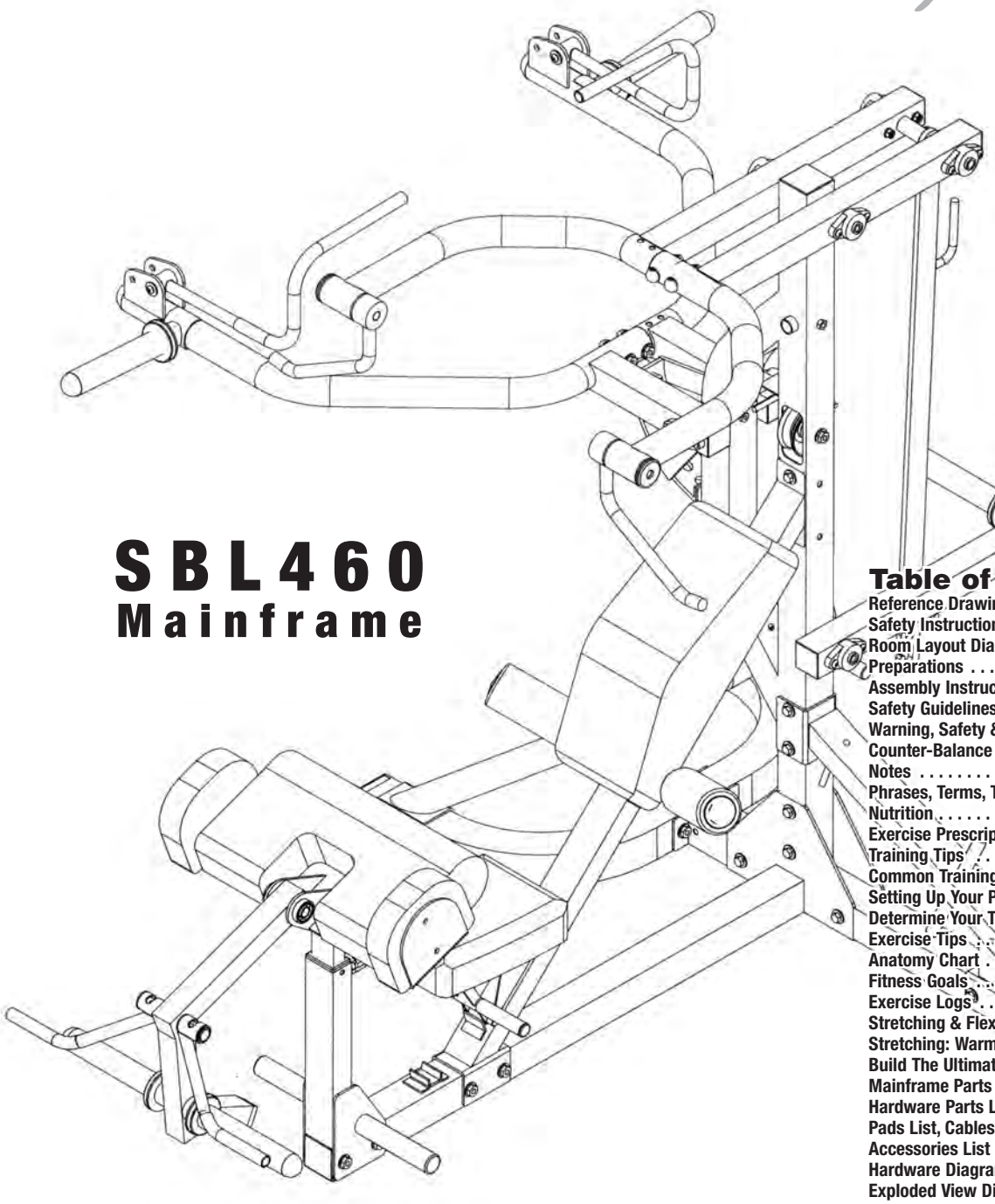
POWERLIFT™

Freeweight Leverage Gym System

by Body-Solid®



SBL460
Mainframe

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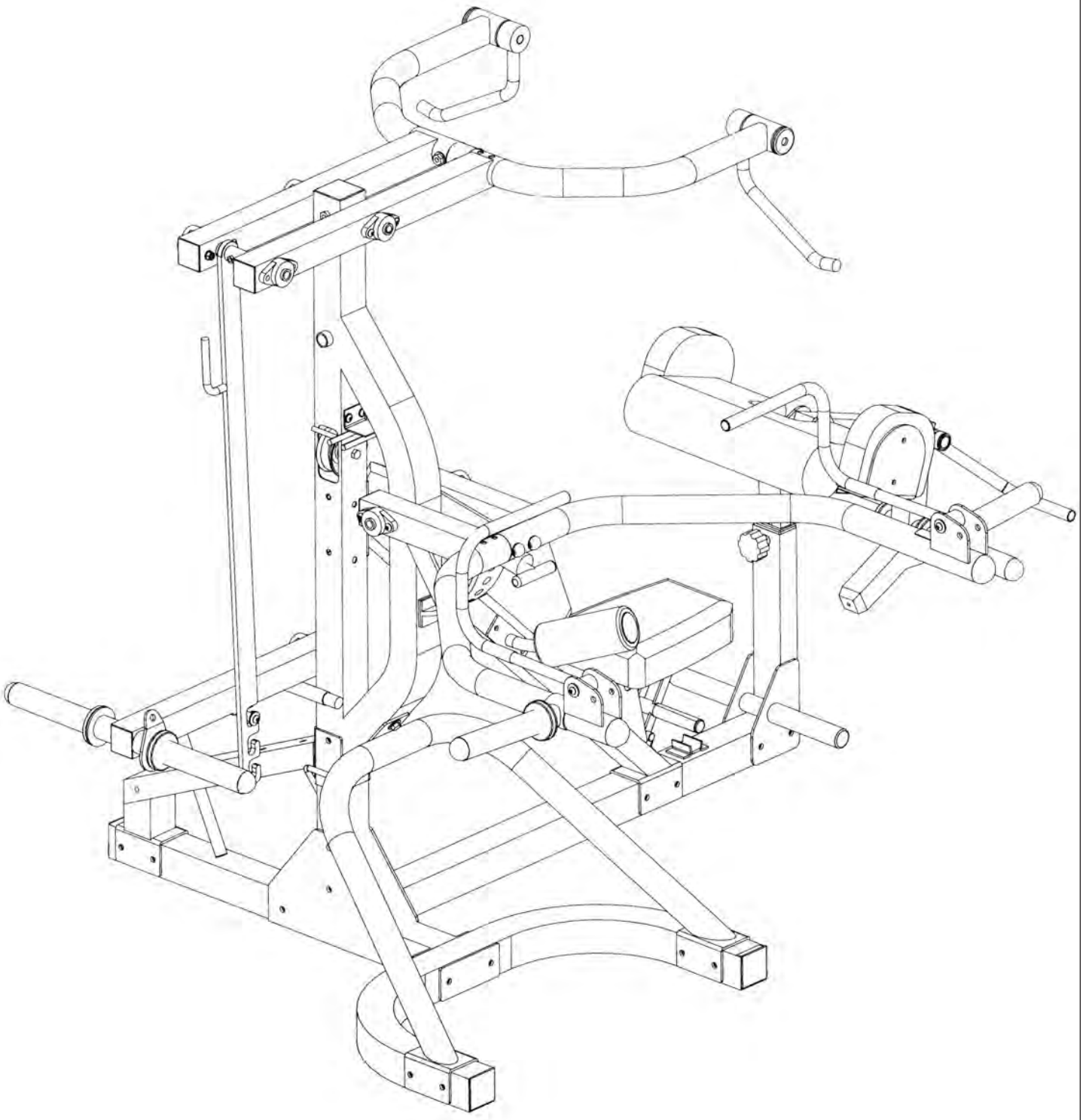
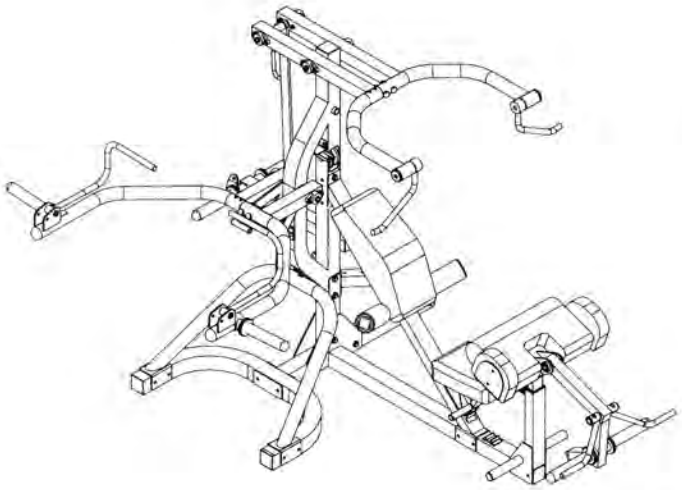
Mainframe Assembly Instructions

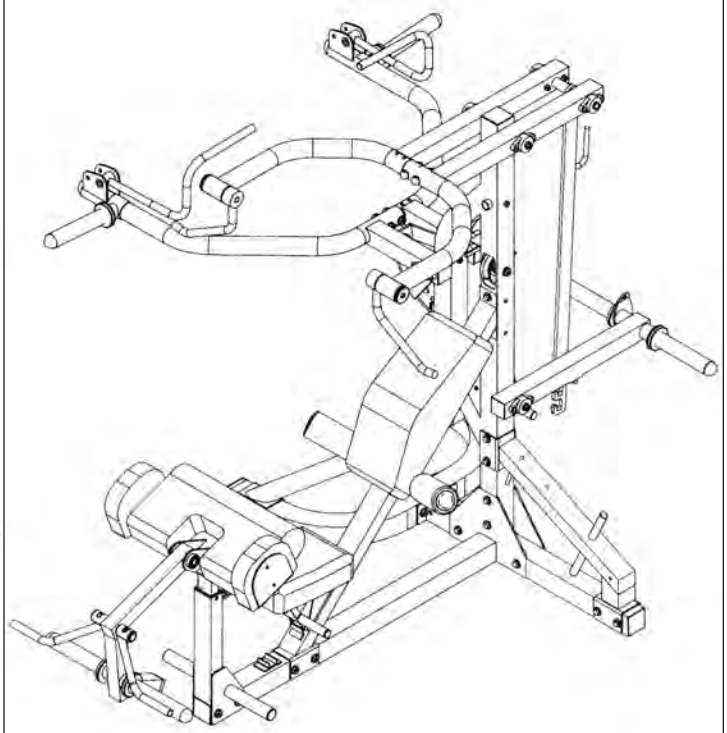
OWNER'S & MANUAL

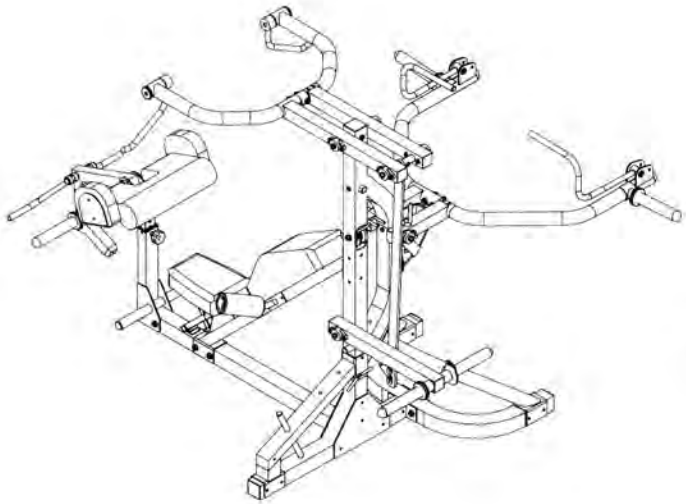
PowerLIFT Mainframe SBL460
Reference Drawings

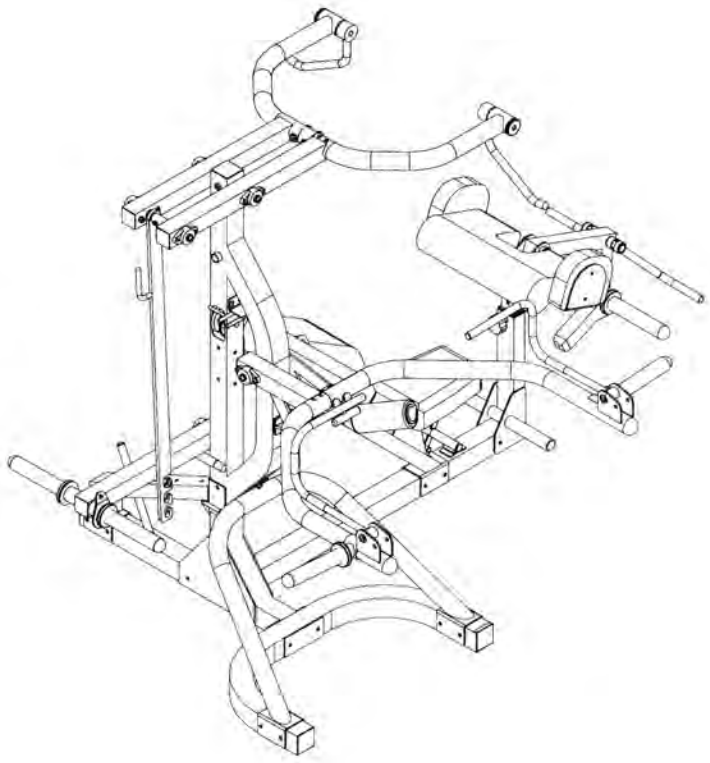


PowerLIFT Mainframe SBL460
Reference Drawings









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

Even though we have prepared this manual with extreme care, neither the publisher nor the author can accept responsibility for any errors in, or omission from, the information given.

Important Safety Instructions

Before beginning any fitness program, you should obtain a complete physical examination from your physician.

