

OPERATION MANUAL

16" & 20" Stuffing Box Sheave Brackets

Manufactured by Wireline Technologies, Inc.



Serial Number _____

Introduction

This manual explains the use and care of 16" and 20" stuffing box sheave brackets manufactured by Wireline Technologies, Inc. These sheaves feature a patented, spring-loaded, top entry shroud for easy loading and unloading. See figure 1. This system includes two line retainers that lower into the groove of the wheel and entrap the line prevent line jumping. See figure 2. They are available in two model types. The standard aluminum model is shown in figure 3. The stainless steel model is shown in figure 4. Both models are available in a 16" and a 20" size. The stainless steel brackets are stronger and, consequently, have higher safe working loads. Please read and become familiar with all of the information in this manual before using this equipment.



Top Entry Shroud
Figure 1



Line
Retainer
Figure 2



Aluminum Model (16" shown)
Figure 3



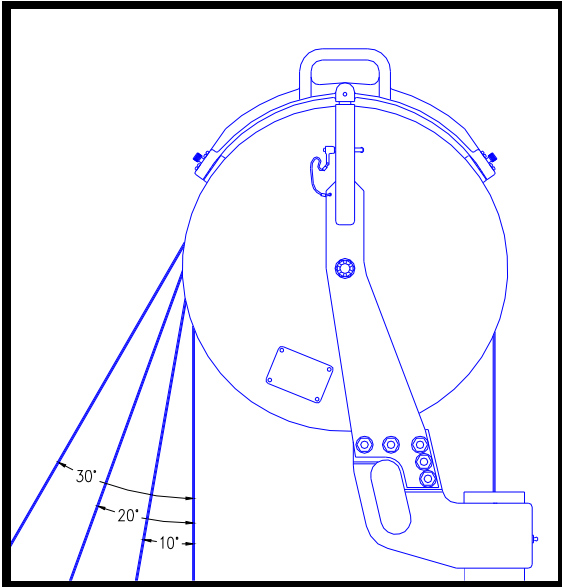
Stainless Model (20" shown)
Figure 4

Warnings

- Read entire manual before operating this equipment.
- If proper procedures are not followed, loads may disengage.
- A falling load can cause serious injury or death.
- Never use this product for hoisting personnel.
- Always anchor the sheave via bearings in the base, never by way of the side plates or any ancillary equipment.
- Never apply more force than the Safe Working Load (SWL) listed on the affixed tag.
- The listed Safe Working Load is for the sheave assembly; the safe line tension will be less.
- Attachment to other equipment with lower SWL will reduce the allowable load.
- Always make sure the assemblies are properly maintained and properly rigged.

Safe Working Load

The listed safe working loads (SWL) for WTI stuffing box sheave brackets is for 180-degree pulls. In this case the safe line pull will be 50% of the safe working load. If pulling at an angle away from the assembly the safe line pull will vary. See figure 5. Angles are measured from the stuffing box not necessarily from vertical. Consult table 1 below to determine the safe line pull. Never exceed the SWL, unless special precautions are taken in accordance with your company's policy. These precautions should include, but are not limited to, clearing the rig floor of all personnel. If the SWL is exceeded, the sheave should be re-certified before it can safely be placed back in service.



| Angle | Aluminum | |
|----------|-----------------------|-----------------------|
| | 16" | 20" |
| 0 | 3,000 lbs 1,360 kg | 3,000 lbs 1,360 kg |
| Up to 10 | 3,000 lbs 1360 kg | 2,600 lbs 1,180 kg |
| 10 to 20 | 2,850 lbs 1290 kg | 2,350 lbs 1,060 kg |
| 20 to 30 | 2,600 lbs 1,180 kg | 2,150 lbs 975 kg |
| Over 30 | 2,300 lbs 1,040 kg | 1,950 lbs 880 kg |

