

# ASSEMBLY INSTRUCTIONS

## TABLE OF CONTENTS:

Introduction  
Pg. 2

Safety Precautions  
Pg. 3 - Pg. 4

Assembly Instructions  
Pg. 5 - Pg. 9

SBU-400 Exploded View Diagram  
Pg. 10

SHS-410 Exploded View Diagram  
Pg. 11

SLS-420 Exploded View Diagram  
Pg. 12

Decal Placement  
Pg. 13

Decal Reference  
Pg. 14

Warranty  
Back Page

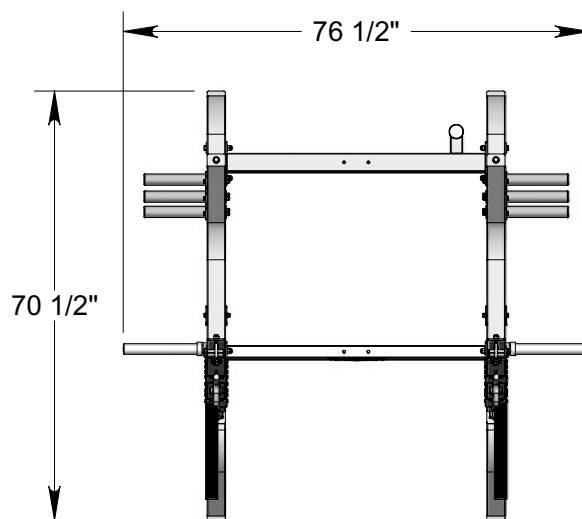


Revision Date 05-10-06

## Smith-Half Cage Series

Includes Assembly for:

- SBU-400**  
Base Unit Kit
- SHC-410**  
Half Cage Conversion Kit
- SLS-420**  
Linear Bearing Press System Kit



L 70 1/2" W 76 1/2" H 82 1/2"



America's Premier Exercise Equipment



### About the Smith-Half Cage Series

Congratulations on your new purchase of the Smith-Half Cage Series. This gym is capable of a variety of different exercises, as well-as, smooth and user-friendly adjustment features. In addition, this gym has been designed to meet the needs and performance requirements for a suitable home exercise machine. We hope you are completely satisfied with this product and wish you many years of enjoyment.

### TuffStuff Equipment

This Tuffstuff product has been built to precise quality standards and has been carefully packaged to ensure that damage will not occur during shipment. The Home Lifetime Warranty and signature indicating final inspection has been conducted by our line foreman, is an expression of our confidence in the completeness, the materials, and workmanship of this product.

### Warranty

SEE A COPY OF WARRANTY ON BACK PAGE.

### Registration Card

To avoid unnecessary delays in warranty service and to insure that a permanent record of your purchase is on file with our factory, be sure to complete the warranty registration card and send it to TuffStuff Fitness Equipment today.

### Specifications

	SBU-400	SHC-410	SLS-420
1. Maximum Wt. Capacity	N/A	400 lbs.	300 lbs.
2. Total Machine Weight	220 lbs.	40 lbs.	80 lbs.
3. Footprint (LWH)	- See Front Cover		

**Note:** Due to continuing product improvements, specifications and designs are subject to change without notice.

### Assembly Notes

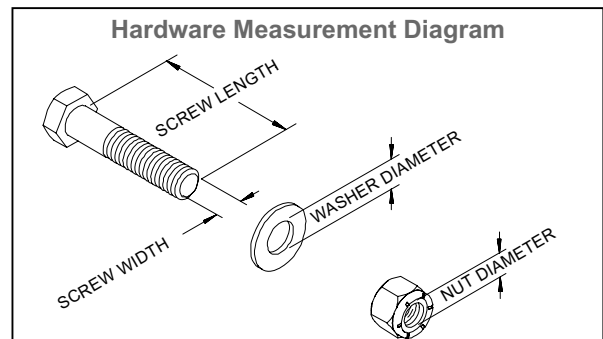
1. Read and follow each step of this Assembly Instruction Manual in sequence. Do not skip ahead, as it will result in an improper assembly or in having to disassemble parts later.

### Prior to the Assembly of the Smith-Half Series

1. We advise you to consult your local TuffStuff retailer if you should have a question or problem regarding the proper assembly of this unit.
2. Consider the complete surface area of the Smith-Half Cage Series. Use the overhead view located on the front page for designing your layout before assembling. Once the Smith-Half Cage Series has been fully assembled it will be heavy and difficult to move, therefore you should assemble the unit in the area where it is to be used upon completion.
3. It is recommended that another person assist you with the assembly of this unit.
4. Neatly organize and identify all parts according to the Parts List and the Exploded View Diagrams.

### Tool Requirements

1. One 3/4" combination wrench
2. One 9/16" combination wrench
3. One ratchet
4. One 3/4" socket
5. One 9/16" socket
6. One rubber mallet
7. Measuring tape
8. Utility knife

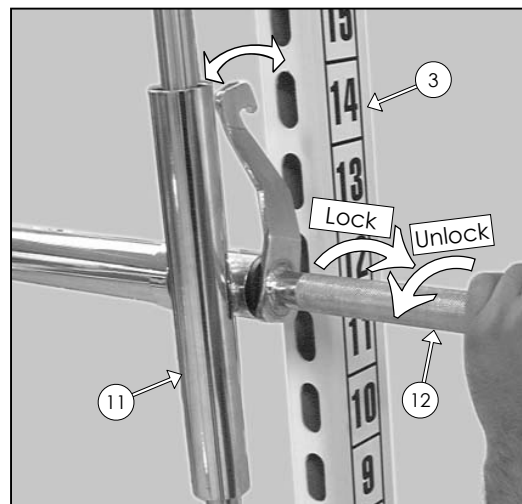


# Safety Precautions

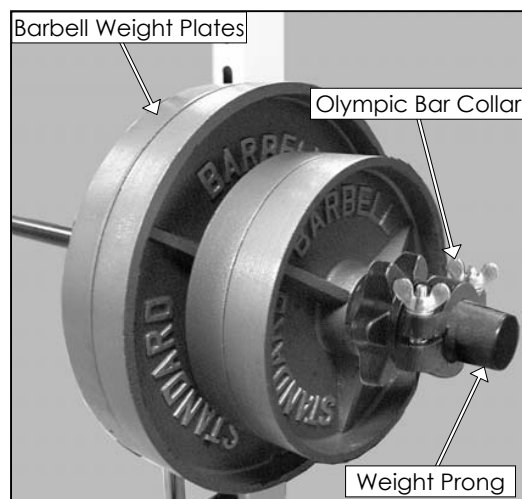
## Safety First

Regardless of how enthusiastic you may be about getting on your equipment and exercising, take the time to ensure that your safety is not jeopardized. A moment's lack of attention can result in an accident, as can failure to observe certain simple safety precautions.

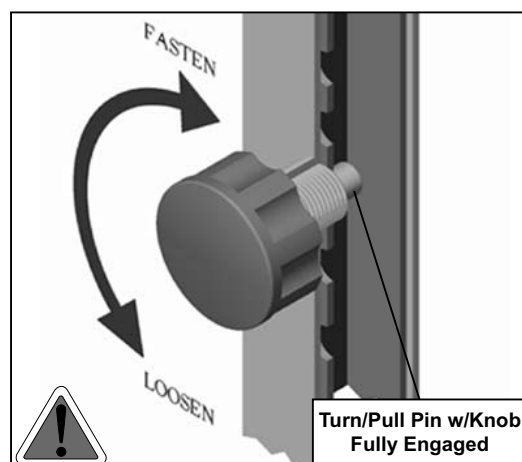
1. Read, study and understand the Assembly Instructions and all the warning labels on this product. Furthermore, it is recommended to familiarize yourself and others with the proper operation and workout recommendations for this TuffStuff product prior to use. Some of this information can be obtained in this Assembly Instructions, as well-as from your local TuffStuff Retailer.
2. It is imperative that you retain this Assembly Instructions and be sure all warning labels are legible and intact. Replacement of the Assembly Instructions and labels are available from your local TuffStuff Retailer.
3. Consult with your physician before beginning any exercise program.
4. Use proper discretion when children are present.
5. Keep hands, limbs, loose clothing and long hair well out of the way of moving parts.
6. Do not attempt to lift more weight than you can control safely.
7. Inspect the Smith-Half Cage for any sign of wear on parts, hardware becoming loose or cracks on welds. If a Problem is found **do not use or allow the machine to be used** until defective part is repaired or replaced.
8. The **Press Bar (#12)** has a swivel locking mechanism that allows you to safely lock out the **Press Bar (#12)** at virtually any setting. See **Fig. A**.
9. If you are adding or storing weight plates on the **Olympic Adaptors (#10)**, do not over-load them. Allow enough space for weight collars. See **Fig. B**
10. Pay special attention to the Turn/ Pull Pins w/Knob (#134) located on the **Bar Holders (#9)** and the **Bar Safety Spotters (#7, #8)**. Be sure they are fully engaged into the selectorized holes of the **Front Uprights (#3)**. Refer to **Fig. C** for further illustration.



