003 | 3/4"                  | 1-1/4                   | M20       | 30      | 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  |      |      |
|                         |                       |                         | 7/8"                  | 1-7/16                  | M22       | 32      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 1"                    | 1-3/8                   | M24       | 36      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 1-1/8"                | 1-13/16                 | M27       | 41      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       | M30                     | 46        |         |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       | M33                     | 50        |         |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | (ENS2)<br>ENSAS020001   | (ENS2)<br>ENSAS020004 | (ENS2-1)<br>ENSAS020002 | 1-1/8"    | 1-13/16 | M30 | 46  | 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 |
|                         |                       |                         |                       |                         | 1-1/4"    | 2       | M33 | 50  |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
| 1-3/8"                  | 2-3/16                |                         |                       |                         | M36       | 55      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
| 1-1/2"                  | 2-3/8                 |                         |                       |                         | M39       | 60      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
| (ENS2-2)<br>ENSAS020003 | 1-1/8"                |                         |                       | 1-13/16                 | M30       | 46      | 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  |      |      |
|                         | 1-1/4"                |                         |                       | 2                       | M33       | 50      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         | 1-3/8"                |                         |                       | 2-3/16                  | M36       | 55      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         | 1-1/2"                |                         |                       | 2-3/8                   | M39       | 60      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       | M42                     | 65        |         |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       | M45                     | 70        |         |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
| (ENS3)<br>ENSAS030001   | (ENS3)<br>ENSAS030006 |                         |                       | (ENS3-1)<br>ENSAS030002 | 1-3/4"    | 2-3/4   | M45 | 70  | 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 |
|                         |                       |                         |                       |                         | 1-7/8"    | 2-15/16 | M48 | 75  |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | 2"                      | 3-1/8                 |                         | M52       | 80      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | (ENS3-2)<br>ENSAS030003 | 1-3/4"                | 2-3/4                   | M45       | 70      | 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  |      |      |
|                         |                       |                         | 1-7/8"                | 2-15/16                 | M48       | 75      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2"                    | 3-1/8                   | M52       | 80      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       | M56                     | 85        |         |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | (ENS3-3)<br>ENSAS030004 | 1-3/4"                | 2-3/4                   | M45       | 70      | 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  |      |      |
|                         |                       |                         | 1-7/8"                | 2-15/16                 | M48       | 75      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2"                    | 3-1/8                   | M52       | 80      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2-1/4"                | 3-1/2                   | M56       | 85      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       |                         | M60       | 90      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       |                         | M64       | 95      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | (ENS3-4)<br>ENSAS030005 | 1-3/4"                | 2-3/4                   | M45       | 70      | 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  |      |      |
|                         |                       |                         | 1-7/8"                | 2-15/16                 | M48       | 75      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2"                    | 3-1/8                   | M52       | 80      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2-1/4"                | 3-1/2                   | M56       | 85      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2-1/2"                | 3-7/8                   | M60       | 90      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 2-3/4"                | 4-1/4                   | M64       | 95      |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         |                       |                         | M68       | 100     |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | M72                   | 105                     |           |         |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
| (ENS4)<br>ENSAS040001   | (ENS4)<br>ENSAS040004 | (ENS4-1)<br>ENSAS040002 | 2-3/4"                | 4-1/4                   | M76       | 110     | 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 |      |      |
|                         |                       |                         | 3"                    | 4-5/8                   | M80       | 115     |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       | (ENS4-2)<br>ENSAS040003 | 2-3/4"                | 4-1/4                   | M76       | 110     | 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 |      |      |
|                         |                       |                         | 3"                    | 4-5/8                   | M80       | 115     |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 3-1/4"                | 5                       | M85       | 120     |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |
|                         |                       |                         | 3-1/2"                | 5-3/8                   | M90       | 130     |     |     |     |      |     |      |      |     |     |     |       |     |      |     |      |       |      |      |

Order a cylinder and a head to make complete nut splitter. Cylinders are interchangeable with heads within specific size ranges. Each are sold separately.

## 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.

- 33,000 pound (15 metric ton) 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 .2 inches (5 mm) required for entry
- Very high strength due to special alloy used
- Compact and lightweight design - only 11.28 inches (287 mm) long at a weight of 7 pounds (3.2 kg)
- 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 10,000 psi (700 bar).