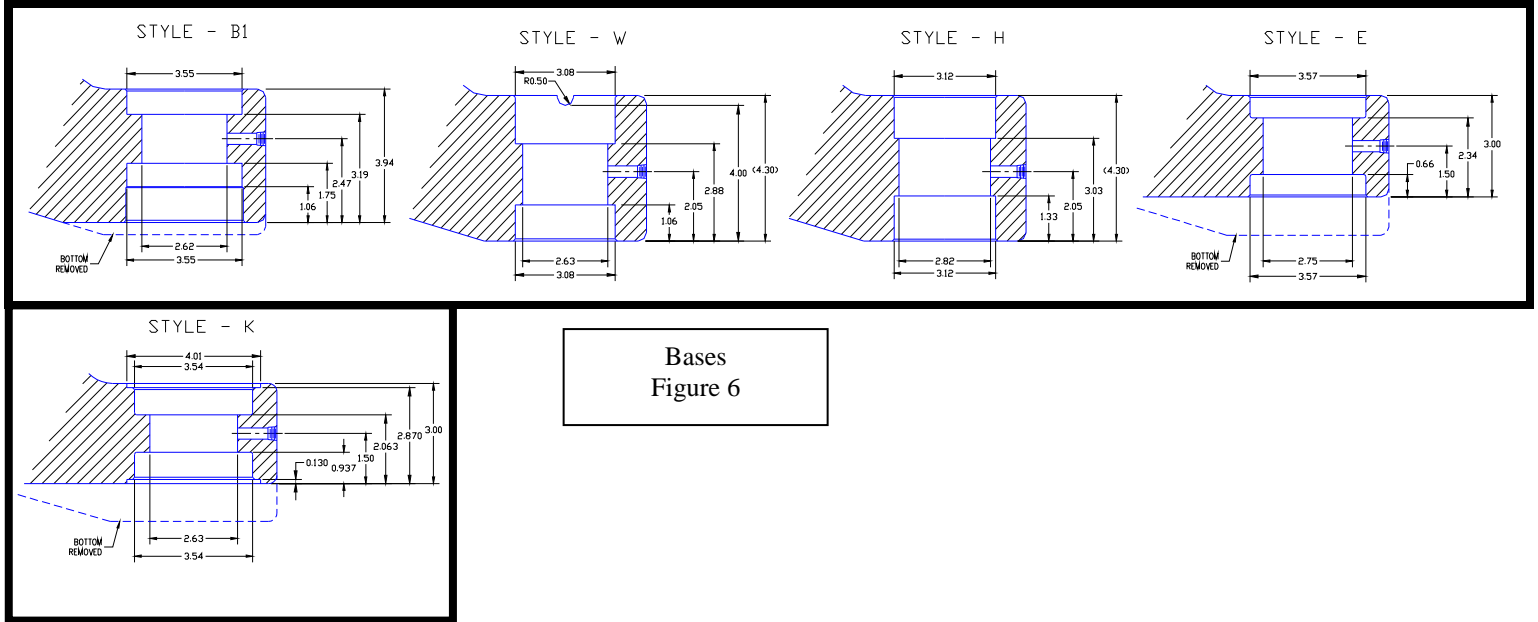
| Angle | Stainless Steel | |
|----------|-----------------------|-----------------------|
| | 16" | 20" |
| 0 | 5,000 lbs 2,260 kg | 5,000 lbs 2,260 kg |
| Up to 10 | 5,000 lbs 2,260 kg | 4,350 lbs 1970 kg |
| 10 to 20 | 4,750 lbs 2150 kg | 3,900 lbs 1,770 kg |
| 20 to 30 | 4,300 lbs 1,950 kg | 3,600 lbs 1,630 kg |
| Over 30 | 3,800 lbs 1,720 kg | 3,300 lbs 1,500 kg |

Angle of
Line Pull
Figure 5

Safe Line Pull
Table 1

Base Options

Four base options are available to fit different stuffing boxes. These options are shown in figures 6 below. The B1 Base fits the Bowen stuffing box. The W base fits the Western Pressure Control stuffing box. The H base fits the Halliburton/Otis stuffing box design. And, the E base fits the Elmar stuffing box. Each base comes with the appropriate bearings to fit the respective stuffing box. Other bases are available upon request.