**Fig. A** Illustration above depicts the Press Bar (#12) locking mechanism.

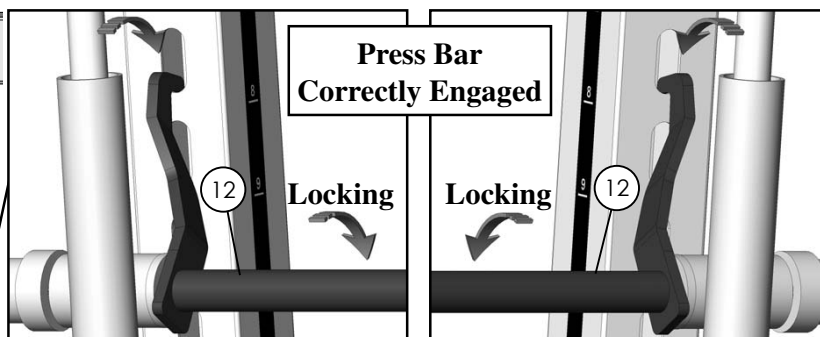


**Fig. B** **Caution:** Use collars to prevent the weight plates from falling off the Olympic Adaptors (#10).

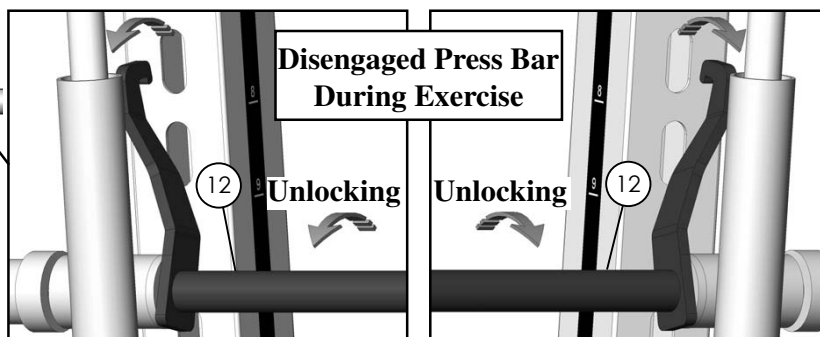


**Fig. C** **Caution:** Check that all Turn/Pull Pins w/ Knob (#134) to be fully engaged into the selected holes of the Front Uprights (#3).

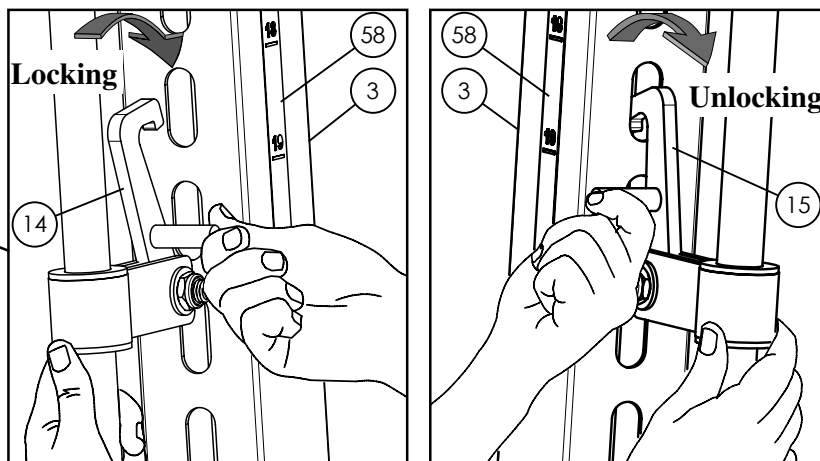
# Safety Precautions



**11. DANGER:** Once the unit is completely assembled take the time to ensure that the unit is assembled correctly square and perpendicular. Pay special attention to the Press Bar (#12) making sure both hooks engage uniformly and completely into each locking position. If both of the Press Bar Hooks are not engaging uniformly into the receptacle holes, it will be necessary to loosen some frame hardware then re-align the frame and re-tighten the hardware. If Problem persists, **Do Not Use the Machine** and contact your TuffStuff Retailer.




**12.** The illustrations above depict the Press Bar disengaged setting which is used during exercise.



**13. DANGER:** The Safety Spotter Hooks (#14, #15) prevent the Press Bar from being lowered below required point and avoid getting crushed under the Press Bar (#12) if the weight is too heavy to control. Use the Decal-numbers (#58) on the Front Uprights (#3) to ensure that the Safety Spotter Hooks (#14,#15) are set to an equal adjustment setting (same height). Before you add weight plates to the Press Bar (#12), you **must** first set-up the Safety Spotter Hooks (#14,#15) for the required exercise. It is recommended that you test the desired setting without weight plates on the Press Bar (#12) to make sure the Safety Spotter Hooks (#14,#15) are set to the appropriate exercise setting.