Il est conseille de subir un examen medical complet avant d'entreprendre tout programme d'exercise. Si vous avez des etourdissements ou des faiblesses, arretez les exercices immediatement.

Antes de comenzar cualquier programma de ejercicios, deberias tener un examen fisico con su doctor.

When using exercise equipment, you should always take basic precautions, including the following:

- Read all instructions before using the PowerLIFT Gym. These instructions are written to ensure your safety and to protect the unit.
- Do not allow children on or near the equipment.
- Use the equipment only for its intended purpose as described in this guide. Do not use accessory attachments that are not recommended by the manufacturer. Such attachments might cause injuries.
- Wear proper exercise clothing and shoes for your workout—no loose clothing.
- Use care when getting on or off the unit.
- Do not overexert yourself or work to exhaustion.
- If you feel any pain or abnormal symptoms, stop your workout immediately and consult your physician.
- Never operate unit when it has been dropped or damaged. Return the equipment to a service center for examination and repair.
- Never drop or insert objects into any opening in the equipment.
- Always check the unit and its cables before each use. Make sure that all fasteners and cables are secure and in good working condition.
- Do not use the equipment outdoors or near water.
- Always use collars on weight plate posts.

Personal Safety During Assembly

- It is strongly recommended that a qualified dealer assemble the equipment. ***Assistance is required.***
- Before beginning assembly, please take the time to read the instructions thoroughly.
- Read each step in the assembly instructions and follow the steps in sequence. Do not skip ahead. If you skip ahead, you may learn later that you have to disassemble components and that you may have damaged the equipment.
- Assemble and operate the PowerLIFT Gym on a solid, level surface. Locate the unit a few feet from the walls or furniture to provide easy access.

The PowerLIFT Gym is designed for your enjoyment. By following these precautions and using common sense, you will have many safe and pleasurable hours of healthful exercise with your Body-Solid PowerLIFT Gym.

After assembly, you should check all functions to ensure correct operation. If you experience problems, first recheck the assembly instructions to locate any possible errors made during assembly. If you are unable to correct the problem, call the dealer from whom you purchased the machine or call 1-800-556-3113 for the dealer nearest you.

Obtaining Service

Please use this Owner's Manual to make sure that all parts have been included in your shipment. When ordering parts, you must use the part number and description from this Owner's Manual. Use only Body-Solid replacement parts when servicing this machine. Failure to do so will void your warranty and could result in personal injury.

For information about product operation or service, check out the official Body-Solid website at www.bodysolid.com or contact an authorized Body-Solid dealer or a Body-Solid factory-authorized service company or contact Body-Solid customer service at one of the following:

Toll Free: 1-800-556-3113
Phone: 1-708-427-3555 ext. 5
Fax: 1-708-427-3598
E-mail: service@bodysolid.com

Or write to: Body-Solid, Inc.
Service Department
1900 S. Des Plaines Ave.
Forest Park, IL 60130 USA

Retain this Owner's Manual for future reference. Part numbers are required when ordering parts.

Thank you for purchasing the PowerLIFT Gym. This gym is part of the Body-Solid line of quality strength training machines, which let you target specific muscle groups to achieve better muscle tone and overall body conditioning. To maximize your use of the equipment please study this Owner's Manual thoroughly.

Unpacking the Equipment

The PowerLIFT Gym is carefully tested and inspected before shipment. Body-Solid ships the unit in several pieces that require assembly. Ask for assistance during the assembly process.

- Carefully unpack the boxes and lay the pieces on the floor near the place where you plan to use the equipment.

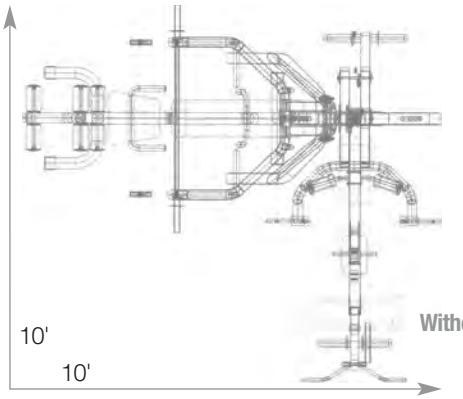
Be careful to assemble all components in the sequence presented in this guide.

If any items are missing, contact the dealer from whom you purchased the unit or call 1-800-556-3113 for the dealer nearest you.

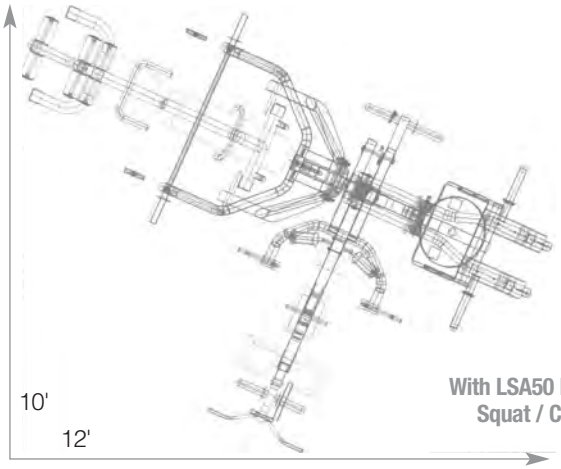
OPTIONAL Equipment

Optional equipment that you can purchase through your dealer include the FID46 PowerLIFT Flat / Incline / Decline Bench, LSA50 PowerLIFT Squat / Calf Station, and the WT46 PowerLIFT Six-post Olympic Weight Tree.

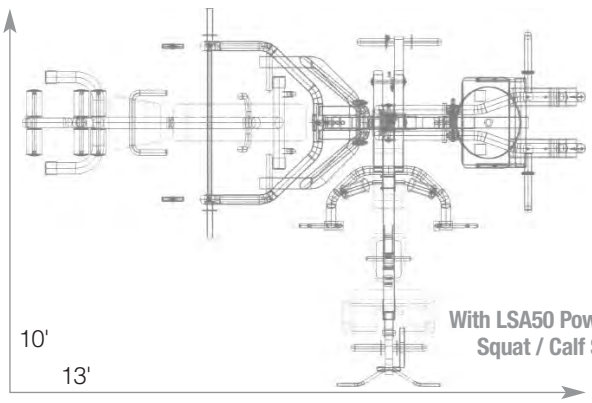
These room layout diagrams will help you decide the best placement for your PowerLIFT Gym (with or without the LSA50 Squat / Calf Station).



Without LSA50 PowerLIFT Squat / Calf Station



With LSA50 PowerLIFT Squat / Calf Station



With LSA50 PowerLIFT Squat / Calf Station

Preparations

CAUTION: To set up this unit, you will need assistance. Do not attempt assembly by yourself.

You must review and follow the instructions in this Owner's Manual. If you do not assemble and use the PowerLIFT Gym according to these guidelines, you could void the Body-Solid warranty.

Required Tools

The tools that you must obtain before assembling the PowerLIFT Gym include:

- ☐ 2.5mm Hex Key
- ☐ 5mm Hex Key
- ☐ 6mm Hex Key (You need two)
- ☐ 8mm Open-End Wrench
- ☐ 10mm Open-End Wrench
- ☐ 14mm Open-End Wrench
- ☐ 17mm Open-End Wrench
- ☐ 19mm Open-End Wrench
- ☐ 17mm Box Wrench
- ☐ 19mm Box Wrench
- ☐ Rubber Mallet

Installation Requirements

Follow these installation requirements when assembling the PowerLIFT Gym:

- Fill out and mail warranty card.
- Set up the PowerLIFT Gym on a solid, flat surface. A smooth, flat surface under the machine helps keep it level. A level machine has fewer malfunctions.
- Provide ample space around the machine. Open space around the machine allows for easier access.
- Insert all bolts in the same direction. For aesthetic purposes, insert all bolts in the same direction unless specified (in text or illustrations) to do otherwise.
- Leave room for adjustments. Tighten fasteners such as bolts, nuts, and screws so the unit is stable, but leave room for adjustments. Do not fully tighten fasteners until instructed in the assembly steps to do so.

CAUTION: Obtain assistance! Do not attempt to assemble the PowerLIFT Gym by yourself. Review the Installation Requirements before proceeding with the following steps.

The PowerLIFT Gym mainframe unit comes in four boxes. Be careful to assemble components in the sequence presented in this guide.

NOTE: With so many assembled parts, proper alignment and adjustment is critical. While tightening the nuts and bolts, be sure to leave room for adjustments.

Assembly of the PowerLIFT Gym takes professional installers about 2.5 hours to complete. If this is the first time you have assembled this type of equipment, plan on significantly more time.

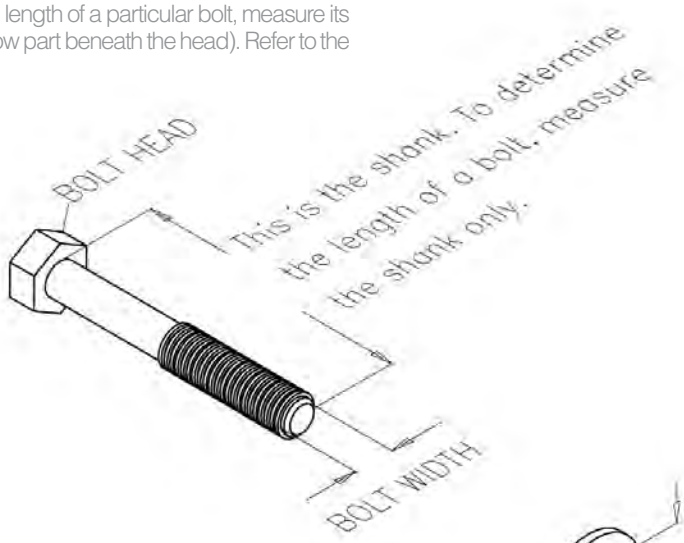
Professional installers are highly recommended!

However, if you acquire the appropriate tools, obtain assistance, and follow the assembly steps sequentially, the process will take time, but is fairly easy.

Assembly Tips

- Read all "Notes" on each page before beginning each step.
- While you may be able to assemble the PowerLIFT Gym using the illustrations only, important safety notes and other tips are included in the text.
- Some pieces may have extra holes that you will not use. Use only those holes indicated in the instructions and illustrations.

NOTE: To find out the length of a particular bolt, measure its shank (the long, narrow part beneath the head). Refer to the following diagram:



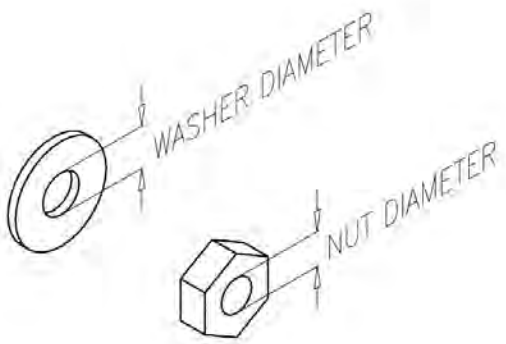
Do not fully tighten bolts until instructed to do so.

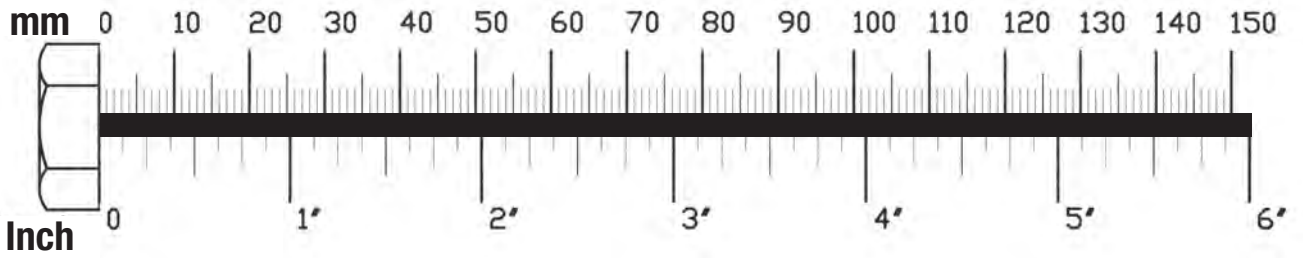
Note: After assembly, you should check all functions to ensure correct operation. If you experience problems, first recheck the assembly instructions to locate any possible errors made during assembly. If you are unable to correct the problem, call the dealer from whom you purchased the machine or call 1-800-556-3113 for the dealer nearest you.

IMPORTANT!

Before you begin you should fold-out pages 61, 62 and 63.

This is a quick reference guide that shows all hardware parts (in actual size) along with the corresponding key numbers on the assembly instructions.





STEP 1

Be careful to assemble all components in the sequence they are presented.

IMPORTANT! Before you begin you should fold-out pages 61, 62 and 63.

This is a quick reference guide that shows all hardware parts (in actual size) along with the corresponding key numbers on the assembly instructions.