Loading

The part numbers listed refer to figure 11 and table 2 on pages 9 and 10.

1. Remove ball-lock pin (7). See figure 6.

!Caution! Take care not to be struck by the shroud as the spring lifts it away from the wheel.

2. Load the line through the opening in the shroud system and into the groove of the wheel (35). See figure 8.

3. Push the shroud (1) back down and make sure the line is below the line retainers (4). See figure 9.

4. Reinstall the ball-lock pin and make sure it is secure.



Remove Ball-Lock
Figure 7



Load Line
Figure 8



Line Below Retainers
Figure 9

Daily Inspection Checklist

Verify the following. If any discrepancies are noted, remove the sheave from service until repairs are completed. Numbers listed refer to figure 11 and table 2 (pgs. 9-10).

- ❑ All structural components (20, 24,25,35,36) are not bent, cracked, or otherwise damaged.
- ❑ Shroud (1) moves up and down freely.
- ❑ Ball-lock pin (6) removes and installs easily.
- ❑ Manufacturing label (32) is in place and readable.
- ❑ Inspection label (39) is in place on the rear plate and stamped with an inspection date no greater than one year old.
- ❑ Spiral pins (17) are in place and securely retain the slotted nuts (18) on the axle shaft (25).
- ❑ Wheel (35) rotates freely and smoothly, check for any grinding or sticking, indicating damaged bearings.
- ❑ Retaining pin (5) is securely retaining the long slide (13).

Preventative Maintenance

WTI suggests the following service. Numbers listed refer to figure 11 and table 2 (pgs. 9-10).

- ❑ The wheel bearings (29) are sealed and only need annual re-packing. Use lithium based No.2 EPHT grease, such as Conoco's Tacna® RX. This service can be performed at the same time as the annual recertification. See page 7.
- ❑ Monthly, squirt some light machine oil on both slides (13,38) and the ball-lock pin (6).

Recertification and Repairs

WTI highly recommends yearly recertification of all stuffing box sheave brackets. Most companies mandate annual recertifications so this should not be overlooked. A tag on the rear of the assembly, shown in figure 10, provides a visible place to stamp certification dates. When a new sheave bracket is placed into service, stamp the current date into this tag. When the date becomes a year old, the assembly should be re-certified. Each time it is re-certified a new date will be stamped in this tag. Upon completion of a repair or recertification, note the information in the log in the back of this manual. Re-certification involves the following:

1. Proof testing.
2. Disassembly.
3. Cleaning
4. NDT inspection of all of the load-bearing components.
5. Replacement or repair of any damaged or worn components.
6. Updating components for safety and easier use.
7. Packing the bearings with grease.
8. Re-assembly.
9. Pre-loading the bearings.
10. Documentation of all changes.
11. Final Inspection.
12. Issuance of a new certification.

| | |
|--------------------------|----|
| WIRELINE TECHNOLOGIES | |
| SERIAL NUMBER | |
| SAFE WORKING LOAD | CE |
| ,000 LBS. | |
| INSPECTION DATES | |
| | |
| | |
| | |