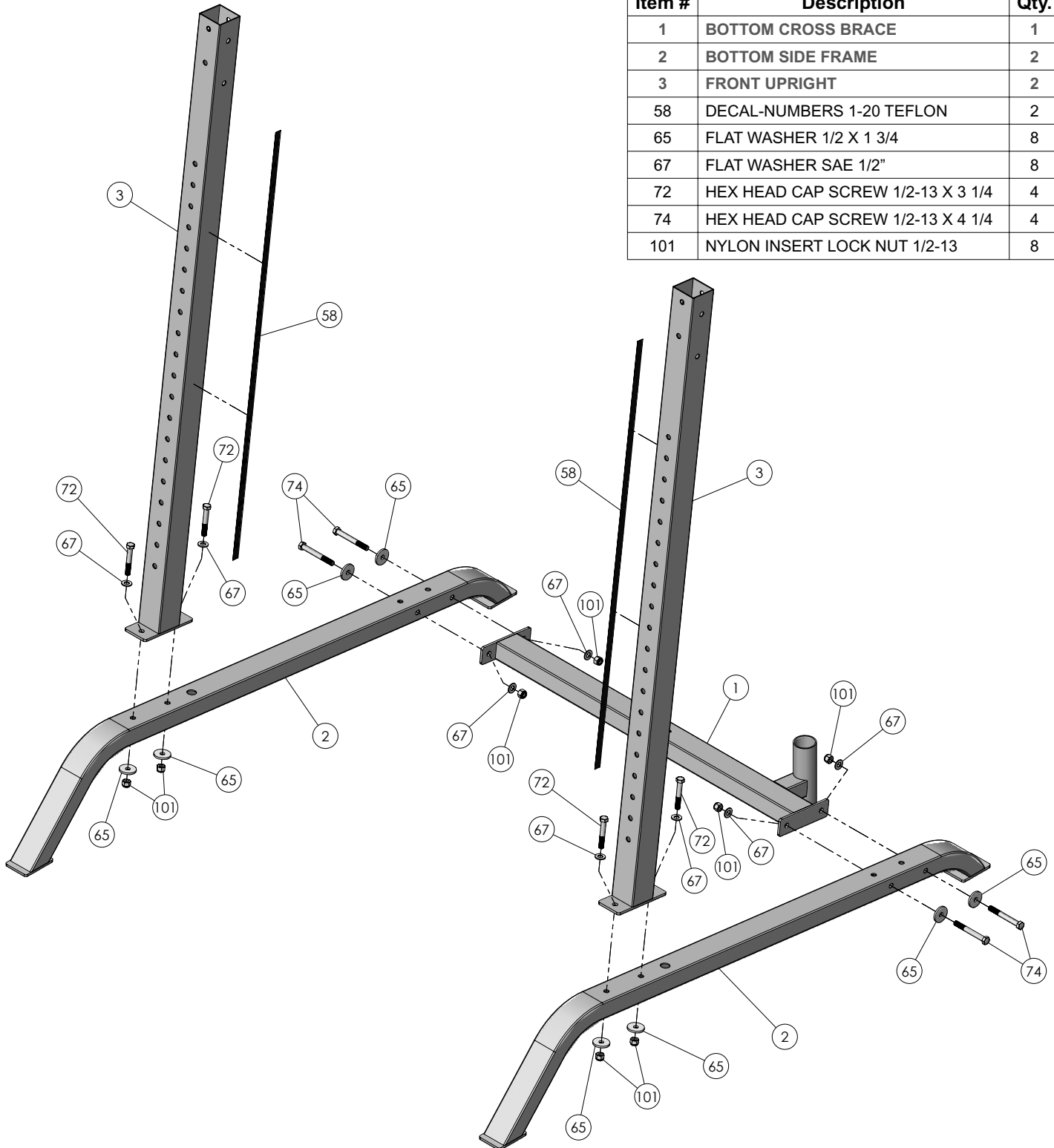
## Step 1 Assembling Base Unit

- A. Locate the two **Bottom Side Frames (#2)** and attach them to the **Bottom Cross Brace (#1)** using hardware shown.
- B. Attach the two **Front Uprights (#3)** to the two **Bottom Side Frames (#2)** using hardware shown.

 **Note:** Make sure to assemble the **Front Uprights (#3)** with the oval hole pattern towards the back of the Unit, and the **Decal-Numbers (#58)** towards the inside of the Unit.

### Assembly List

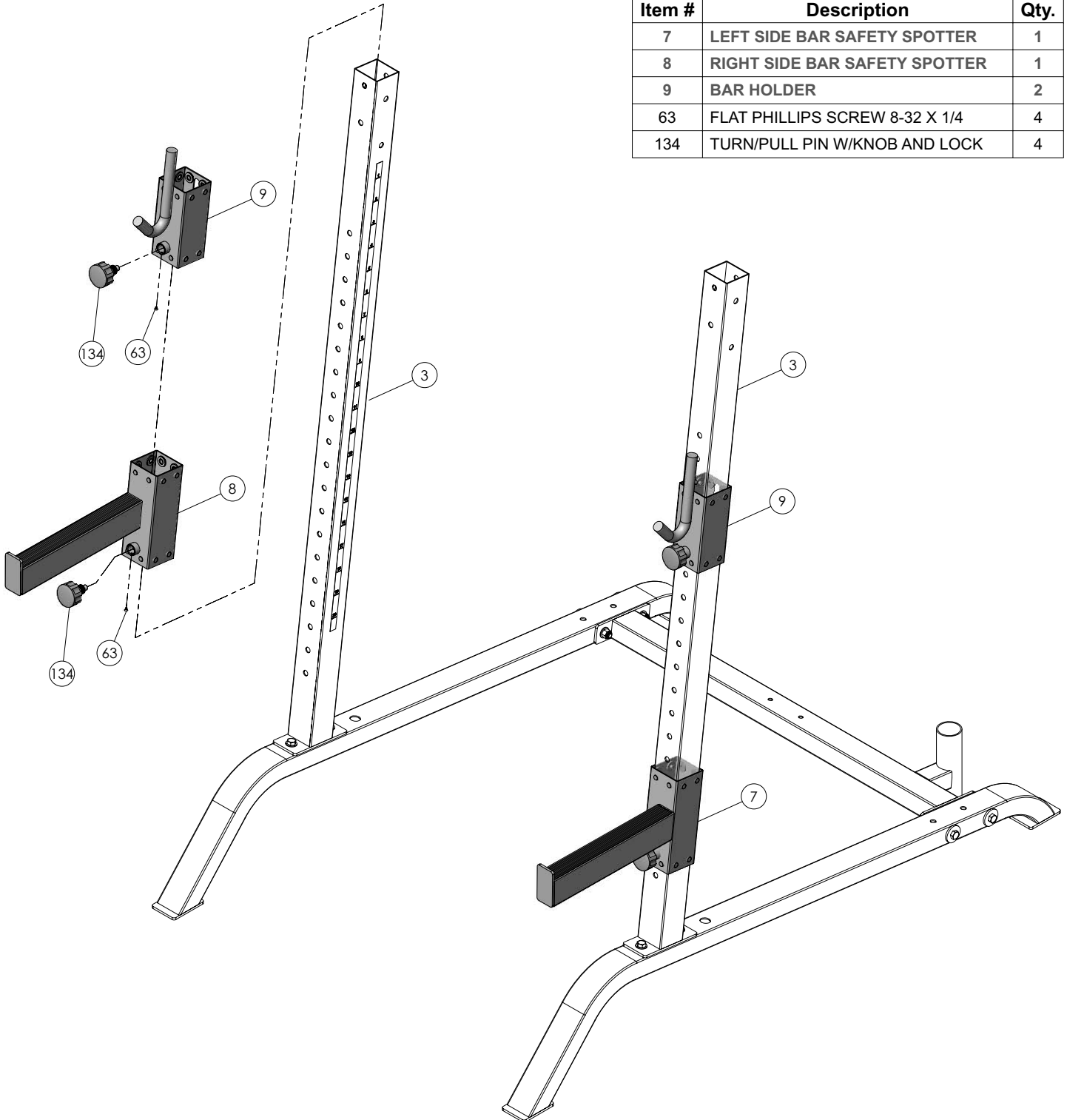
Item #	Description	Qty.
1	BOTTOM CROSS BRACE	1
2	BOTTOM SIDE FRAME	2
3	FRONT UPRIGHT	2
58	DECAL-NUMBERS 1-20 TEFLON	2
65	FLAT WASHER 1/2 X 1 3/4	8
67	FLAT WASHER SAE 1/2"	8
72	HEX HEAD CAP SCREW 1/2-13 X 3 1/4	4
74	HEX HEAD CAP SCREW 1/2-13 X 4 1/4	4
101	NYLON INSERT LOCK NUT 1/2-13	8



## Step 2 Assembling the Half Cage Conversion Kit (SHC-410)

- A. Slide the two Bar Safety Spotters (#7, #8) onto the Front Uprights (#3).
- B. Slide the two Bar Holders (#9) onto the Front Uprights (#4).