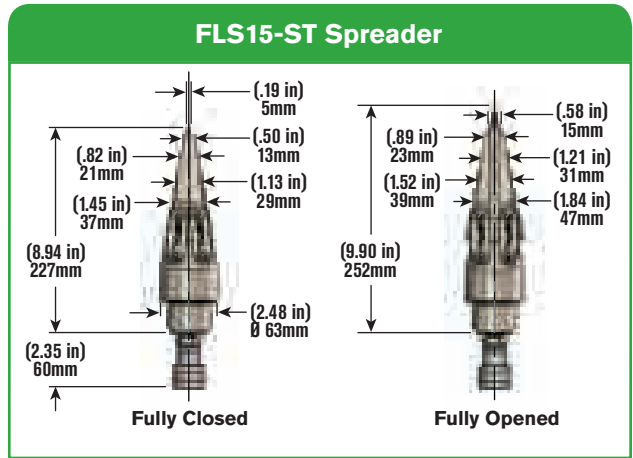
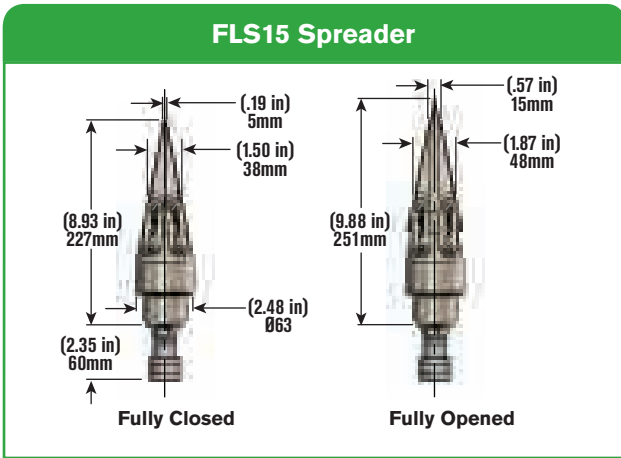
### Spreading Force:

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

### Typical Applications:

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

## Specifications and Dimensional Data



| Order No.         | Maximum Spreading Force        | Minimum Tip Clearance | Maximum Tip Spread | Spreader Type | Oil Capacity         | Weight            | Maximum Operating Pressure |
|-------------------|--------------------------------|-----------------------|--------------------|---------------|----------------------|-------------------|----------------------------|
| FLS15 or FLS15-ST | 33,000 Pounds (15 Metric Tons) | .197 Inches (5 mm)    | .59 Inches (15 mm) | Hydraulic     | 1 Cubic Inch (16 cc) | 7 Pounds (3.2 kg) | 10,000 psi (700 bar)       |

## 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 (Americas & Asia) | Part Number (Europe)        |
|---------------------------------------|-------------------------------|-----------------------------|
| Two Speed, Single-Acting Hand Pump    | P19L                          | P19L                        |
| Hydraulic Hose Assembly               | 9764                          | 9764E                       |
| Pressure Gauge                        | 9040 (Primary Units = psi)    | 9040E (Primary Units = bar) |
| 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            |
| 9765E          | Hose   | 1         | 1         | 1            | 1            | 1         | 1         | 1            | 1            |
| 9767E          | Hose   | 2         | -         | 2            | -            | 2         | -         | 2            | -            |

## 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                          |
| 9765E          | Hose   | 1                             | 1                            | -                           | -                          |
| 9767E          | Hose   | 2                             | 2                            | -                           | -                          |

# NUT SPLITTERS

## HYDRAULIC - HNS

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



HNS150



HNS150A



HNS225

## HNS HYDRAULIC NUT SPLITTER

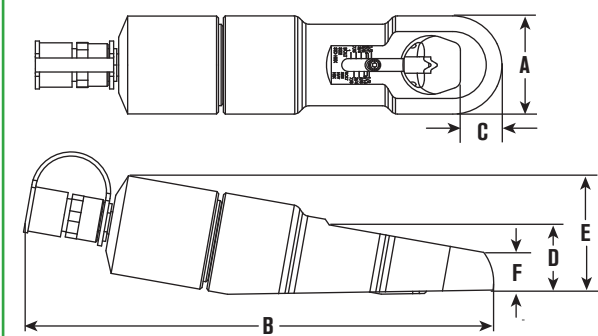
- “Dial-in” feature on HNS150 makes adjustment of splitter simple, without the worry of damaging the bolt
- Specially designed “tool steel” cutter blade penetrates the nut to the precise point where it cracks, stopping short of the bolt threads
- Nut splitter features a dramatically improved cutter blade 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



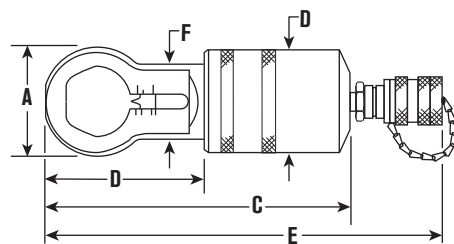
Align mark on cutter blade with scale.