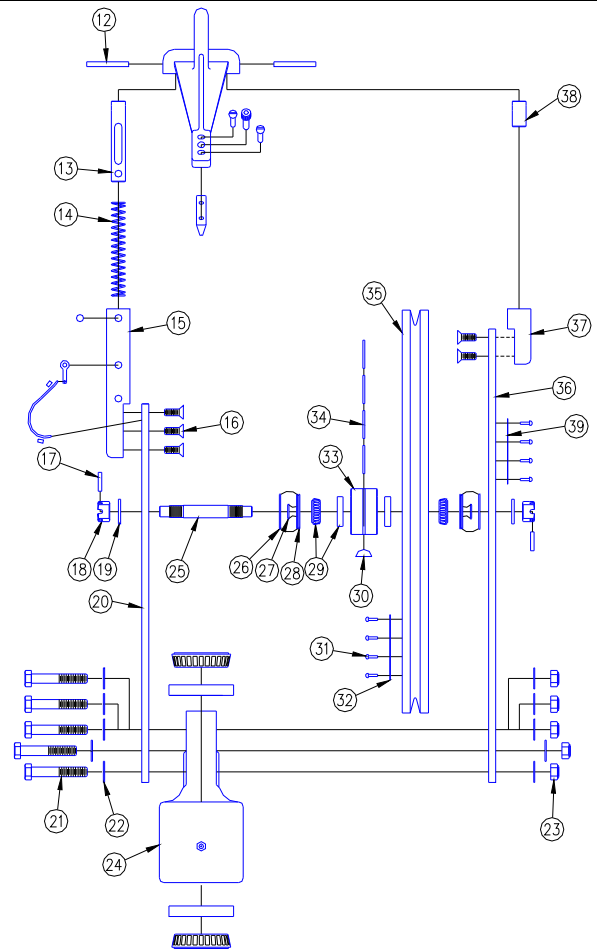
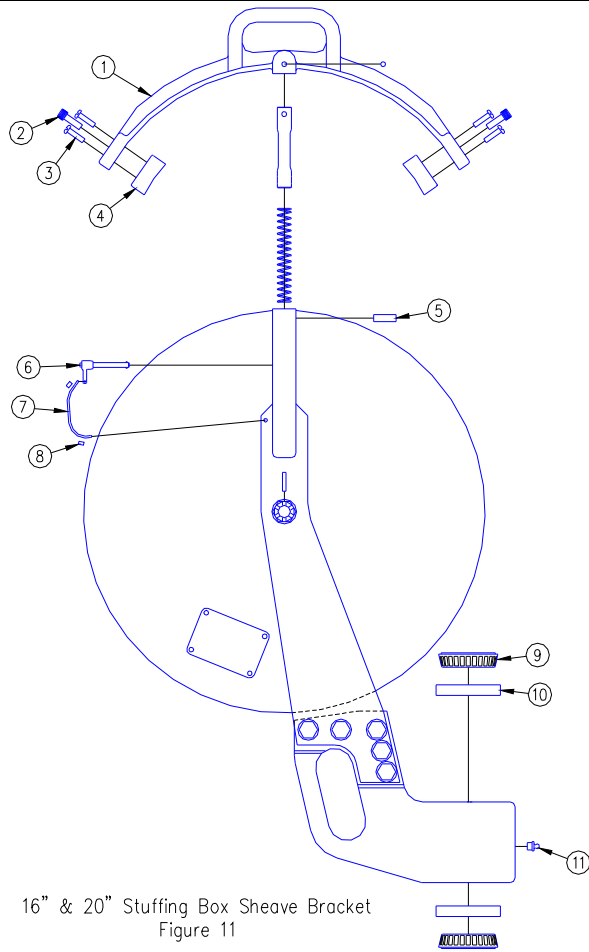
Inspection Tag
Figure 10

Recertification and/or repairs can be done one of three ways.

- Send the assembly to Wireline Technologies, Inc. Please call to make arrangements.
- Send the assembly to an authorized service center. Call to determine the nearest location.
- Determine if your company will allow recertification on site. If so, WTI can supply you with the training and documents needed.

Call Wireline Technologies Inc. (800) 743-2831. Use the drawings in figure 11 on page 9 to identify parts. The numbers in the circles correspond to the item numbers in table 2 on page 10.