Assembly List		
Item #	Description	Qty.
7	LEFT SIDE BAR SAFETY SPOTTER	1
8	RIGHT SIDE BAR SAFETY SPOTTER	1
9	BAR HOLDER	2
63	FLAT PHILLIPS SCREW 8-32 X 1/4	4
134	TURN/PULL PIN W/KNOB AND LOCK	4



### Step 3 Assembling the Press Bar (SLS-420)

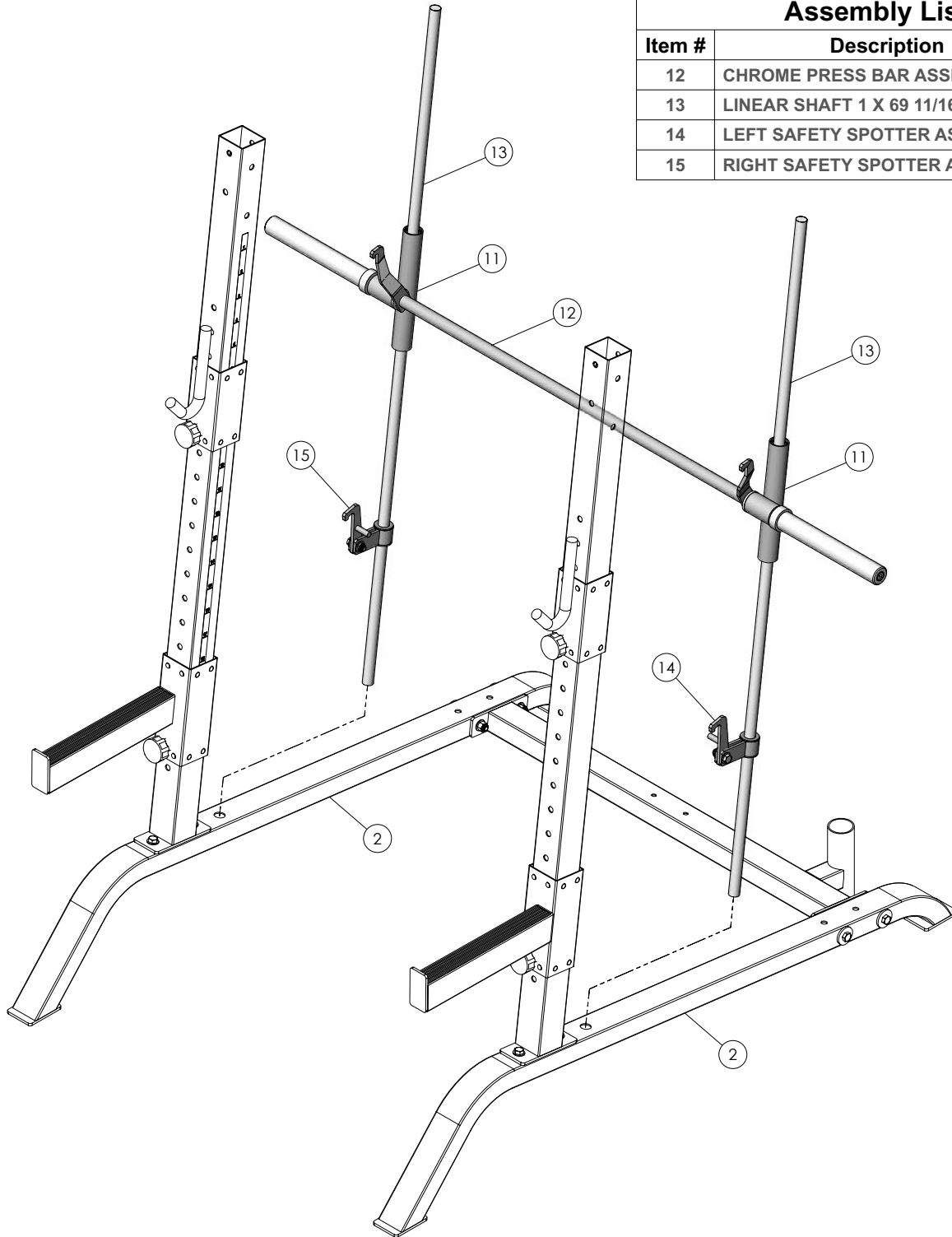
- A. Insert the Linear Shafts 1 X 69 11/16 (#13) into the receptacles of the Bottom Side Frames (#2).
- B. Insert the Safety Spotter Assemblies (#14, #15) onto the Linear Shafts (#13).



**Caution:** It is strongly recommended to use another person in assisting with the following assembly.

- C. Align the Chrome Press Bar Housings (#11) with the Linear Shafts (#13) and carefully begin sliding the Chrome Press Bar Assembly (#12) onto the Linear Shafts (#13).

Assembly List		
Item #	Description	Qty.
12	CHROME PRESS BAR ASSEMBLY	1
13	LINEAR SHAFT 1 X 69 11/16	2
14	LEFT SAFETY SPOTTER ASSEMBLY	1
15	RIGHT SAFETY SPOTTER ASSEMBLY	1



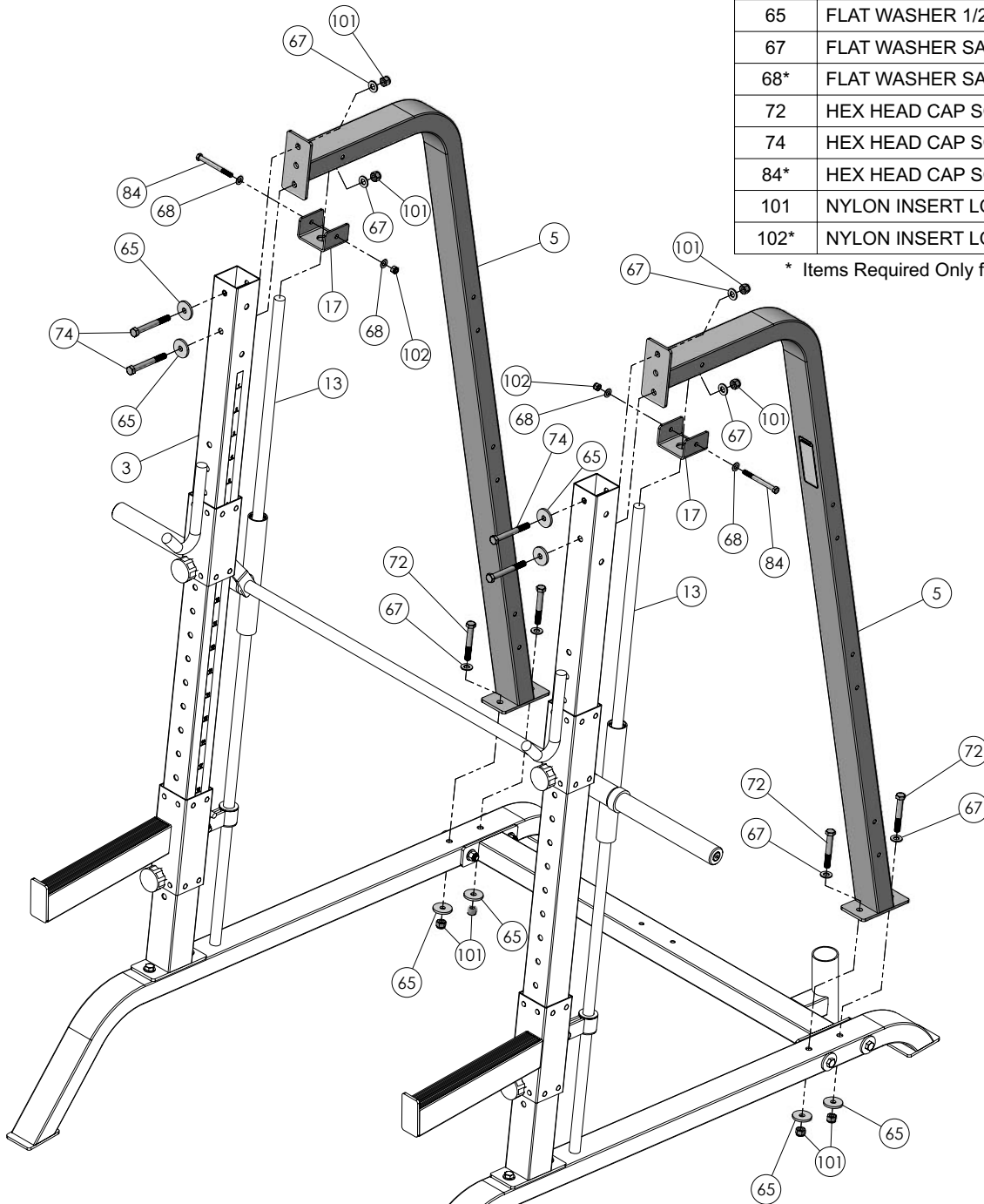
## Step 4 Assembling the Rear Side Supports

- A. Attach the two Shaft Retainer Brackets (#17) to the Linear Shafts (#13).
- B. Affix the two Rear Side Supports (#5) to the two Bottom Side Frames (#2) using hardware shown.
- C. Affix the two Rear Side Supports (#5) to the two Front Uprights (#3) using hardware shown.
- D. Secure the two Shaft Retainers Brackets (#17) along with the two confined Linear Shafts (#13) to the Rear Side Supports (#5) using hardware shown.