A. Open hardware package labeled “Step 1”.

B. Attach main base frame (A) to U base frame (B) using brace plate (C) and the following hardware.
two 32 (hex bolt 12mm x 105mm partial thread)
four 50 (flat washer 12mm)
two 48 (nylon lock nut 12mm)

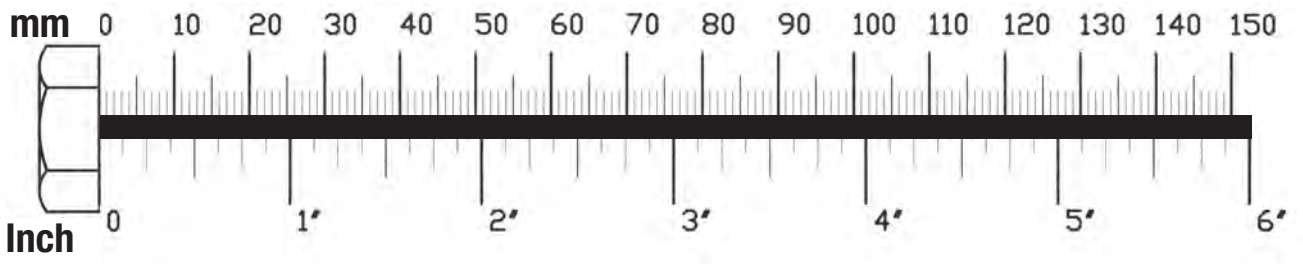
C. Obtain assistance for this step.
Have assistant hold vertical mainframe (E) in place on top of main base frame (A).
Connect lat base frame (D) to vertical mainframe (E) and main base frame (A) as shown using:
four 32 (hex bolt 12mm x 105mm partial thread)
eight 50 (flat washer 12mm)
four 48 (nylon lock nut 12mm)

D. Attach squat support frame (F) to vertical mainframe (E) and main base frame (A) using:
four 32 (hex bolt 12mm x 105mm partial thread)
eight 50 (flat washer 12mm)
four 48 (nylon lock nut 12mm)

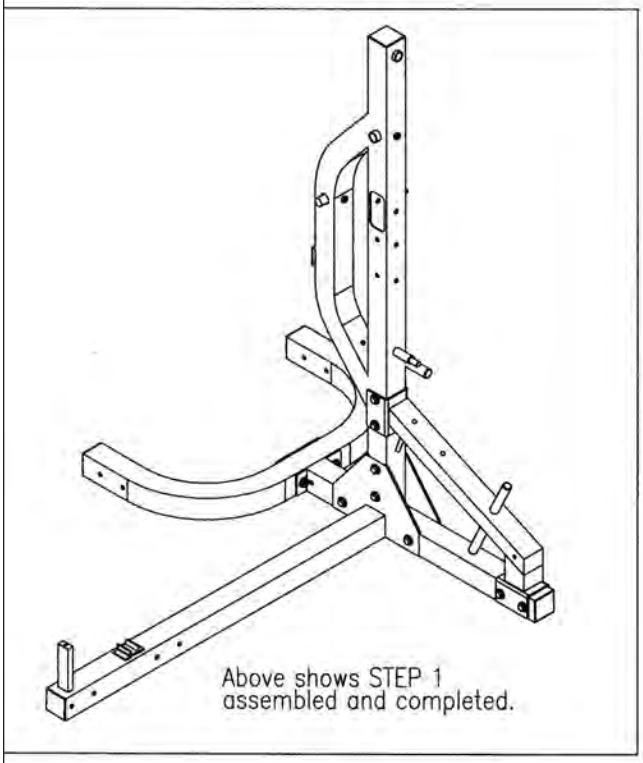
E. Slide counter-balance weight post (AW) into squat support frame (F) as shown.

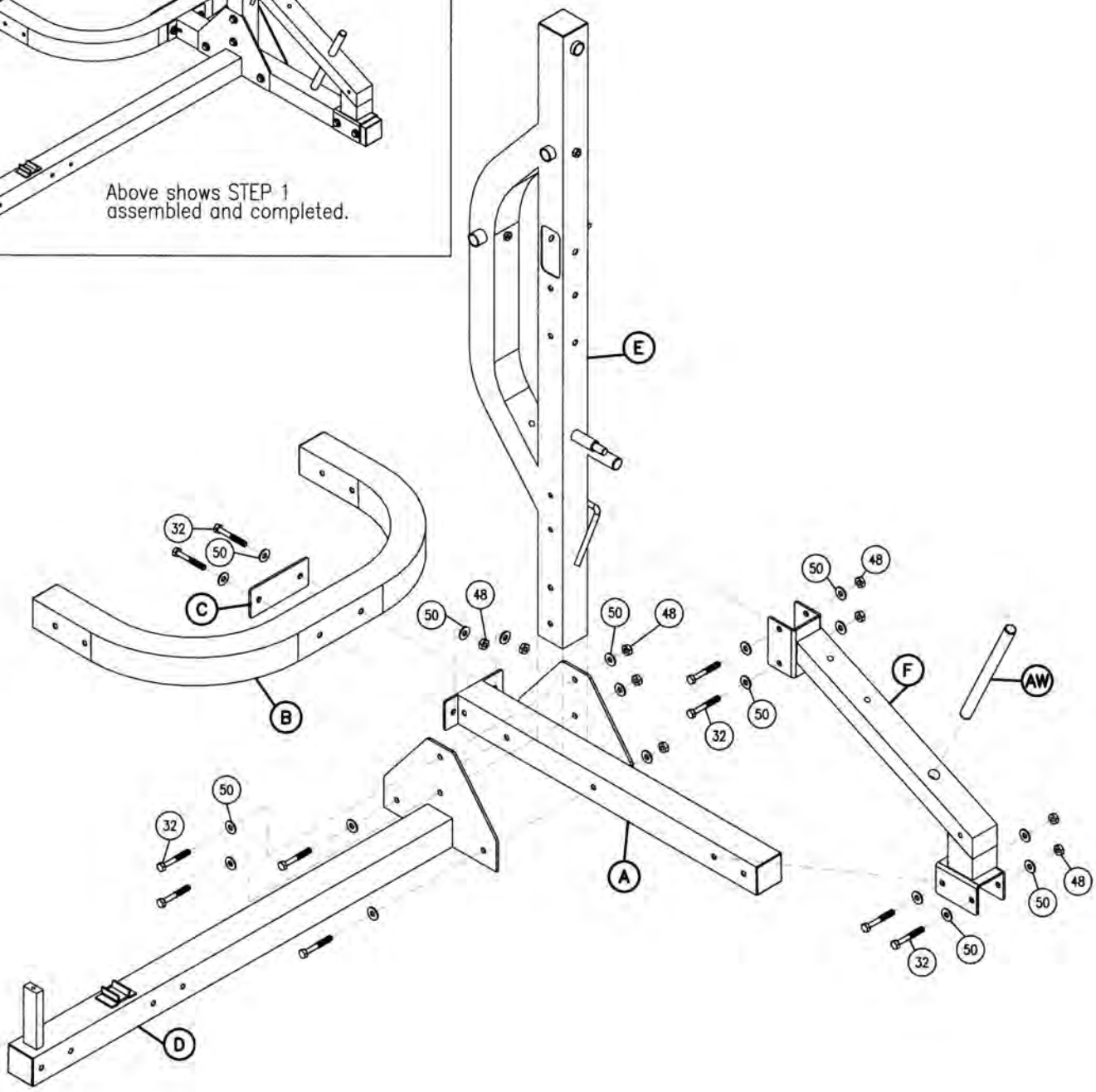
Note:

Finger tighten all hardware in this step. Do not wrench tighten until the end of Step 2.



STEP 1


Above shows STEP 1
assembled and completed.


E
C
B
A
D
F
AW
32
50
48

STEP 2

Be careful to assemble all components in the sequence they are presented.

A. Open hardware package labeled “Step 2”.

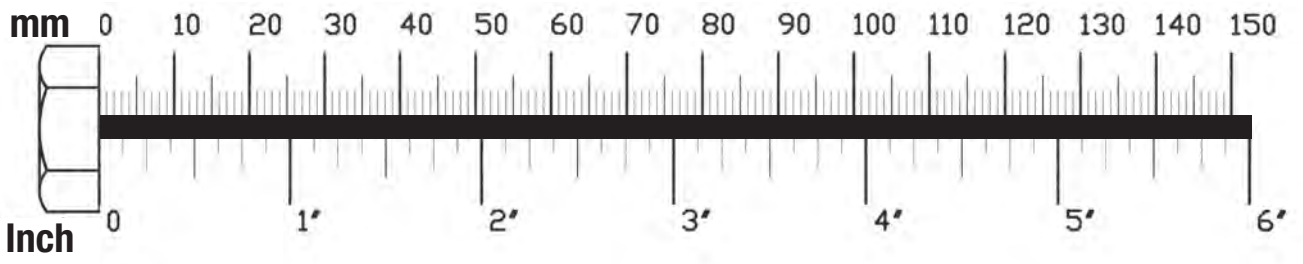
B. Attach press support frame (G) to U base frame (B) and vertical mainframe (E) as shown using:
four 32 (hex bolt 12mm x 105mm partial thread)
eight 50 (flat washer 12mm)
four 48 (nylon lock nut 12mm)

one 31 (hex bolt 12mm x 100mm partial thread)
three 50 (flat washer 12mm)
one 48 (nylon lock nut 12mm)
one 34 See Note 1. **(hex bolt 12mm x 25mm full thread)**
one 49 (spring lock washer 12mm)

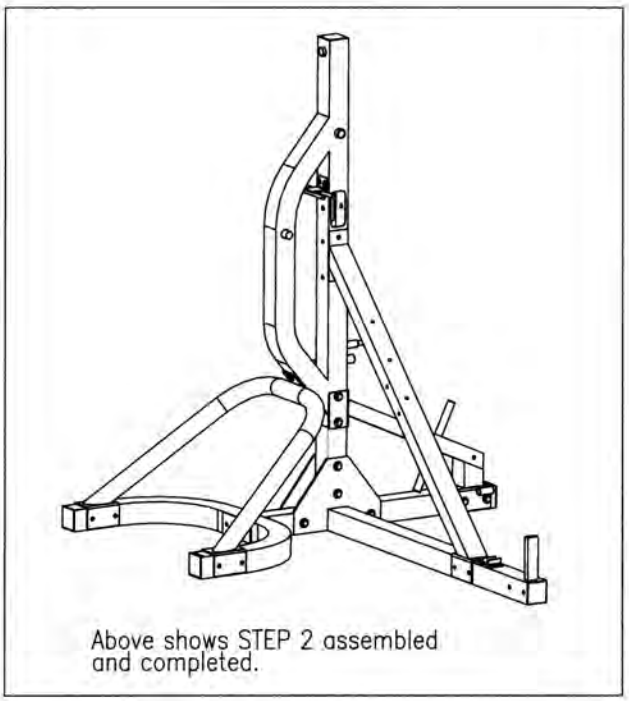
C. Attach accessory holder (H) to vertical mainframe (E) as shown using:
two 45 (round allen head 8mm x 25mm full thread bolt)
two 60 (spring lock washer 8mm)
two 61 (flat washer 8mm)

D. Attach lat support frame (J) to lat base frame (D) and vertical mainframe (E) using brace plate (L) and the following hardware:
four 32 (hex bolt 12mm x 105mm partial thread)
eight 50 (flat washer 12mm)
four 48 (nylon lock nut 12mm)

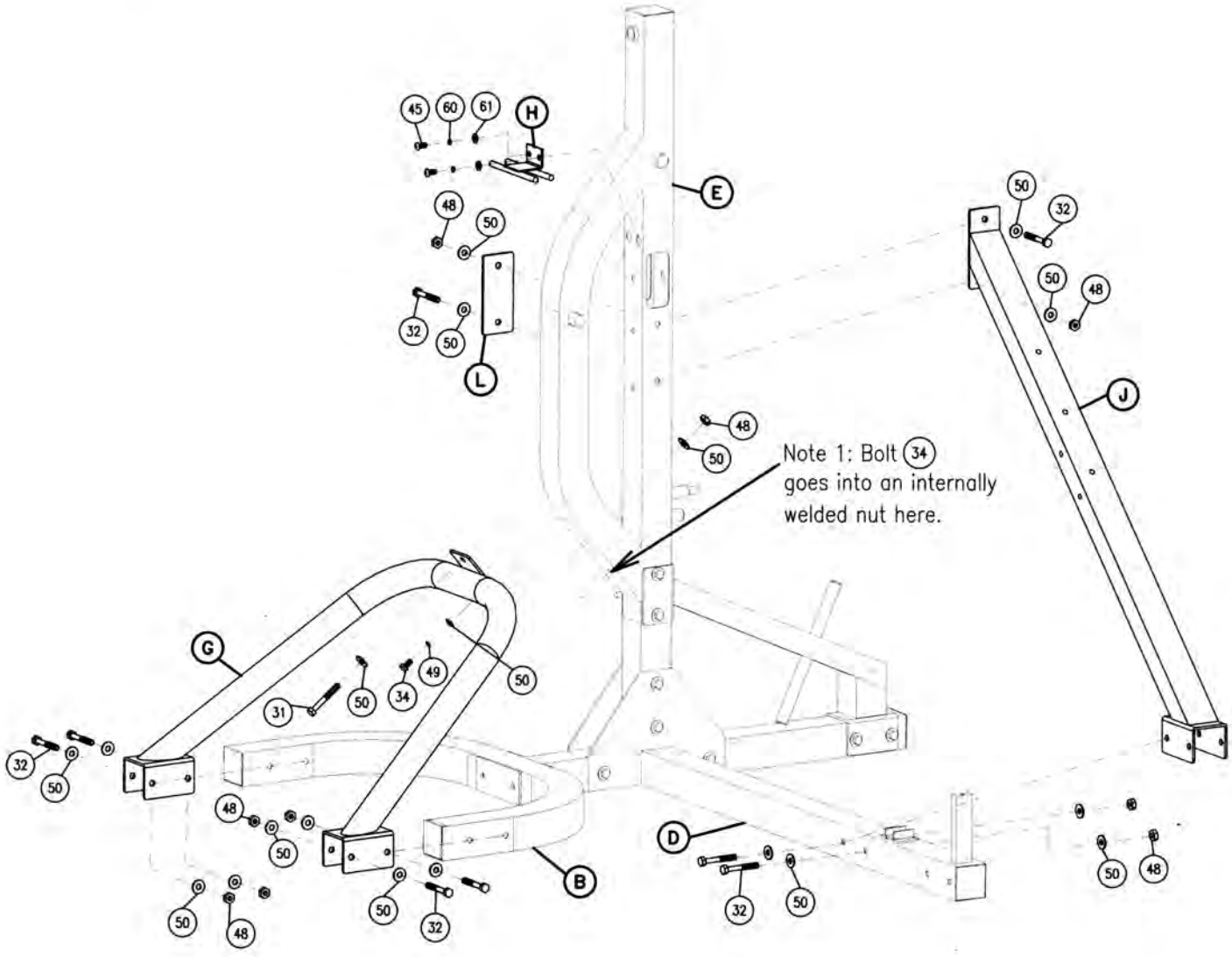
Note: At this point you must make sure that the gym is level, stable and in the right location. You should now wrench tighten all bolts and nuts on the mainframe unit.