Notes



| ITEM | PART NUMBER | DESCRIPTION | QTY | MATERIAL | ITEM | PART NUMBER | DESCRIPTION | QTY | MATERIAL |
|------|-------------|----------------------------------|-----|----------------|------|--------------|--------------------------------------|-----|----------------|
| 1 | SB-16-101-M | 16" SHROUD | 1 | A-356 | 23 | SB-138 | NYLOC NUT 1/2"-13 | 5 | 18-8 S/S |
| OR | SB-20-101-M | 20" SHROUD | 1 | A-356 | 24 | SBA-130M-B1 | BASE FOR B1 STYLE - ALUMINUM | 1 | A-356 |
| 2 | SB-121 | SOC HD CAP SC 3/8"-24 X 1" | 2 | 18-8 S/S | OR | SBA-130M-W | BASE FOR W STYLE - ALUMINUM | 1 | A-356 |
| 3 | SB-103 | PAN HD SLOT M SC 1/4"-28 X 1" | 4 | 18-8 S/S | OR | SBA-130M-H | BASE FOR H STYLE - ALUMINUM | 1 | A-356 |
| 4 | SB-104 | LINE RETAINER | 2 | 6061-T6, ANOD. | OR | SBA-130M-E | BASE FOR E STYLE - ALUMINUM | 1 | A-356 |
| 5 | SB-105 | RETAINING PIN 3/8" X 1.25" | 1 | 18-8 S/S | OR | SBS-130M-B1 | BASE FOR B1 STYLE - STAINLESS | 1 | 17-4PH S/S |
| 6 | SB-111 | BALL LOCK PIN 3/8" X 1.25" | 1 | 17-4 PH S/S | OR | SBS-130M-W | BASE FOR W STYLE - STAINLESS | 1 | 17-4PH S/S |
| 7 | RS-1031 | LANYARD 3/32" X 10.5" | 1 | 18-8 S/S | OR | SBS-130M-H | BASE FOR H STYLE - STAINLESS | 1 | 17-4PH S/S |
| 8 | RS-1032 | LOOP FERULE 3/32" | 2 | COPPER | OR | SBS-130M-E | BASE FOR E STYLE - STAINLESS | 1 | 17-4PH S/S |
| 9 | SB-123-B1 | BEARING CONE FOR B1 STYLE BASE | 2 | ALLOY STEEL | 25 | SB/SL-116 | AXLE SHAFT | 1 | 303 S/S |
| OR | SB-123-W | BEARING CONE FOR W STYLE BASE | 2 | ALLOY STEEL | 26 | SB/SL-140 | OUTER O-RING - 16"/20" | 2 | BUNA N |
| OR | SB-123-H | BEARING CONE FOR H STYLE BASE | 2 | ALLOY STEEL | 27 | SB/SL-141 | INNER O-RING - 16"/20" | 2 | BUNA N |
| OR | SB-123-E | BEARING CONE FOR E STYLE BASE | 2 | ALLOY STEEL | 28 | SB/SL-109 | O-RING SEAT | 2 | 6061-T6, ANOD. |
| 10 | SB-122-B1 | BEARING CUP FOR B1 STYLE BASE | 2 | ALLOY STEEL | 29 | SB/SL-142 | BEARING CUP & CONE - 16"/20" | 2 | ALLOY STEEL |
| OR | SB-122-W | BEARING CUP FOR W STYLE BASE | 2 | ALLOY STEEL | 30 | RS-1010 | WOODRUF KEY #807 | 1 | 316 S/S |
| OR | SB-122-H | BEARING CUP FOR H STYLE BASE | 2 | ALLOY STEEL | 31 | RS-1071 | DRIVE SCREW 1/8" X 3/8" | 8 | 18-8 S/S |
| OR | SB-122-E | BEARING CUP FOR E STYLE BASE | 2 | ALLOY STEEL | 32 | SBA-16-1077 | MANUFACTURING LABEL - 16" ALUM. | 1 | LAM. PAPER |
| 11 | RS-1039 | GREASE FITTING 1/8" NPT | 1 | STEEL, ZINC PL | OR | SBA-20-1077 | MANUFACTURING LABEL - 20" ALUM. | 1 | LAM. PAPER |
| 12 | RS-1272 | SPIRAL PIN 1/4" X 1 1/4" | 2 | 420 S/S | OR | SBS-16-1077 | MANUFACTURING LABEL - 16" S/S | 1 | LAM. PAPER |