### Assembly List

Item #	Description	Qty.
5	REAR SIDE SUPPORT	2
17*	SHAFT RETAINER BRACKET	2
65	FLAT WASHER 1/2 X 1 3/4	8
67	FLAT WASHER SAE 1/2"	8
68*	FLAT WASHER SAE 3/8"	4
72	HEX HEAD CAP SCREW 1/2-13 X 3 1/4	4
74	HEX HEAD CAP SCREW 1/2-13 X 4 1/4	4
84*	HEX HEAD CAP SCREW 3/8-16 X 4	2
101	NYLON INSERT LOCK NUT 1/2-13	8
102*	NYLON INSERT LOCK NUT 3/8-16	2

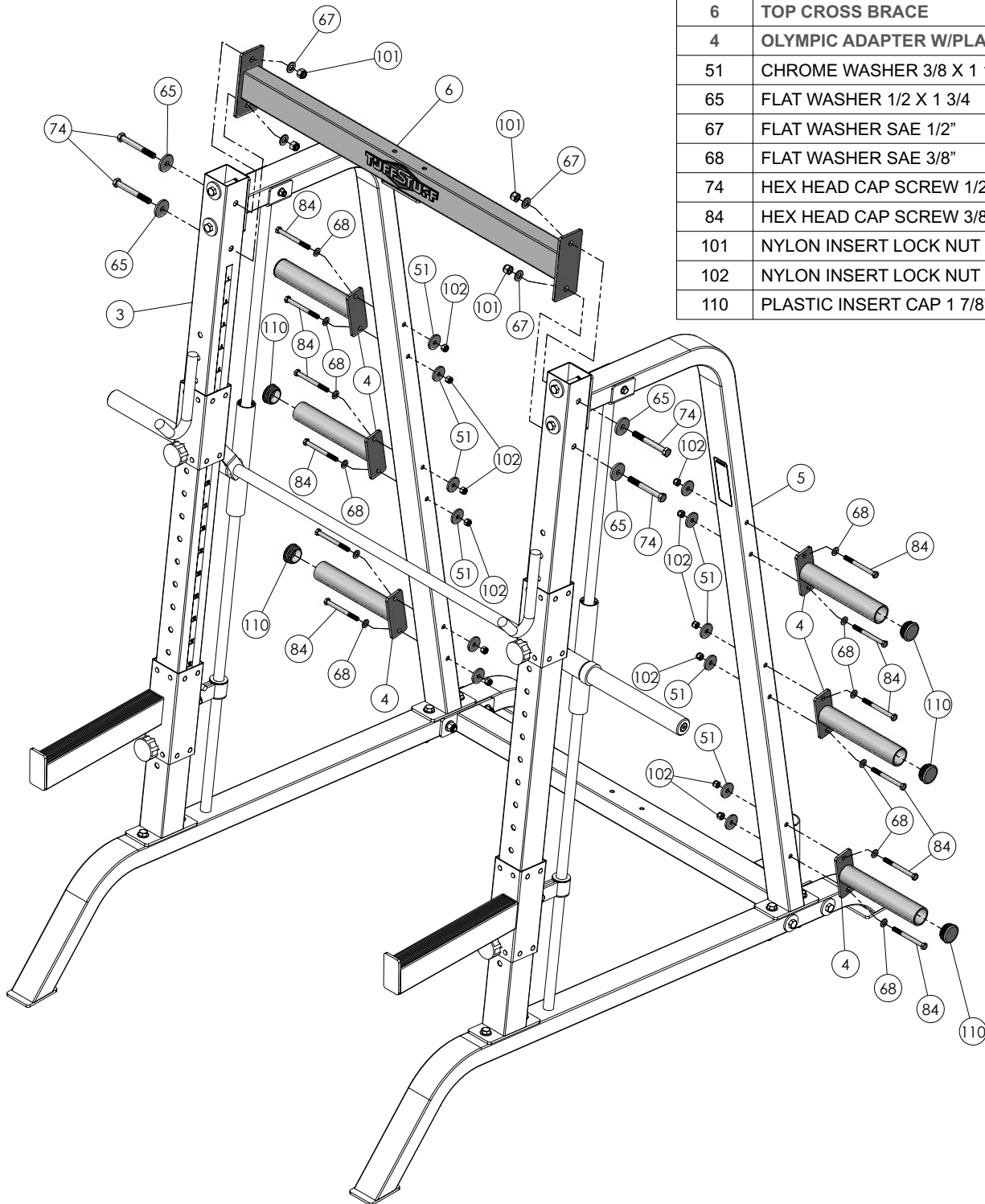
\* Items Required Only for **SLS-420**





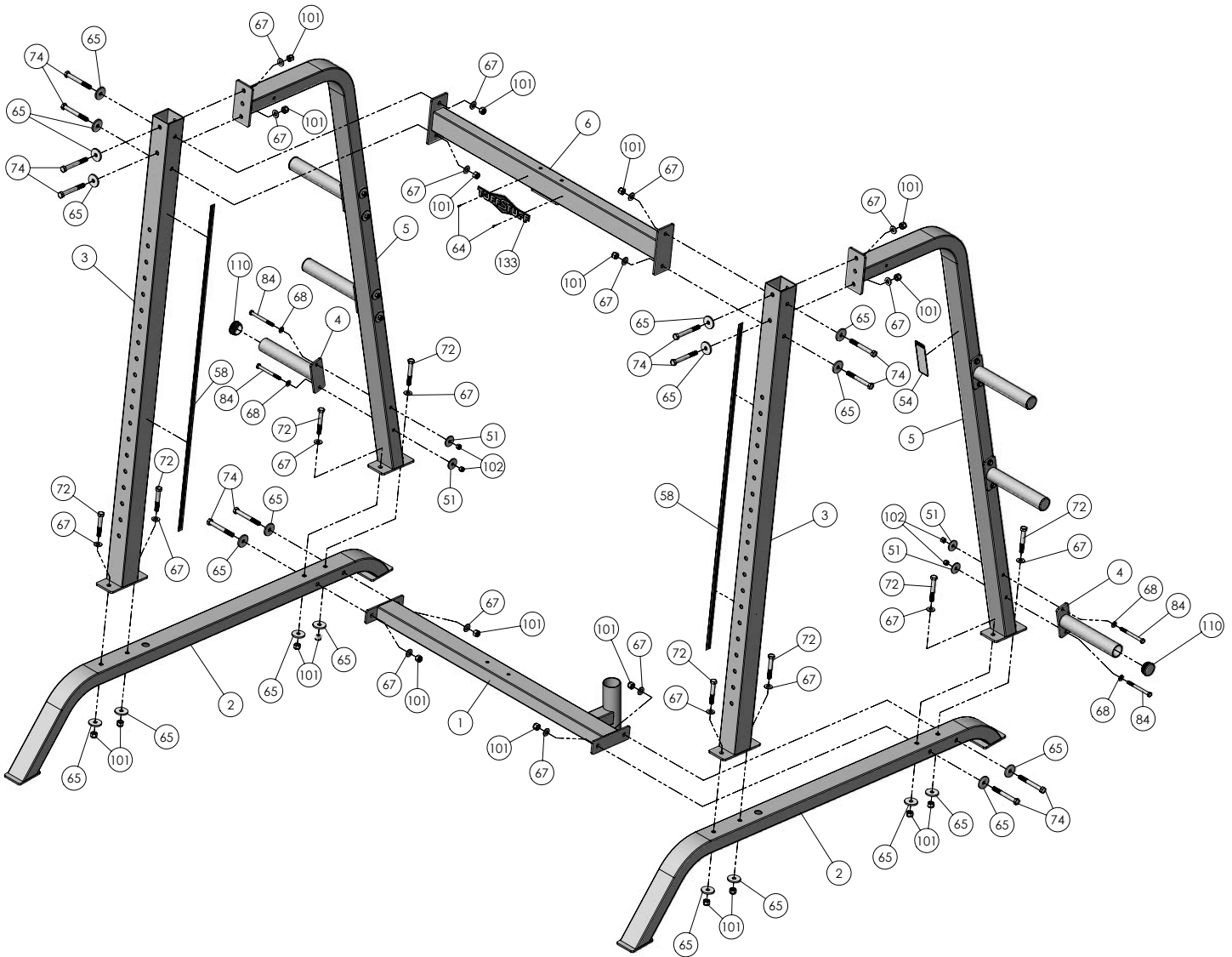
## Step 5 Assembling the Top Cross Brace and the Olympic Adapters

- A. Attach the Top Cross Brace (#6) to the Front Uprights (#3) using hardware shown.
- B. Insert Plastic Insert Caps 1 7/8" Rd. (#110) into the tube-ends of the Olympic Adapters w/Plate (#4).
- C. Attach the six Olympic Adapters w/Plate (#4) to the two Rear Side Supports (#5) using hardware shown.