STEP 2



Above shows STEP 2 assembled and completed.



STEP

3

Be careful to assemble all components in the sequence they are presented.

A. Open hardware package labeled “Step 3”.

B. Install seat pad frame (M) into lat support frame (J). See Note 1. Install 2 1/2” pivot shaft (N) to connect the seat pad frame and the lat support frame. Secure as shown by using:
two 40 (round allen head10mm x 20mm full thread bolt)
two 55 (spring lock washer 10mm)
two 51 (flat washer 10mm x 30mm)

C. Attach seat adjustor (P) to the flanges beneath the seat pad frame (M) using:
one 33 (hex bolt 12mm x 95mm partial thread)
two 50 (flat washer 12mm)
one 48 (nylon lock nut 12mm)

D. Attach hold down brackets (R) and (S) to lat support frame (J).
Note: hold down brackets should be angled UP (not down). Install using:
two 35 (hex bolt 10mm x 100mm partial thread)
four 56 (flat washer 10mm)
two 54 (nylon lock nut 10mm)

E. There is a threaded end at the bottom of shock cylinder (U). Screw the threaded end of the shock cylinder (U) into the post protruding from the lat base frame (D) as shown. Tighten by hand until snug.

F. Install preacher support (V) over the shock cylinder (U) and secure it to lat base frame (D) as shown using:
two 32 (hex bolt 12mm x 105mm partial thread)
four 50 (flat washer 12mm)
two 48 (nylon lock nut 12mm)

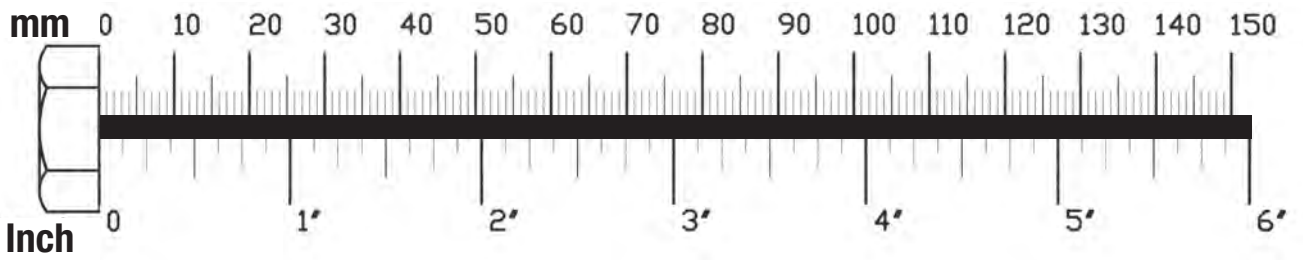
G. Insert foot hold down bar (W) thru the base of the preacher support (V) and hold in place by installing both rubber foot covers (12) as shown.

H. Install back pad (T) on to lat support frame (J). Tighten pad bolts to a snug fit. Do not over-tighten any pad bolts. Over - tightening pad bolts will cause T - nuts in pads to strip out. Install using:
three 42 (hex bolt 8mm x 70mm full thread)
three 60 (spring lock washer 8mm)
three 61 (flat washer 8mm)

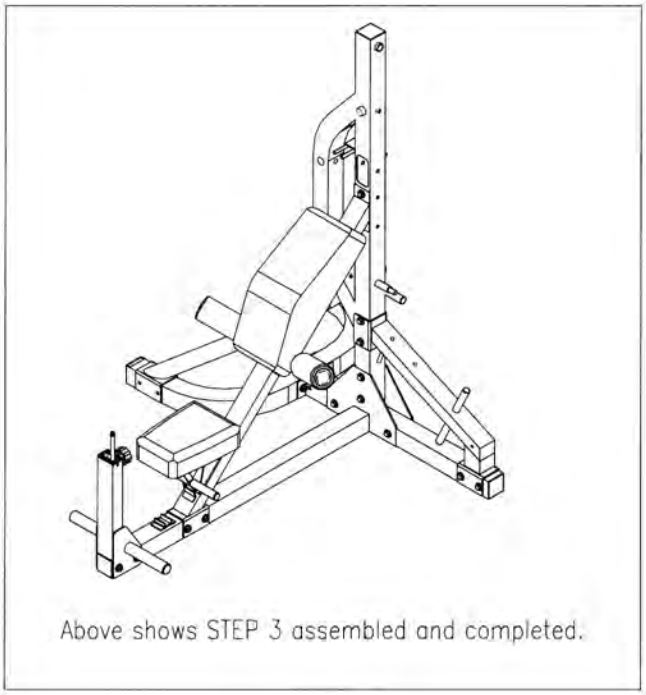
I. Install seat pad (Q) on to seat pad frame (M). Tighten pad bolts to a snug fit. Do not over - tighten any pad bolts. Over - tightening pad bolts will cause T - nuts in pad to strip out. Install using:
two 45 (round allen head 8mm x 25mm full thread bolt)
two 60 (spring lock washer 8mm)
two 61 (flat washer 8mm)

J. Slide both foam rollers (10) on to hold down brackets (R) and (S). Secure each foam roller in place by inserting a round plastic end cap (17).

Note: At this point you should wrench tighten all hardware in Step 3 except the seat pad and back pad bolts. Never wrench tighten any pad bolts.

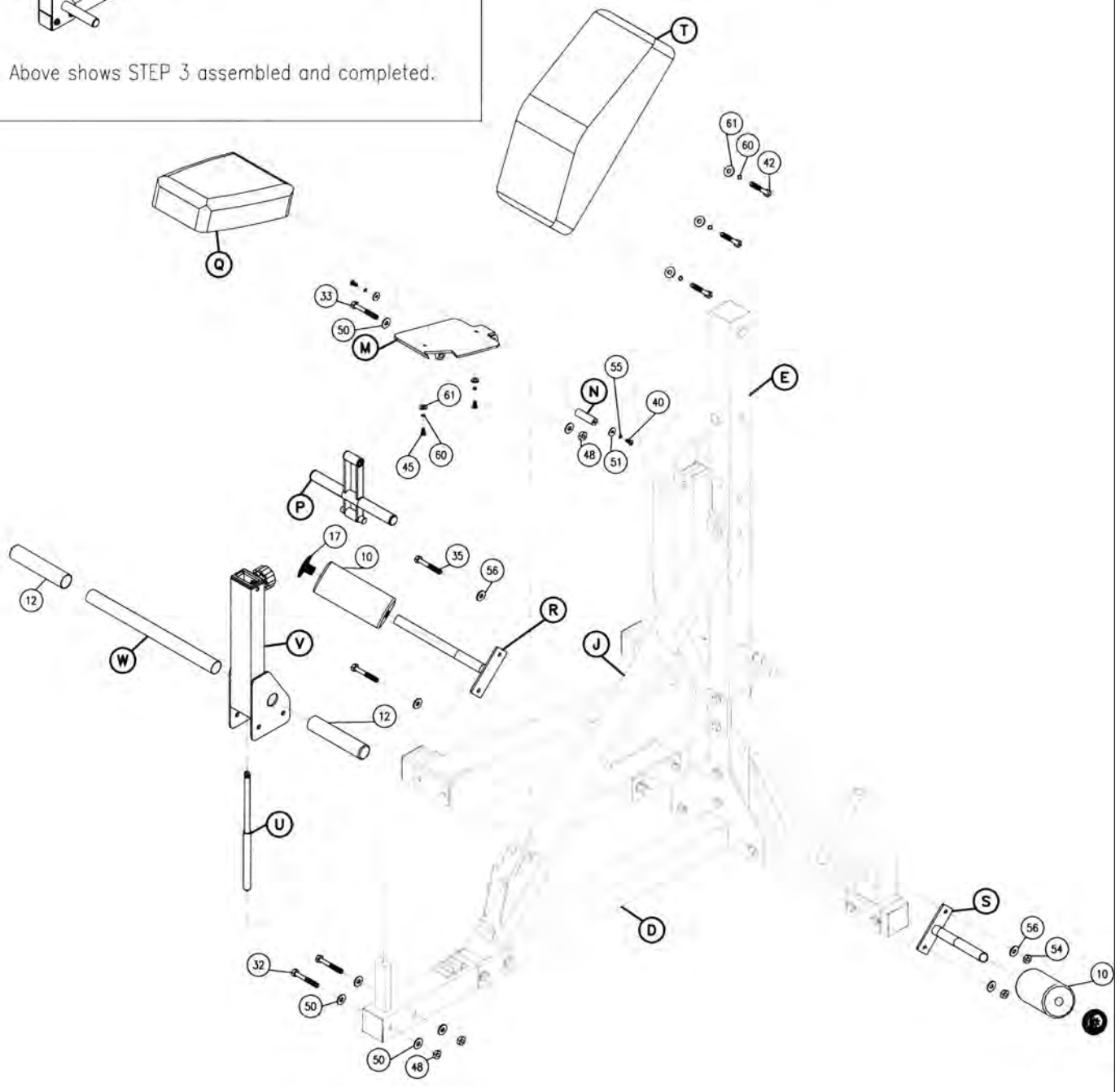


STEP 3



Above shows STEP 3 assembled and completed.

Note 1: 2 1/2" Pivot shaft (N) (shown actual size above).



STEP

4

Be careful to assemble all components in the sequence they are presented.

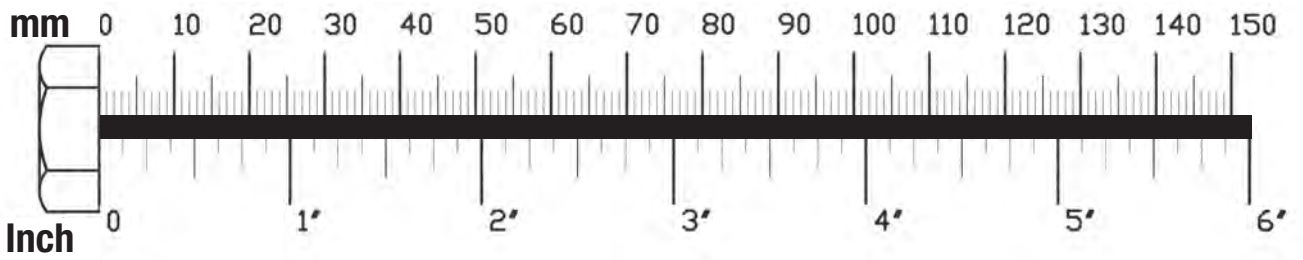
A Open hardware package labeled “Step 4”.

B. See Note 1. Install preacher pivot arm (Y) in to receiver of pad frame (AA). Install 3 1/2” pivot shaft (Z) to connect the preacher pivot arm and the pad frame. Secure as shown using:
two 40 (round allen head 10mm x 20mm full thread bolt)
two 55 (spring lock washer 10mm)
two 51 (flat washer 10mm x 30mm)
one 58 (standard nut 8mm)
one 64 (square head bolt 8mm x 30mm with dog point)

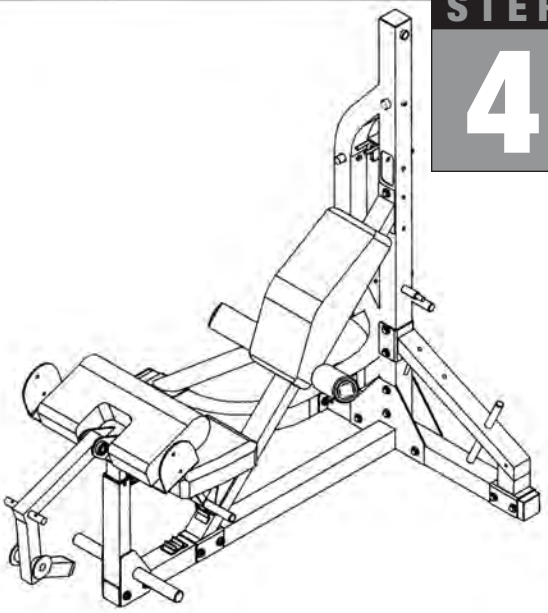
C. Obtain assistance for this step. Align preacher post (X) with pad frame (AA) and preacher pad (AC). Bolt together using:
four 45 (round allen head 8mm x 25mm full thread bolt) *
four 60 (spring lock washer 8mm)
four 61 (flat washer 8mm)

* **Note: Do not over-tighten these bolts. Tighten these bolts to a snug fit. Over - tightening these bolts will cause T - nuts in pads to strip out.**

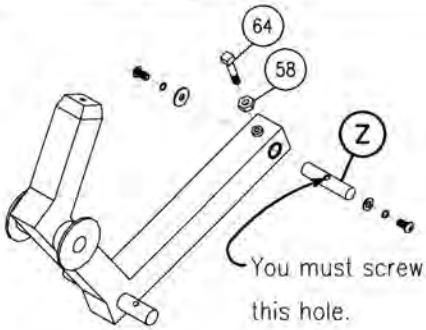
D. See Note 2. Obtain assistance for this step. Insert preacher post (X) into preacher support (V). Install bolt (46) (hex bolt 8mm x 40mm full thread) all the way thru preacher post eyelet of shock cylinder and lock in place using two (61) (flat washer 8mm) and one (59) (nylon lock nut 8mm).