| 13 | SB-120 | LONG SLIDE | 1 | 303 S/S | OR | SBS-20-1077 | MANUFACTURING LABEL - 20" S/S | 1 | LAM. PAPER |
| 14 | SB-102 | SPRING | 1 | 302 S/S | 33 | SB/SL-114 | HUB | 1 | 6061-T6, ANOD. |
| 15 | SB-131 | LONG OUTER TUBE | 1 | 303 S/S | 34 | SB/SL-139 | RETAINING CLIP 3/32" X 1/8" X 1 1/2" | 1 | ULTEM 1000 |
| 16 | SB-135 | FLAT HD SOC M SC 3/8"-16 X 1" | 5 | 18-8 S/S | 35 | SB/SL-16-113 | 16" WHEEL (-XX FOR LINE SIZE) | 1 | NYLON W/ MoS2 |
| 17 | SB/SL-106 | SPIRAL PIN 3/16" X 1" | 2 | 420 S/S | OR | SB/SL-20-113 | 20" WHEEL (-XX FOR LINE SIZE) | 1 | NYLON W/ MoS2 |
| 18 | SB/SL-108 | SLOTTED NUT 5/8"-18 | 2 | 18-8 S/S | 36 | SBA-16-134 | LONG SIDE PLATE - 16" ALUMINUM | 1 | 6061-T6, ANOD. |
| 19 | SB/SL-107 | FLAT WASHER 5/8" | 2 | 18-8 S/S | OR | SBA-20-134 | LONG SIDE PLATE - 20" ALUMINUM | 1 | 6061-T6, ANOD. |
| 20 | SBA-16-133 | SHORT SIDE PLATE - 16" ALUMINUM | 1 | 6061-T6, ANOD. | OR | SBS-16-134 | LONG SIDE PLATE - 16" STAINLESS | 1 | 304 S/S |
| OR | SBA-20-133 | SHORT SIDE PLATE - 20" ALUMINUM | 1 | 6061-T6, ANOD. | OR | SBS-20-134 | LONG SIDE PLATE - 20" STAINLESS | 1 | 304 S/S |
| OR | SBS-16-133 | SHORT SIDE PLATE - 16" STAINLESS | 1 | 304 S/S | 37 | SB-132 | SHORT OUTER TUBE | 1 | 303 S/S |
| OR | SBS-20-133 | SHORT SIDE PLATE - 20" STAINLESS | 1 | 304 S/S | 38 | SB-119 | SHORT SLIDE | 1 | 303 S/S |
| 21 | SB-136 | HEX HD CAP SC 1/2"-13 X 3.25" | 5 | 18-8 S/S | 39 | RS-1279 | WTI INSPECTION LABEL - SQUARE | 1 | AL |
| 22 | SB-137 | FLAT WASHER 1/2" | 10 | 18-8 S/S | | | | | |

Table 2. Bill of Materials

| Date | Recert | Repair | Performed by: | Notes |
|------|--------------------------|--------------------------|---------------|-------|
| | <input type="checkbox"/> | <input type="checkbox"/> | | |
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Warranty

For a period of one year from the date of purchase, Wireline Technologies, Inc., will repair or replace, at its option, any 16” or 20” stuffing box sheave bracket of its manufacture that fails because of a defect in materials or manufacture, or which fails to conform to any implied warranty not excluded herein. This warranty does not cover damages caused by abuse, misuse, neglect, or overloading; and does not cover any incidental damages caused by a failure of this product.

Notes

Notes

EC Declaration of Conformity


The following equipment:

P/N- _____

S/N _____

Date _____

Complies with the essential requirements of The European Union
Machinery Directive 98/37/EC.



George Vent (V.P. Quality)

Wireline
Technologies



2140 North Redwood Road - #60

Salt Lake City, UT 84116 - USA

www.wtisheave.com

(800) 743-2831