Assembly List		
Item #	Description	Qty.
6	TOP CROSS BRACE	1
4	OLYMPIC ADAPTER W/PLATE	6
51	CHROME WASHER 3/8 X 1 1/2	12
65	FLAT WASHER 1/2 X 1 3/4	4
67	FLAT WASHER SAE 1/2"	4
68	FLAT WASHER SAE 3/8"	12
74	HEX HEAD CAP SCREW 1/2-13 X 4 1/4	4
84	HEX HEAD CAP SCREW 3/8-16 X 4	12
101	NYLON INSERT LOCK NUT 1/2-13	4
102	NYLON INSERT LOCK NUT 3/8-16	12
110	PLASTIC INSERT CAP 1 7/8" RD.	6

## SBU-400 Exploded View Diagram



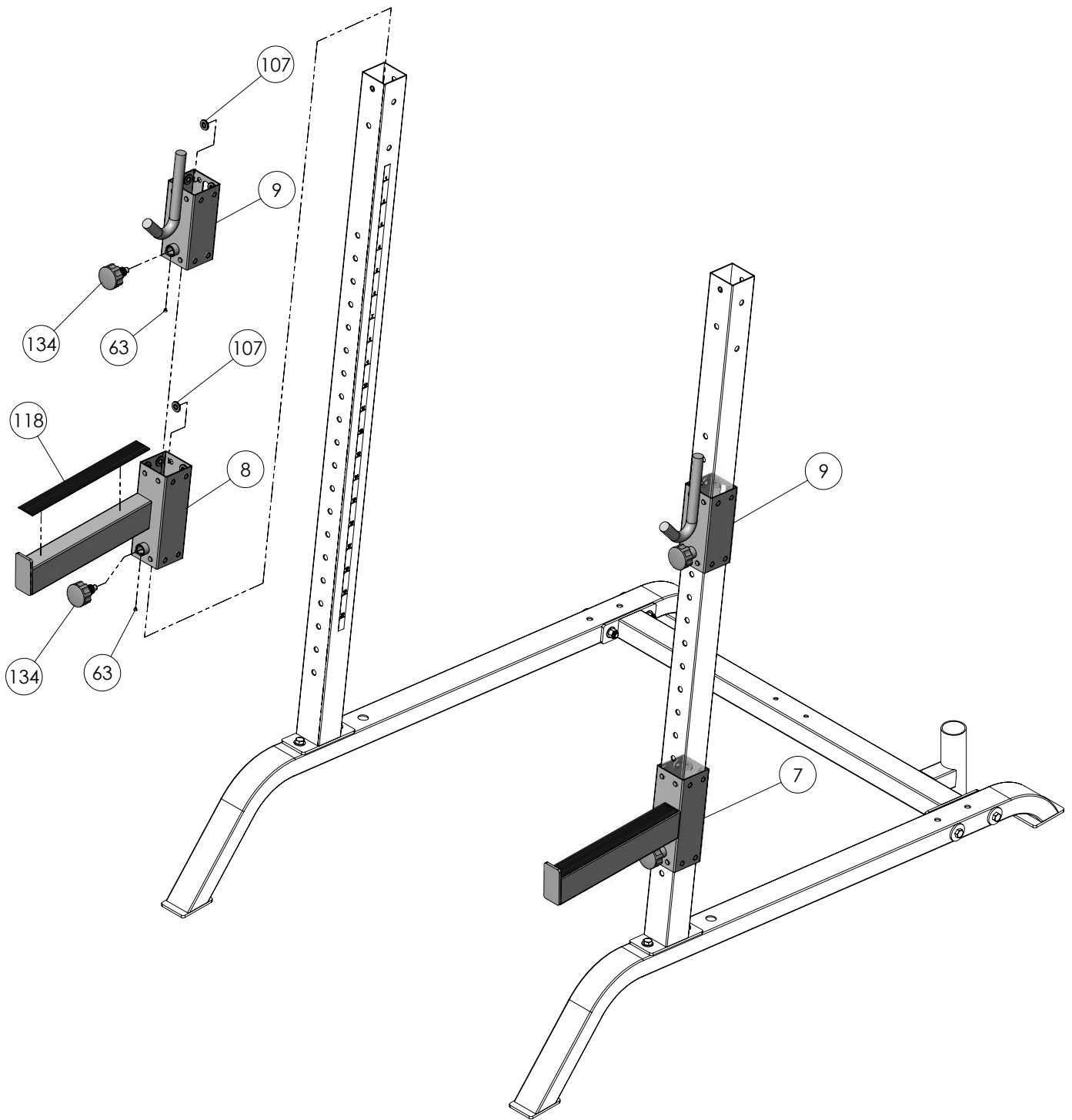
**CHART**

**BOLD FONT = SUB-ASSEMBLY PARTS**  
 REGULAR FONT = HARDWARE

## **SBU-400** **Parts List**

ITEM #	DESCRIPTION	PART #	QTY.	ITEM #	DESCRIPTION	PART #	QTY.
<b>1</b>	<b>BOTTOM CROSS BRACE</b>	<b>UP3482</b>	<b>1</b>	67	FLAT WASHER SAE 1/2"	BNH0238	20
<b>2</b>	<b>BOTTOM SIDE FRAME</b>	<b>UP3481</b>	<b>2</b>	68	FLAT WASHER SAE 3/8"	BNH0239	12
<b>3</b>	<b>FRONT UPRIGHT</b>	<b>UP3483</b>	<b>2</b>	72	HEX HEAD CAP SCREW GR-5 B/O 1/2-13 X 3 1/4	BNH0576	8
<b>4</b>	<b>OLYMPIC ADAPTER W/PLATE</b>	<b>UP2202</b>	<b>6</b>	74	HEX HEAD CAP SCREW GR-5 B/O 1/2-13 X 4 1/4	BNH0291	12
<b>5</b>	<b>REAR SIDE SUPPORT</b>	<b>UP3484</b>	<b>2</b>	84	HEX HEAD CAP SCREW GR-5 B/O 3/8-16 X 4	BNH0285	12
<b>6</b>	<b>TOP CROSS BRACE</b>	<b>UP3485</b>	<b>1</b>	101	NYLON INSERT LOCK NUT 1/2-13	BNH0212	20
51	CHROME WASHER 3/8 X 1 1/2	BNH1015	12	102	NYLON INSERT LOCK NUT 3/8-16	BNH0214	12
54	DECAL-CAUTION 1 3/4 X 5 1/2	BNH0126	1	110	PLASTIC INSERT CAP 1 7/8" RD.	BNH0003	6
58	DECAL-NUMBERS 1-20 TEFLON	BNH1547	2	133	TUFFSTUFF LOGO ALUMINUM (LG)	BNH1324	1
64	FLAT PHILLIPS SCREW ZINC # 5 X 1/2	BNH1481	2	139	DECAL-REFERENCE LEFT SIDE ( L )	BNH1850	1
65	FLAT WASHER 1/2 X 1 3/4	BNH0241	20	140	DECAL-REFERENCE RIGHT SIDE ( R )	BNH1851	1