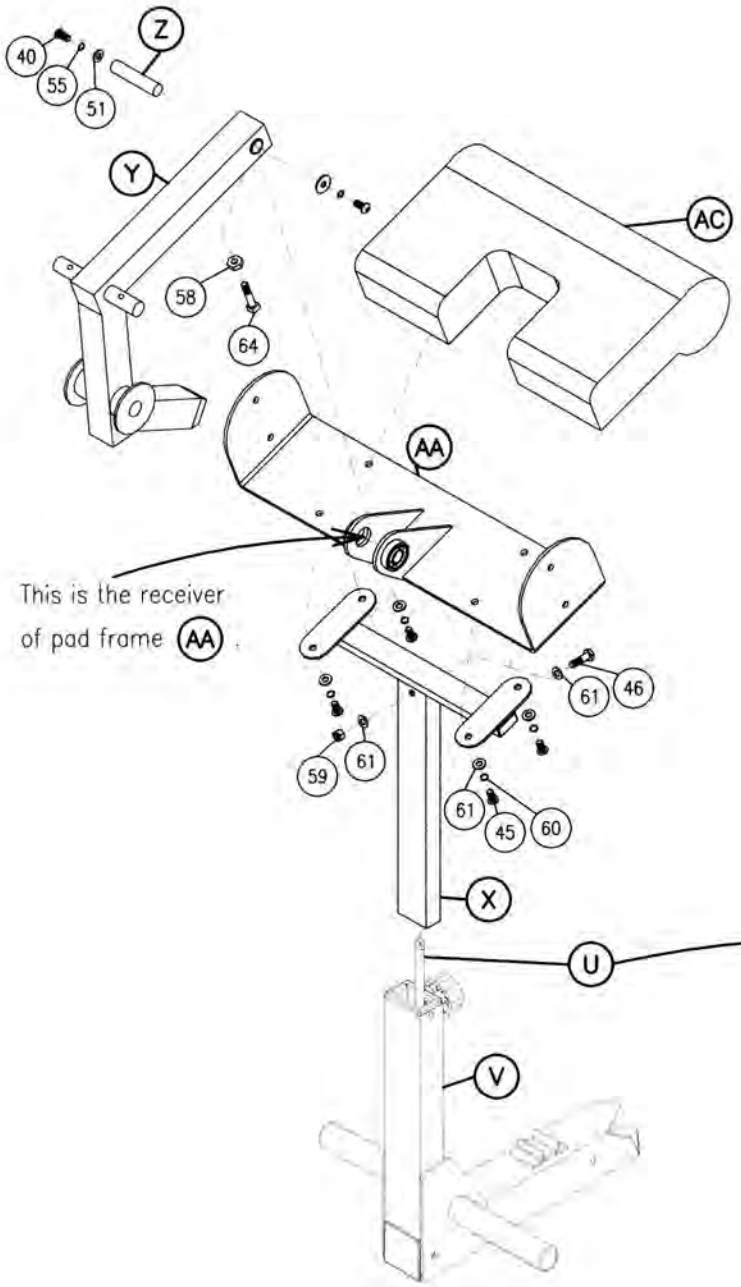
STEP 4

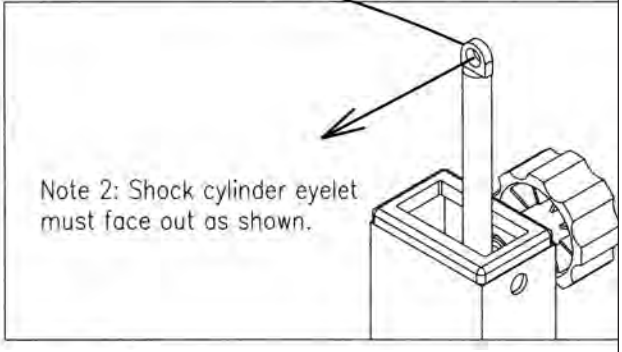


Above shows STEP 4 assembled and completed.



Note 1: Above drawing is upside down for detailed reference. You must screw bolt (64) into the hole in the center of 3 1/2" pivot shaft (Z), then wrench tighten bolt (64) first, and then wrench tighten nut (58) last.





STEP

5

Be careful to assemble all components in the sequence they are presented.

A. Open hardware package labeled “Step 5”.

B. Attach both side arm pads (AB) to pad frame (AA) as shown using:
four 45 (round allen head 8mm x 25mm full thread bolt) *
four 60 (spring lock washer 8mm)
four 61 (flat washer 8mm)

* **Note: Tighten these bolts to a snug fit. Never wrench tighten any pad bolts.**

C. Slide both preacher handles (AD) over welded shaft on preacher pivot arm (Y) as shown.

D. Secure preacher handles (AD) on to welded shaft by installing two (47) (flat allen head 8mm x 20mm full thread bolt) in the direction shown into the threaded holes of the welded shaft on the preacher pivot arm (Y).

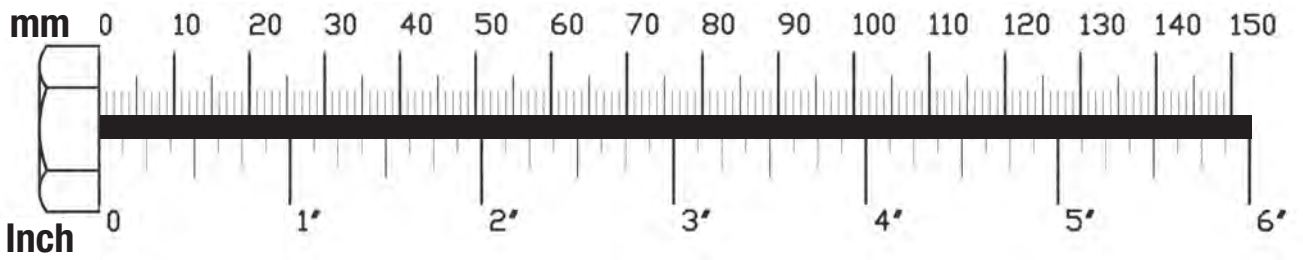
E. At this point you should lock preacher handles to preacher pivot arm by installing as shown;
two 40 (round allen head 10mm x 20mm full thread bolt)
two 55 (spring lock washer 10mm)
two 51 (flat washer 10mm x 30mm)

F. Slide 20" preacher weight post (AX) into preacher pivot arm (Y) as shown.

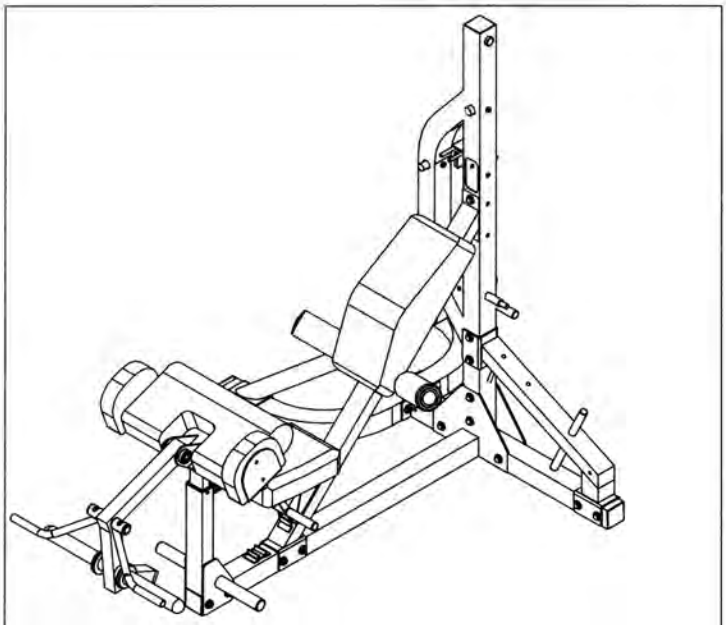
G. Slide both Olympic adapter sleeves (4) over the 20" preacher weight post (AX) as shown and lock in place using:
two 51 (flat washer 10mm x 30mm)
two 55 (spring lock washer 10mm)
two 40 (round allen head 10mm x 25mm full thread bolt) *

* **Note: You should wrench tighten these bolts now. You will need two (6mm) allen wrenches for this step. To lock Olympic adapter sleeves in place, use both allen wrenches at the same time and turn them in opposite directions to tighten.**

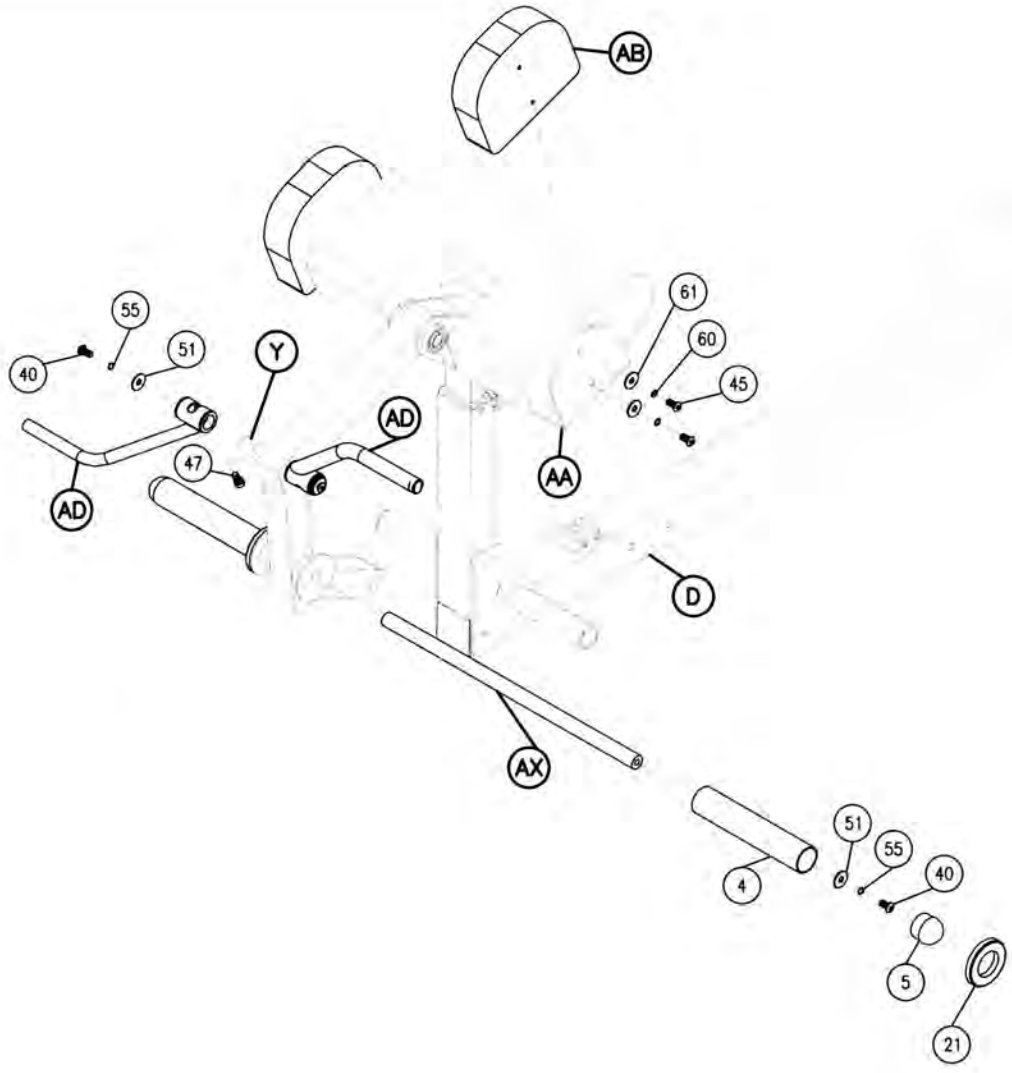
H. Slide both rubber donuts (21) over Olympic adapter sleeves and press both plastic ball-end caps 2” (5) into the ends as shown.



STEP 5



Above shows STEP 5 assembled and completed.



STEP 6

Be careful to assemble all components in the sequence they are presented.

Note:

You will need assistance in doing this step to properly align all parts.
Do not wrench tighten until instructed to do so.

A. Open hardware package labeled “Step 6”.

B. See Note 1. Insert front pivot shaft (AE) into vertical mainframe (E) as show using:
one 41 (square head bolt 10mm x 55mm with dog point) *
one 53 (standard nut 10mm)

*** Note: Be sure that (41) bolt goes into the hole in the center of the front pivot shaft (AE) and wrench tighten (41) bolt first and then wrench tighten (53) nut last. It may be necessary to “feel” for the hole in the center of the shaft by sliding a very small diameter allen wrench all the way thru first to help you line up the parts.**

C. Slide left lat beam (AF) on to the front pivot shaft (AE). See Note 2. Install pillow block bearing (22) on to left lat beam (AF) as shown using:
two 38 (round allen head 10mm x 30mm full thread bolt)
two 55 (spring lock washer 10mm)

D. Slide right lat beam (AG) on to the front pivot shaft (AE). See Note 2. Install the other pillow block bearing (22) on to the right lat beam (AG) as shown using:
two 38 (round allen head 10mm x 30mm full thread bolt)
two 55 (spring lock washer 10mm)

E. Secure left and right lat beams together (finger tighten only) by using:
two 36 (hex bolt 10mm x 75mm partial thread)
four 51 (flat washer 10mm)
two 54 (nylon lock nut 10mm)

F. Center the chrome lat adjustment bar (AH) between the left lat beam and right lat beam. Slide the rear pivot shaft (AE) thru the right lat beam (AG) and then thru the chrome lat adjustment bar (AH), and then thru the left lat beam (AF).