### Specifications and Dimensional Data

HNS150A



HNS150 & HNS225



| Tool Model | A     | B     | C      | D     | E      | F      | HEAD THICKNESS | REPLACEMENT BLADE | TOOL Wt |
|------------|-------|-------|--------|-------|--------|--------|----------------|-------------------|---------|
| HNS150     | 2.875 | 3.375 | 7.875  | 2.75  | 10.375 | 2.0625 | 1              | 308840            | 8.1     |
| HNS150A    | 3.02  | 14.2  | 1.03   | 2.11  | 3.7    | 1.16   | 1              | 351985            | 15.8    |
| HNS225     | 4.25  | 6     | 14.375 | 3.875 | N/A    | 3.25   | 1.5            | 308022            | 29      |

#### CAPACITIES (by Nut Grade)

| Order No. | 2 or A<br>in. hex | 5 or B<br>in. hex | 8 or C<br>in. hex | 2H<br>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 in<sup>3</sup>)

#### HS3000 SPECIFICATIONS

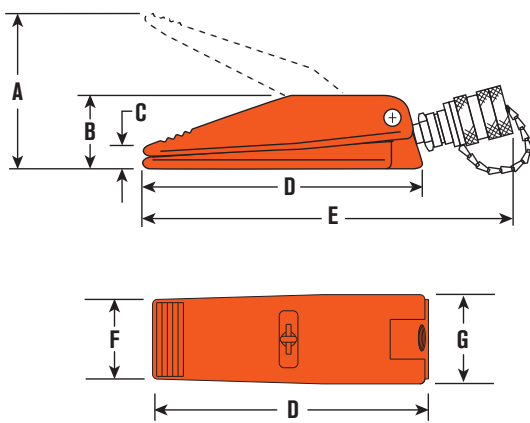
**Maximum Rated Capacity:** 1.36 metric tons @ 690 bar (1-1/2 short ton @ 10,000 psi)

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

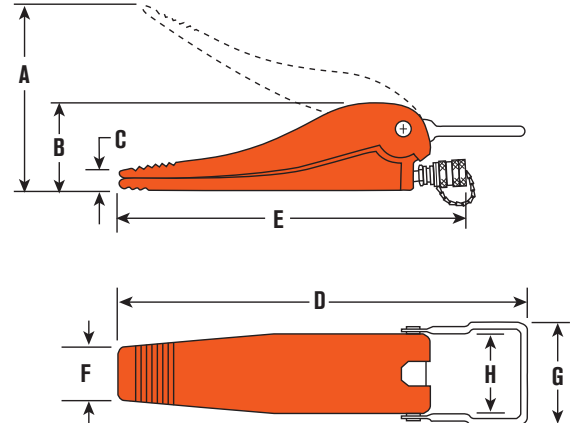
Minimum Clearance Required: 31.8 mm (1-1/4")

Oil Required: 57.4 mL (3.50 in<sup>3</sup>)

#### HS2000



#### HS3000



| Order Number | Capacity               | A            | B           | C             | D             | E              | F            | G             | H          | Oil Capacity | Min. Clearance Required | Wt        |
|--------------|------------------------|--------------|-------------|---------------|---------------|----------------|--------------|---------------|------------|--------------|-------------------------|-----------|
|              | metric ton (short ton) | mm (in)      | mm (in)     | mm (in)       | mm (in)       | mm (in)        | mm (in)      | mm (in)       | mm (in)    | mL (cu in)   | mm (in)                 | kg (lb)   |
| 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

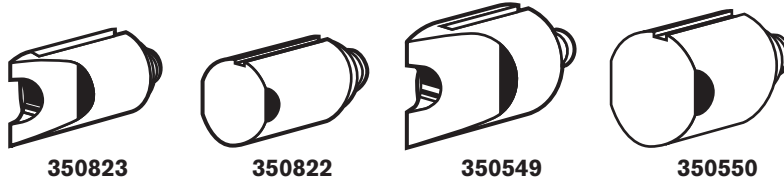


HFS3A

## 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<br>Metric tons<br>Short tons | Standard Wedge Type | Optional Wedges |        | Min. Flange Opening |          |          | Max. Flange Opening |          |          | Combined Flange Opening<br>mm<br>in | Min.<br>Pin Dia. | Wt<br>lb<br>kg |
|-----------|---------------------------------------|---------------------|-----------------|--------|---------------------|----------|----------|---------------------|----------|----------|-------------------------------------|------------------|----------------|
|           |                                       |                     | 30°             | 60°    | 60°                 | 60°      | 30°      | 60°                 | 60°      | 30°      |                                     |                  |                |
|           |                                       |                     | Thin            | Blunt  | mm<br>in            | mm<br>in | mm<br>in | mm<br>in            | mm<br>in | mm<br>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