## SHC-410 Exploded View Diagram

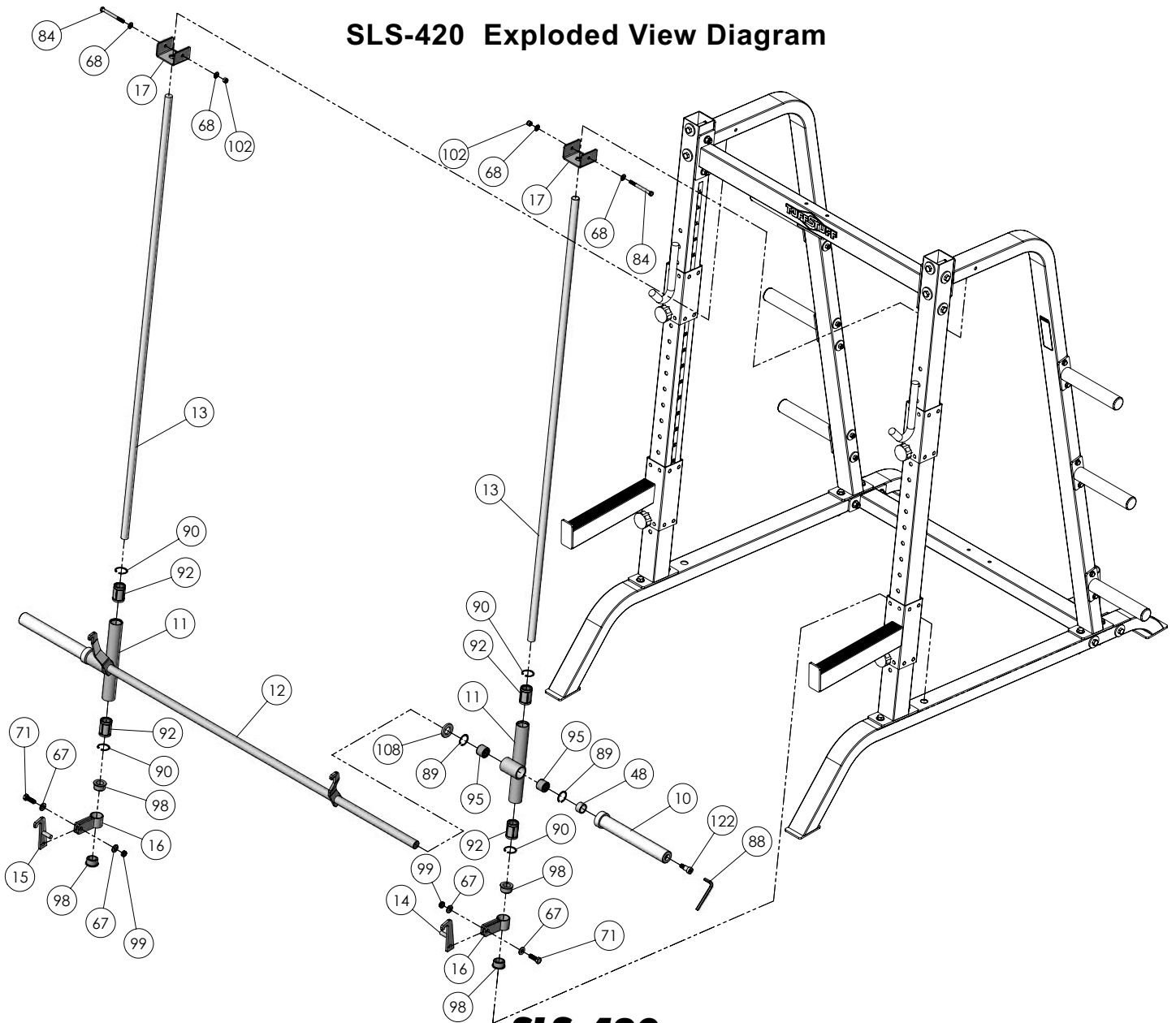


**CHART**  
**BOLD FONT = SUB-ASSEMBLY PARTS**  
 REGULAR FONT = HARDWARE

## SHC-410 Parts List

ITEM #	DESCRIPTION	PART #	QTY.	ITEM #	DESCRIPTION	PART #	QTY.
<b>7</b>	<b>LEFT SIDE BAR SAFETY SPOTTER</b>	<b>UP3487</b>	<b>1</b>	107	NYLON STEM BUTTON 12.5 mm X 26 mm X 9.5 mm	BNH0547	64
<b>8</b>	<b>RIGHT SIDE BAR SAFETY SPOTTER</b>	<b>UP3486</b>	<b>1</b>	118	RUBBER CORR MAT 1/8 X 1 7/8 X 15 1/2	BNH1247	2
<b>9</b>	<b>BAR HOLDER</b>	<b>UP3488</b>	<b>2</b>	134	TURN/PULL PIN W/KNOB AND LOCK	BNH0989	4
63	FLAT PHILLIPS MACHINE SCREW 8-32 X 1/4	BNH0408	4				