G. Install bolt (41) (square head bolt 10mm x 55mm with dog point) and nut (53) (standard nut 10mm) into the threaded hole on the back side of the chrome lat adjustment bar (AH) as shown. *

*** Note: Be sure that (63) bolt goes into the hole in the center of the rear pivot shaft (AE) and wrench tighten (63) bolt first and then wrench tighten (53) nut last. It may be necessary to “feel” for the hole in the center of the shaft by sliding a very small diameter allen wrench all the way thru first to help you line up the parts.**

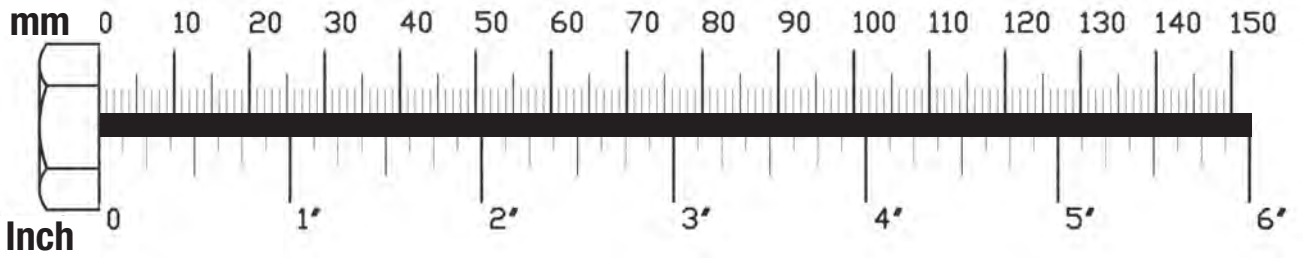
H. See Note 2. Install both pillow block bearings (22) onto each side of the rear pivot shaft (AE) as shown using:
four 37 (hex bolt 10mm x 85mm partial thread)
four 55 (spring lock washer 10mm)
four 56 (flat washer 10mm)
four 54 (nylon lock nut 10mm)

I. Install both lat handles (AJ) into left and right lat beams as shown using:
two 3 (black lat end cap 2.75” x 0.375”)
two 55 (spring lock washer 10mm)
two 40 (round allen head 10mm x 20mm full thread bolt)

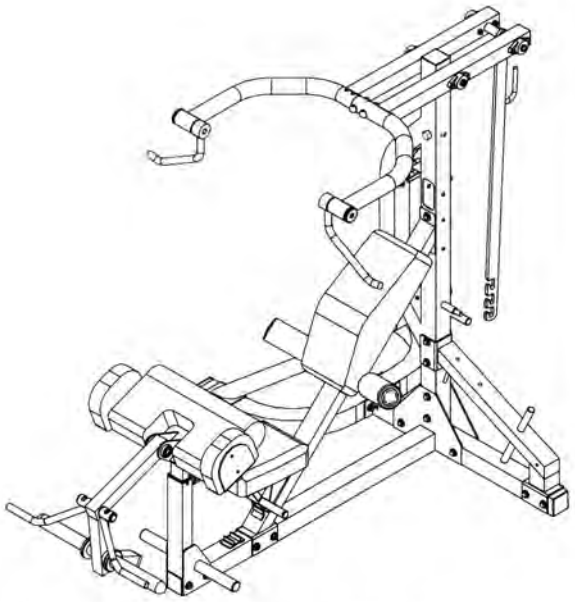
Note: At this point you should close the gap between the left and right lat beams at their connection point. Use a rubber mallet to knock the two parts together tightly.

You should now wrench tighten all bolts in this step.

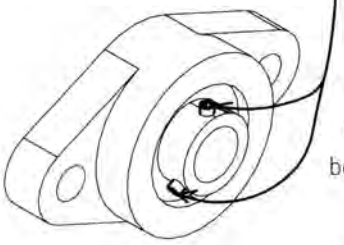
J. Install two plastic bolt end covers (26) over bolts (36).



STEP 6



Above shows STEP 6 assembled and completed.

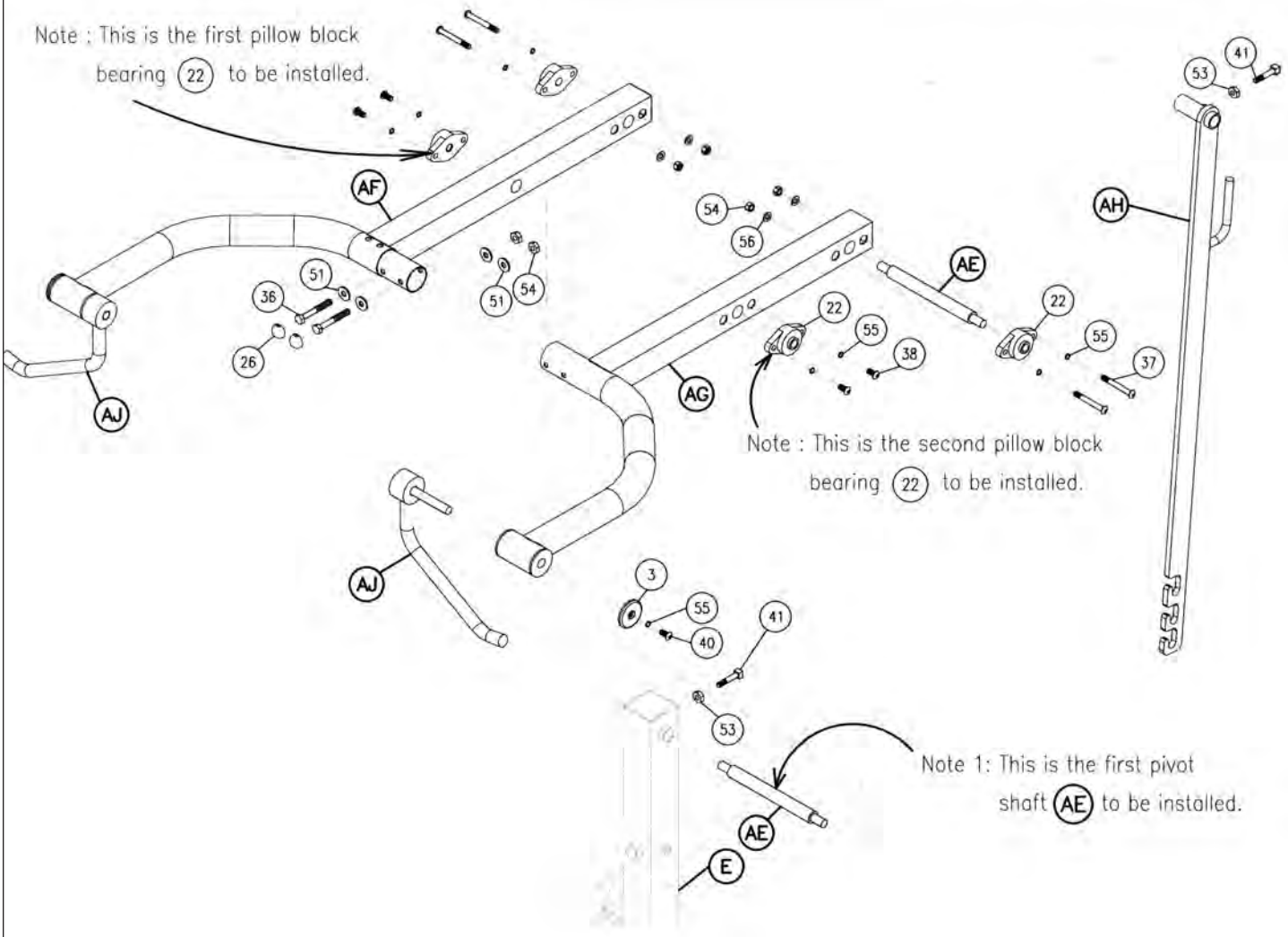


Note 2:

There are two small allen set screws in each pillow block bearing (22).

For best alignment of this system you should loosen all allen set screws before installing the pillow block bearing

The last and final step of the assembly process is to wrench tighten all of these allen set screws in all the pillow block bearing



STEP

7

Be careful to assemble all components in the sequence they are presented.

A. Open hardware package labeled “Step 7”.

B. See Note 1. Install weight carriage (AK) onto pivot shaft that is welded to vertical mainframe (E).

C. See Note 2. Install pillow block bearing (22) on to weight carriage (AK). Secure as shown using:
two 38 (round allen head 10mm x 30mm full thread bolt)
two 55 (spring lock washer 10mm)

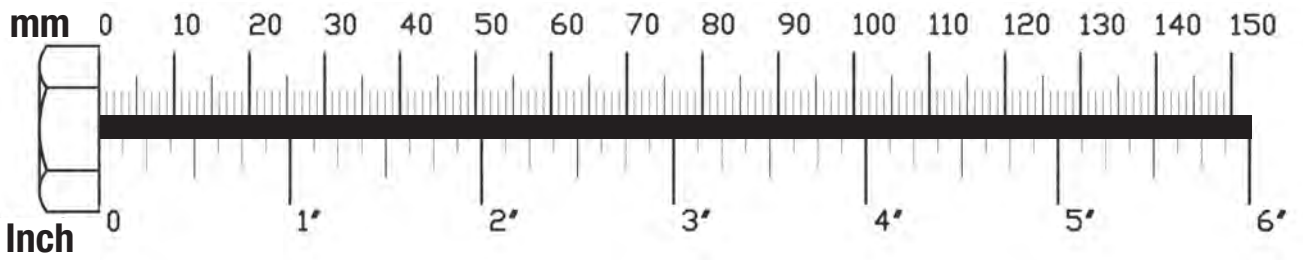
D. Slide 23" lat weight post (AY) into weight carriage (AK).

E. Slide both Olympic adapter sleeves (4) over 23" lat weight post (AY). Install as shown by using:
two 51 (flat washer 10mm x30mm)
two 55 (spring lock washer 10mm)
two 40 (round allen head 10mm x 20mm full thread bolt) *
two 5 (plastic ball-end cap 2")
two 21 (rubber donut)

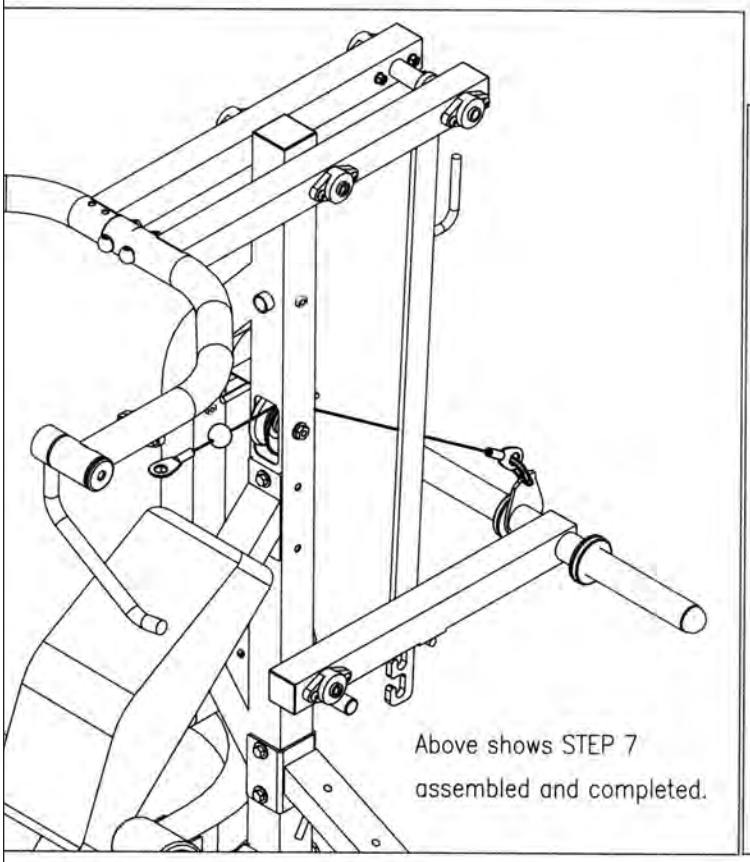
*** Note: You should wrench tighten these bolts now. You will need two (6mm) allen wrenches for this step. To lock Olympic adapter sleeves in place, use both allen wrenches at the same time and turn them in opposite directions to tighten.**

F. Install pulley (9) into opening of vertical mainframe (E) as shown. Important: be sure that pulley spacers are in place and are flush on each side of the pulley. Install using:
one 66 (hex bolt 10mm x 90mm partial thread)
two 56 (flat washer 10mm)
two 52 (zinc bushing 10mm)
one 54 (nylon lock nut 10mm)

G. Install cable (62) by feeding the plain eye end of the cable over the pulley as shown. Then, attach snap link to plain eye end of cable and to hole in flange of weight carriage (AK).



STEP 7



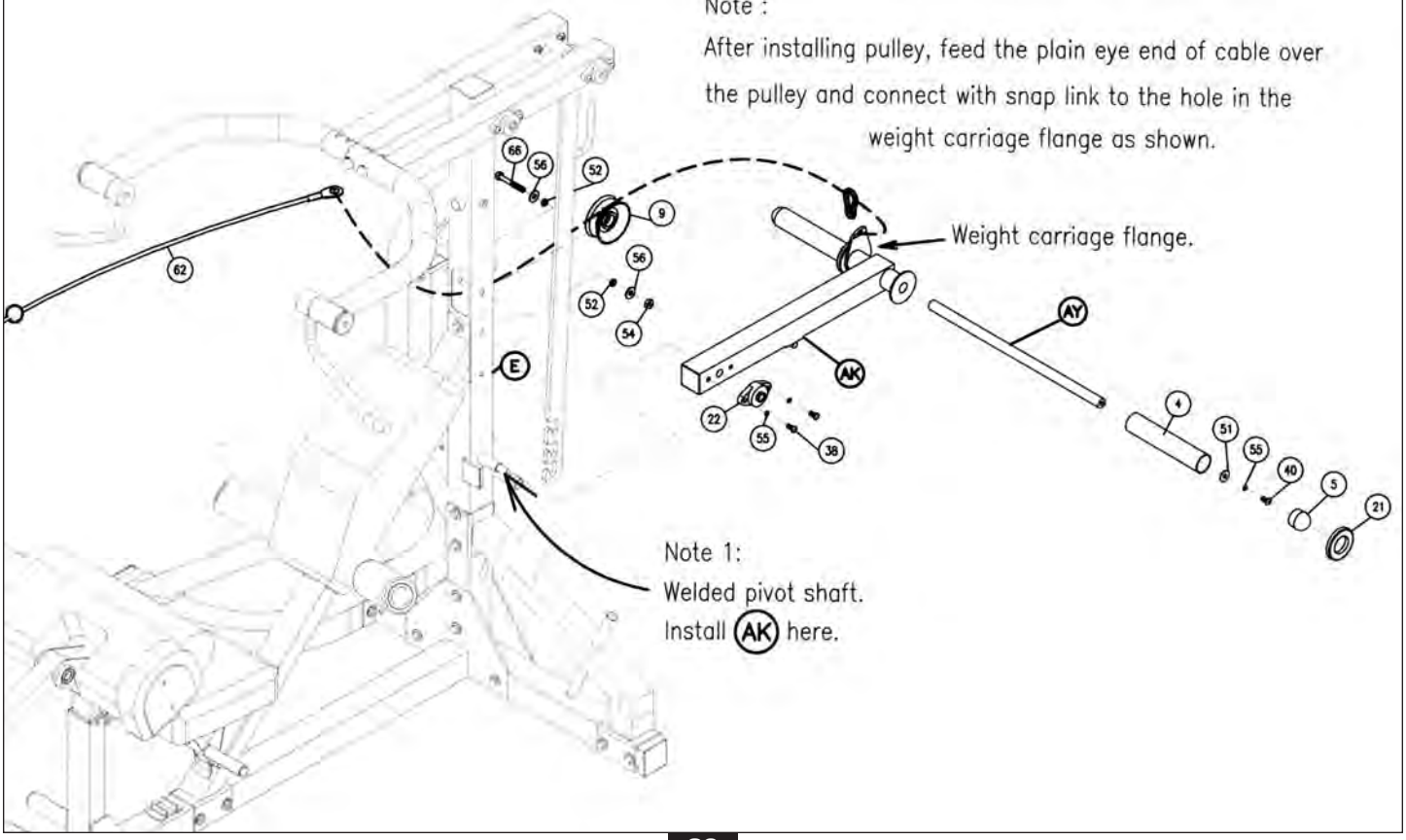
Above shows STEP 7
assembled and completed.