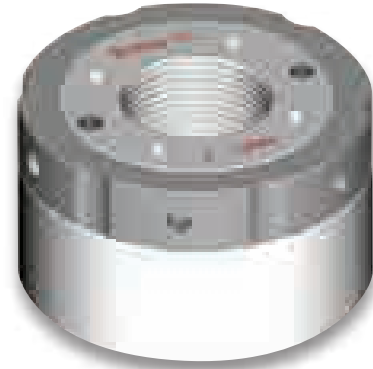
Our precision machined top collar hydraulic nuts offer a quick, accurate and cost effective solution to simultaneous tightening of multiple bolted joints.

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

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.<br>mm | HEIGHT<br>mm | STROKE<br>mm |
|-----------|--------|-------|--------------|--------|-----------------|-----------------|-----------------|--------------|--------------|
|           | Metric | in    | kN           | Ton F  | mm <sup>2</sup> | in <sup>2</sup> |                 |              |              |
| EHN1-TC   | M20    | 3/4   | 180          | 18.07  | 1200            | 1.86            | 68              | 55           | 5            |
| EHN2-TC   | M22    | 7/8   | 180          | 18.07  | 1200            | 1.86            | 68              | 55           | 5            |
| EHN3-TC   | M24    | 1     | 195          | 19.57  | 1300            | 2.02            | 72              | 55           | 5            |
| EHN4-TC   | M27    | 1-1/8 | 210          | 21.08  | 1400            | 2.17            | 75              | 55           | 5            |
| EHN5-TC   | M33    | 1-1/4 | 250          | 25.09  | 1667            | 2.58            | 82              | 57           | 5            |
| EHN6-TC   | M36    | 1-3/8 | 300          | 30.11  | 2001            | 3.10            | 88              | 57           | 5            |
| EHN7-TC   | M39    | 1-1/2 | 340          | 34.12  | 2267            | 3.51            | 93              | 58           | 5            |
| EHN8-TC   | M42    | 1-5/8 | 400          | 40.15  | 2667            | 4.13            | 100             | 62           | 6            |
| EHN9-TC   | M45    | 1-3/4 | 460          | 46.17  | 3067            | 4.75            | 106             | 64           | 6            |
| EHN10-TC  | M48    | 1-7/8 | 500          | 50.18  | 3334            | 5.17            | 110             | 64           | 6            |
| EHN11-TC  | M52    | 2     | 560          | 56.20  | 3734            | 5.79            | 117             | 67           | 6            |
| EHN12-TC  | M56    | 2-1/4 | 720          | 72.26  | 4801            | 7.44            | 128             | 74           | 8            |
| EHN13-TC  | M64    | 2-1/2 | 900          | 90.33  | 6002            | 9.30            | 141             | 77           | 8            |
| EHN14-TC  | M68    | 2-3/4 | 1000         | 100.37 | 6668            | 10.34           | 150             | 78           | 8            |
| EHN15-TC  | M76    | 3     | 1200         | 120.44 | 8002            | 12.40           | 162             | 81           | 8            |
| EHN16-TC  | M80    | 3-1/4 | 1400         | 140.51 | 9336            | 14.47           | 174             | 87           | 10           |
| EHN17-TC  | M90    | 3-1/2 | 1600         | 160.59 | 10669           | 16.54           | 187             | 95           | 10           |
| EHN18-TC  | M95    | 3-3/4 | 1700         | 170.62 | 11336           | 17.57           | 194             | 102          | 10           |
| EHN19-TC  | M100   | 4     | 1900         | 190.70 | 12670           | 19.64           | 205             | 110          | 10           |
| EHN20-TC  | M110   | 4-1/2 | 2200         | 220.81 | 14671           | 22.74           | 223             | 120          | 10           |
| EHN21-TC  | M125   | 5     | 2400         | 240.88 | 16004           | 24.81           | 239             | 135          | 15           |
| EHN22-TC  | M140   | 5-1/2 | 2900         | 291.06 | 19338           | 29.97           | 261             | 145          | 15           |
| EHN23-TC  | M150   | 6     | 3400         | 341.24 | 22673           | 35.14           | 282             | 160          | 15           |

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