## SLS-420 Exploded View Diagram



**SLS-420**

### Parts List

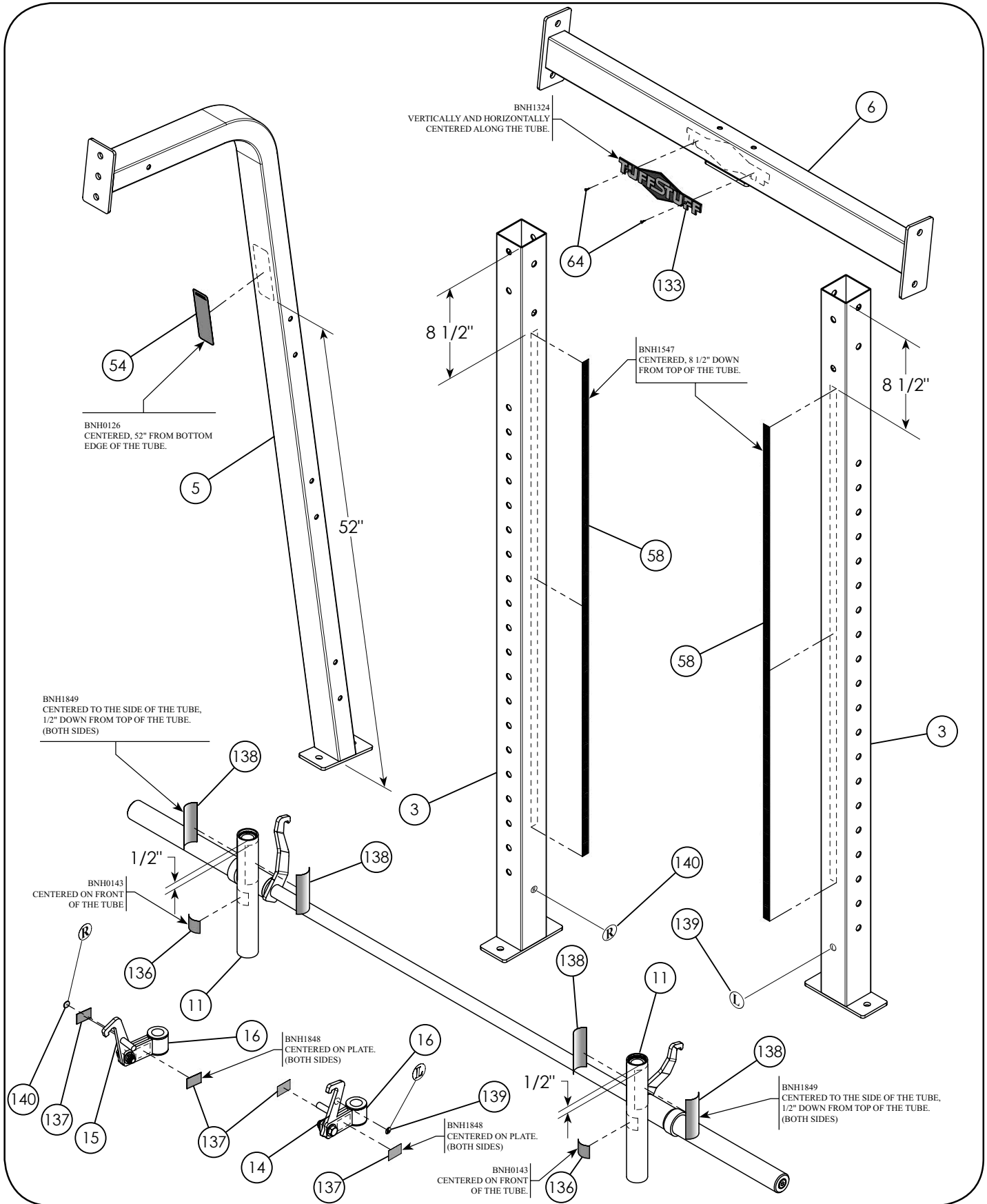
**CHART**

**BOLD FONT = SUB-ASSEMBLY PARTS**

REGULAR FONT = HARDWARE

ITEM #	DESCRIPTION	PART #	QTY.	ITEM #	DESCRIPTION	PART #	QTY.
<b>10</b>	<b>CHROME OLYMPIC ADAPTER</b>	<b>UP0679</b>	<b>2</b>	89	INTERNAL RETAINING RING 1 7/16"	BNH1308	4
<b>11</b>	<b>CHROME PRESS BAR HOUSING</b>	<b>UP0680</b>	<b>2</b>	90	INTERNAL RETAINING RING 1 9/16"	BNH0095	4
<b>12</b>	<b>CHROME PRESS BAR W/HOOKS</b>	<b>UP0678</b>	<b>1</b>	92	LINEAR BEARING	BNH0770	4
<b>13</b>	<b>LINEAR SHAFT 1 X 69 11/16</b>	<b>UP3489</b>	<b>2</b>	95	NEEDLE-ROLLER BEARING (HMK-2830)	BNH1307	4
<b>14</b>	<b>SAFETY HOOK LT</b>	<b>UP0525</b>	<b>1</b>	98	NYLON BUSHING 1 X 1 1/2	BNH0531	4
<b>15</b>	<b>SAFETY HOOK RT</b>	<b>UP0524</b>	<b>1</b>	99	NYLON INSERT JAM LOCK NUT 1/2-13	BNH0366	2
<b>16</b>	<b>SAFETY SPOTTER BRACKET</b>	<b>UP0523</b>	<b>2</b>	102	NYLON INSERT LOCK NUT 3/8-16	BNH0214	2
<b>17</b>	<b>SHAFT RETAINER BRACKET</b>	<b>UP3490</b>	<b>2</b>	108	NYLON WASHER 1 1/8 X 2 X 1/4	BNH0388	2
48	BRONZE BUSHING 1 1/8 X 1 11/32 X 3/4	BNH0735	2	122	SHOULDER BOLT 14 mm X 14 mm THREAD 1/2-13	BNH0426	2
67	FLAT WASHER SAE 1/2"	BNH0238	4	136	DECAL-FOR BEST PERFORMANCE 1 1/4 X 1 1/2	BNH0143	2
68	FLAT WASHER SAE 3/8"	BNH0239	4	137	DECAL-DANGER ENGAGE SAFETY SPOTTER 1.5 X 1	BNH1848	4
71	HEX HEAD CAP SCREW 1/2-13 X 1 1/2	BNH0727	2	138	DECAL-DANGER ENGAGE SAFETY SPOTTER 1.75 X 4	BNH1849	4
84	HEX HEAD CAP SCREW GR-5 B/O 3/8-16 X 4	BNH0285	2	139	DECAL-REFERENCE LEFT SIDE ( L )	BNH1850	1
88	HEX KEY M14	BNH1303	1	140	DECAL-REFERENCE RIGHT SIDE ( R )	BNH1851	1

# Decal Placements



## CAUTION

### WEIGHT TRAINING SAFETY

It is important to read all caution and warning labels posted on the machine. Follow proper safety procedures and rules, and become familiar with the equipment and adjustments.

**Before use,** inspect equipment for wear and tear. Walk around the equipment to look for worn or loose fittings, frayed cables and dry, unlubricated guide rods.

**Before beginning any type of exercise program,** it's important to consult your physician if you have not been involved in a regular exercise program, smoke or have signs of high blood pressure.

**If you are unfamiliar with the equipment or exercises,** please consult with a certified training instructor or TuffStuff Authorized Dealer to prevent the possibilities of injuries, development of poor form and bad habits.

**Keep hands and fingers** clear of all moving parts including the selectorized weight plates.

**Keep small children** away from the equipment while in use and when not in use.

[www.tuffstuff.net](http://www.tuffstuff.net)

54 BNH0126

L

139 BNH1850

R

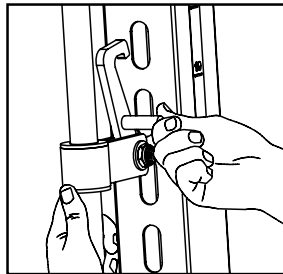
140 BNH1851

## DANGER

Engage this Safety Spotter Hook **PRIOR** to performing the exercise

137 BNH1848

## DANGER



Engage the Safety Spotter Hook to the required stop position for each exercise. **Failure to comply** would allow this press bar to drop beyond your own capability and could result in serious injury to you.

138 BNH1849

## CAUTION

FOR BEST PERFORMANCE LUBRICATE ALL SURFACES WITH SILICONE SPRAY.

136 BNH0143



133 BNH1324

SCALE 1 : 2

1

2

19

20

58 BNH1547

**DO NOT DISCARD THIS MANUAL**



### HOME LIFETIME WARRANTY

TuffStuff products are warranted to the retail purchaser to be free from defects in materials and workmanship. TuffStuff exclusive Home Lifetime Warranty coverage extends for the life of the product while owned by the original retail purchaser, and used only in a home or residential setting unless otherwise noted in the owner's manual.

This warranty does not cover:

1. TuffStuff products sold for and used in a commercial or institutional setting.
2. Any damage, failure or loss caused by accident, misuse, neglect, abuse, improper assembly, improper maintenance, or failure to follow instructions or warnings in the owner's manual and warning labels posted on the machine.
3. Use of products in a manner for which they were not designed.
4. Original product that is altered, or the use of replacement parts and components of another manufacturer other than TuffStuff.

Limitations:

The foregoing shall constitute the sole remedy of the purchaser and the sole liability of TuffStuff with regard to warranty, whether express or implied by operation of law or otherwise, including but not limited to any implied warranties of merchantability or fitness. TuffStuff shall in no event be liable for incidental or consequential losses, damages or expenses in connection with exercise products. TuffStuff's liability hereunder is expressly limited to the repairs or replacements of warranted defective parts.

Procedures:

Warranty service will be performed at TuffStuff's facility in Pomona, California. TuffStuff will have the option of either repair or replacement at no charge for any defective product. Purchaser is responsible for installation of repaired or replaced parts and all transportation and insurance costs on returned or replaced equipment to and from TuffStuff's facility in Pomona.

This warranty gives you specific legal rights and you may also have other rights, which may vary from state to state. Effective July 1, 2004.

This warranty is the final, complete and exclusive agreement of the parties with respect to the quality or performance of the equipment and no action for breach of this written warranty or any implied warranty shall be commenced more than one (1) year after the accrual of the cause of action. No modification of this warranty or waiver of its terms shall be binding on either party unless approved in writing by an authorized representative of the party. Contact TuffStuff at 1325 E. Franklin Avenue, Pomona, California 91766, before returning any defective equipment.

**Note:** Retain your sales receipt and be sure to mail in the warranty registration card to insure that a permanent record of your purchase is on file with the factory and to avoid unnecessary delays in warranty service.

### **TuffStuff Fitness Equipment, Inc.**

1325 E. Franklin Avenue

Pomona, CA 91766, USA

Ph: 909-629-1600 Fax: 909-629-4967

E-mail: [service@tuffstuff.net](mailto:service@tuffstuff.net) Net: [www.tuffstuff.net](http://www.tuffstuff.net)