Note 2:
There are two small allen set screws in each pillow block bearing (22).

For best alignment of this system you should loosen all allen set screws before installing the pillow block bearings.

The last and final step of the assembly process is to wrench tighten all of these allen set screws in all the pillow block bearings.

Note :
After installing pulley, feed the plain eye end of cable over the pulley and connect with snap link to the hole in the weight carriage flange as shown.



STEP
8

Be careful to assemble all components in the sequence they are presented.

A. Open hardware package labeled “Step 8”.

B. Align pivot point of press cam (AM) with pivot hole of vertical mainframe (E). Slide pivot shaft (AE) thru press cam and thru mainframe. Lock in place using:
one 41 (square head bolt 10mm x 50mm with dog point)
one 53 (standard nut 10mm)

Note: Be sure that (41) bolt goes into the hole in the center of the pivot shaft (AE) and wrench tighten (41) bolt first and then wench tighten (53) nut last. It may be necessary to “feel” for the hole in the center of the shaft by sliding a very small diameter allen wrench all the way thru first, to help you line up all parts.

C. Install pop pin handle (AQ), pop pin handle spring (AR) and pop pin plunger (AS) into right press beam (AP). Note; it is best to permanently secure the pop pin handle to the pop pin plunger by using Super Glue.

D. See Note 1. Slide right press beam (AP) on to the pivot shaft (AE). Install pillow block bearing (22) on to right press beam (AP) as shown using:
two 38 (round allen head 10mm x 30mm full thread bolt)
two 55 (spring lock washer 10mm)

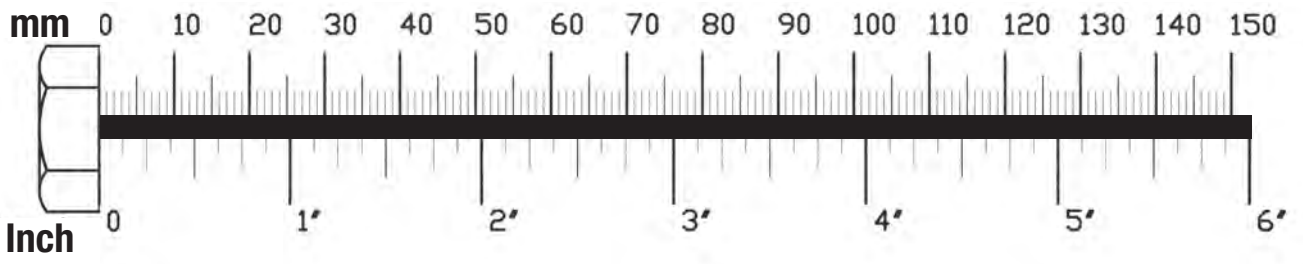
E. See Note 1. Slide left press beam (AN) on to the pivot shaft (AE). Install pillow block bearing (22) on to left press beam (AN) as shown using:
two 38 (round allen head 10mm x 30mm full thread bolt)
two 55 (spring lock washer 10mm)

Note: At this point you should close the gap between the left and right press beams at their connection point. Use a rubber mallet to knock the two parts together tightly.

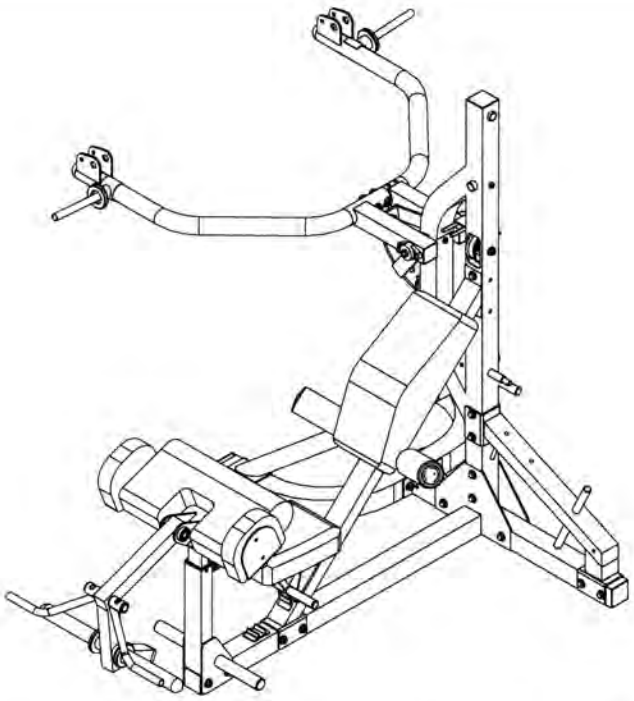
F. Secure left and right press beams together by using:
two 36 (hex bolt 10mm x 75mm partial thread)
four 51 (flat washer 10mm)
two 54 (nylon lock nut 10mm)

You should now wrench tighten all bolts. Do NOT wrench tighten any pad bolts.

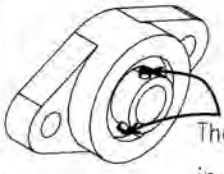
G. Install two plastic bolt end covers (26) over bolts (36).



STEP 8



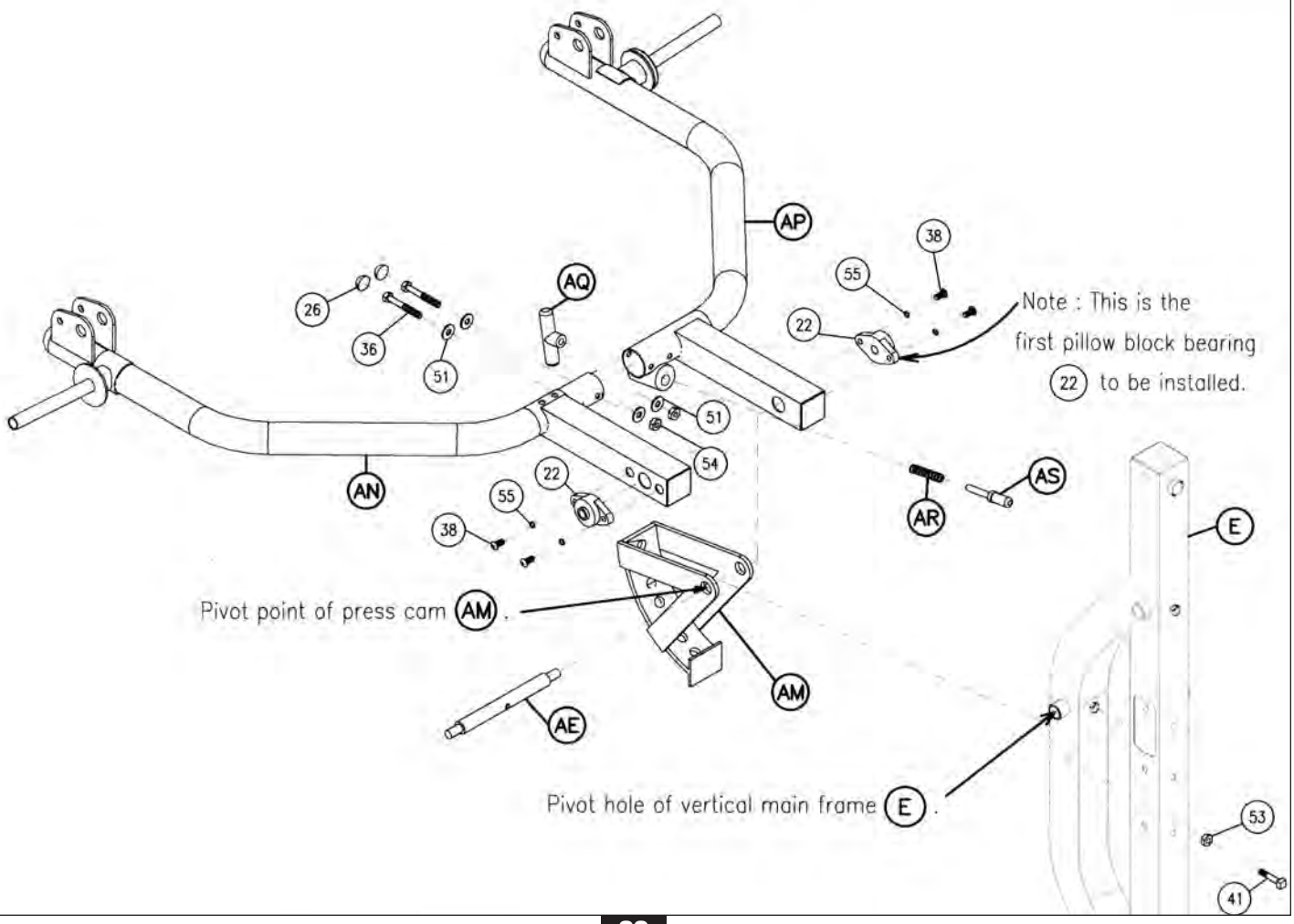
Above shows STEP 8 assembled and completed.



Note 1:
There are two small allen set screws in each pillow block bearing (22).

For best alignment of this system you should loosen all allen set screws before installing the pillow block bearings.

The last and final step of the assembly process is to wrench tighten all of these allen set screws in all the pillow block bearings.



STEP
9

Be careful to assemble all components in the sequence they are presented.

A. Hardware for Step 9 and Step 10 has been included along with hardware packs for Step 1 - Step 8.

B. Align pivot point of right press handle (AV) with pivot hole of right press beam (AP).
Slide the 2 3/8" pivot shaft (AU) thru press beam and press handle. Secure in place using:
two 51 (flat washer 10mm x 30mm)
two 55 (spring lock washer 10mm)
two 40 (round allen head 10mm x 20mm full thread bolt)

C. Repeat the above to install left press handle (AT) in to left press beam (AN).

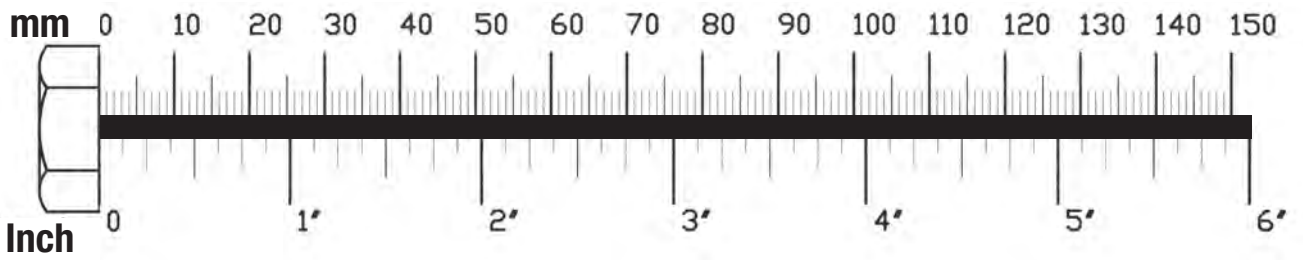
D. Install Olympic adapter sleeves (4) on to both press beams as shown using:
two 51 (flat washer 10mm x 30mm)
two 55 (spring lock washer 10mm)
two 40 (round allen head 10mm x 25mm full thread bolt) You should wrench tighten these bolts now.
two 5 (round plastic ball-end caps 2")
two 21 (rubber donut)

You should now wrench tighten all bolts. Do NOT wrench tighten any pad bolts.

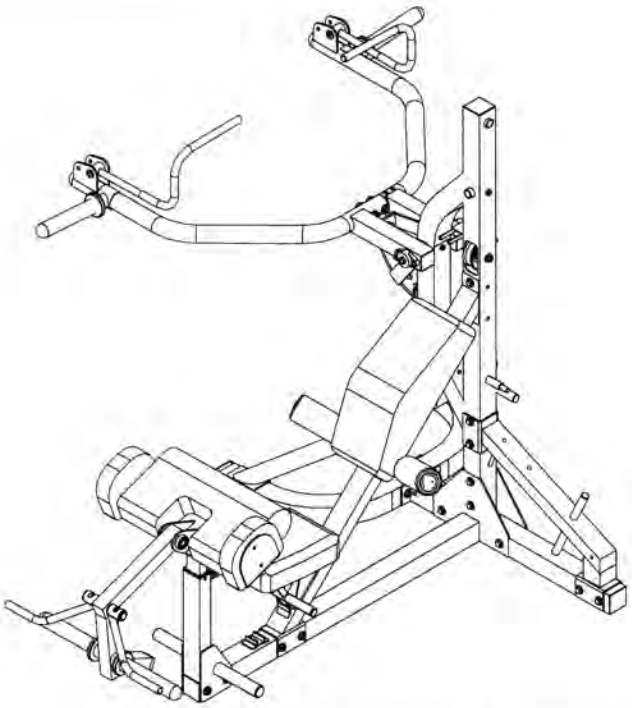
E. You should now tighten the two small allen head set screws in each of the pillow block bearings (22).

Congratulations! You are done. After assembly, you should check all functions to ensure correct operation. If you experience problems, first recheck the assembly instructions to locate any possible errors made during assembly. If you are unable to correct the problem, call the dealer from whom you purchased the machine or call 1-800-556-3113 for the dealer nearest you.

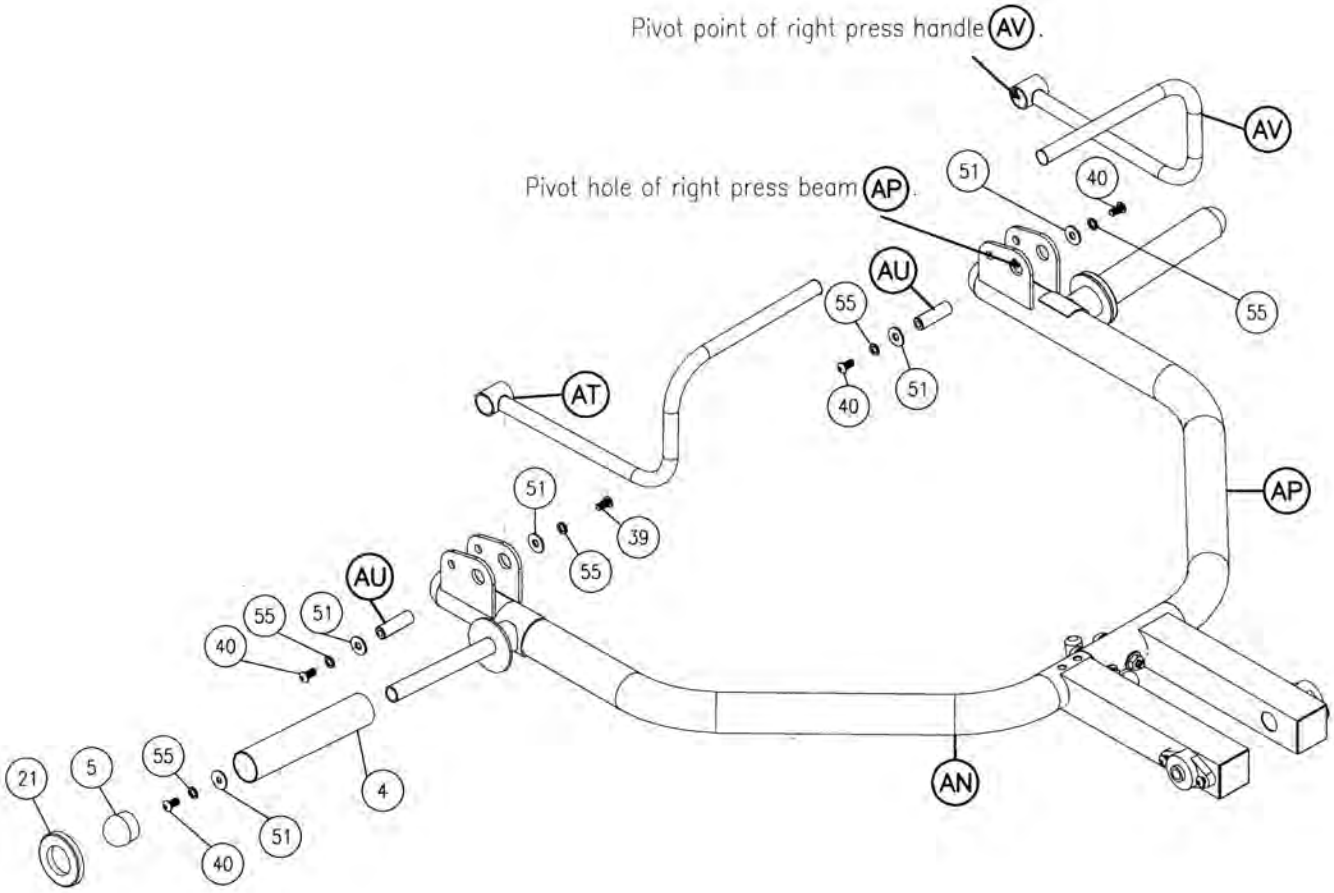
Note: If any bolts seem to loosen periodically, use Loctite 242 for a long-term cure.



STEP 9

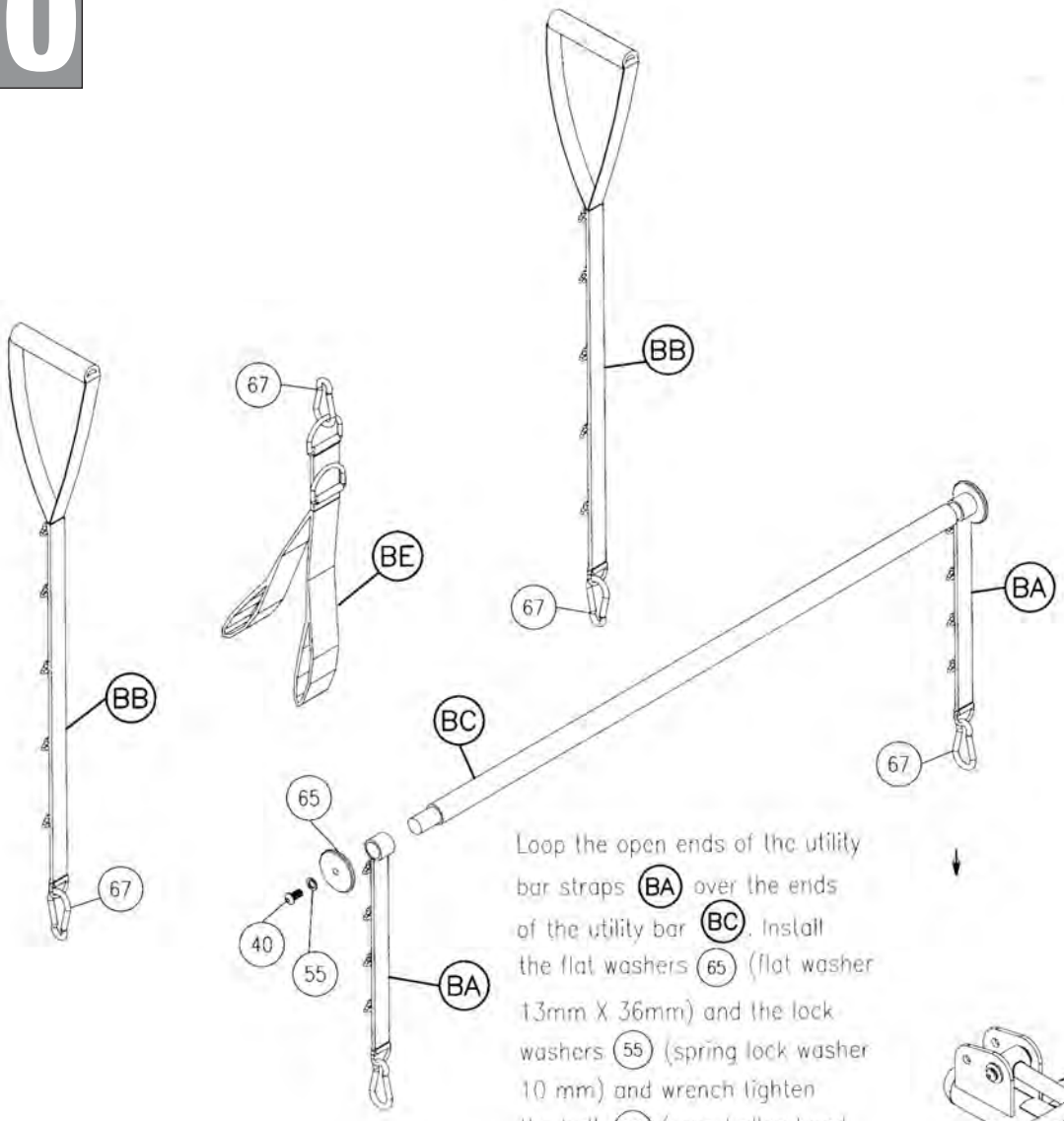


Above shows STEP 9 assembled and completed.

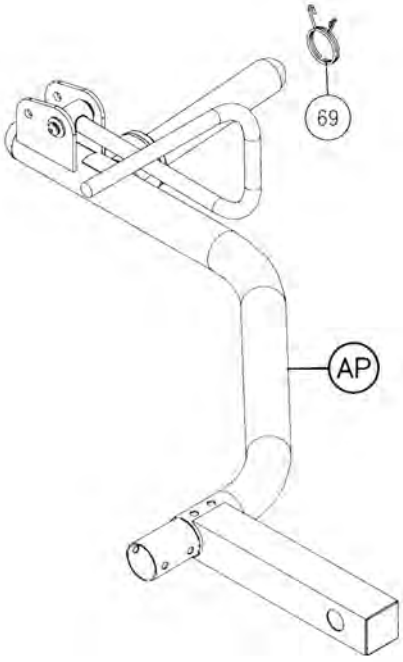


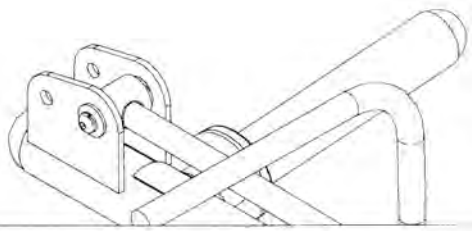
STEP 10

Accessories



Loop the open ends of the utility bar straps (BA) over the ends of the utility bar (BC). Install the flat washers (65) (flat washer 13mm X 36mm) and the lock washers (55) (spring lock washer 10 mm) and wrench tighten the bolt (40) (round allen head 10mm X 20mm full thread bolt).





WARNING !
Olympic spring collars are included for all weight posts on this machine. To avoid serious injury you must use these collars to lock the weight plates on to the weight posts.

Safety Guidelines

Successful resistance training programs have one prominent feature in common...safety. Resistance training has some inherent dangers, as do all physical activities. The chance of injury can be greatly reduced or completely removed by using correct lifting techniques, proper breathing, maintaining equipment in good working condition, and by wearing the appropriate clothing.

1. **It is highly recommended that you consult your physician before beginning any exercise program. This is especially important for individuals over the age of 35, or persons with pre-existing health problems.**

2. **Always warm up before starting a workout. Try to do a total body warm up before you start. It is especially important to warm up the specific muscle groups you are going to be using. This can be as simple as performing a warm up set of high repetitions and light weight for each exercise.**

3. **Use proper form. Focus on only working the muscle groups intended for the exercise you are doing. If there is strain elsewhere, you may need to re-evaluate the amount of weight that is involved with the lift. Keeping proper form also includes maintaining control through an entire range of motion.**

4. **Breath properly. Inhale during the eccentric phase of the exercise, and exhale during the lifting, or concentric phase. Never hold your breath during any part of an exercise.**

5. **Always wear the appropriate clothing and shoes when exercising. Wearing comfortable athletic shoes with good support and loose fitting, breathable clothing will reduce the risk of injury.**

6. **Maintaining equipment in proper operating condition is of utmost importance for a safe resistance training program. Pulleys and cables should be checked for wear frequently and replaced as needed. Equipment should be lubricated as indicated by the manufacturer.**

7. **Read and study all warning labels on this machine. It is absolutely necessary that you familiarize yourself and all others with the proper operation of this machine prior to use.**

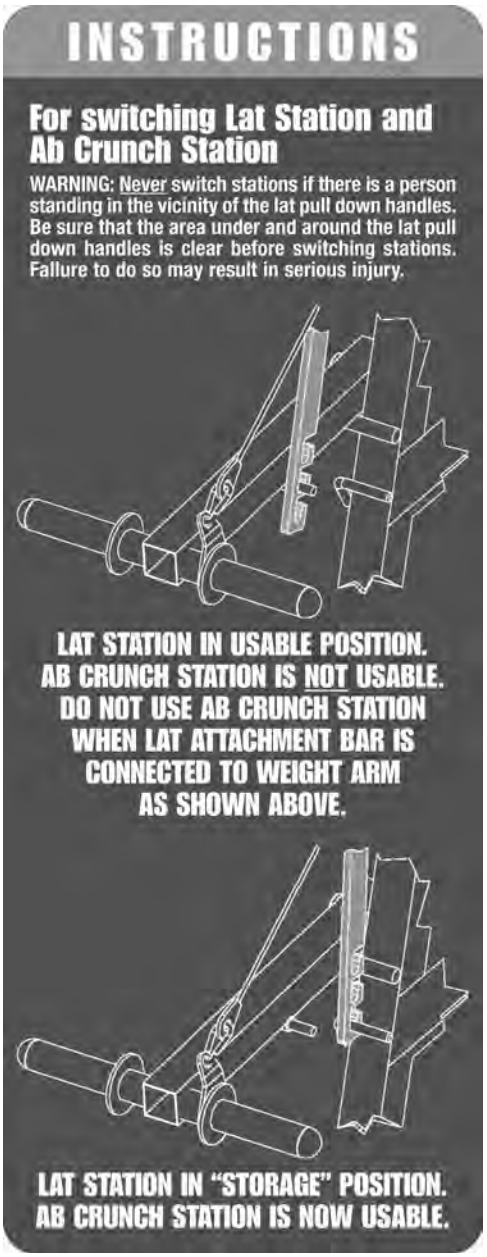
8. **Keep hands, limbs, loose clothing and long hair well out of the way of all moving parts.**

9. **Do not attempt to lift more weight than you can control safely.**

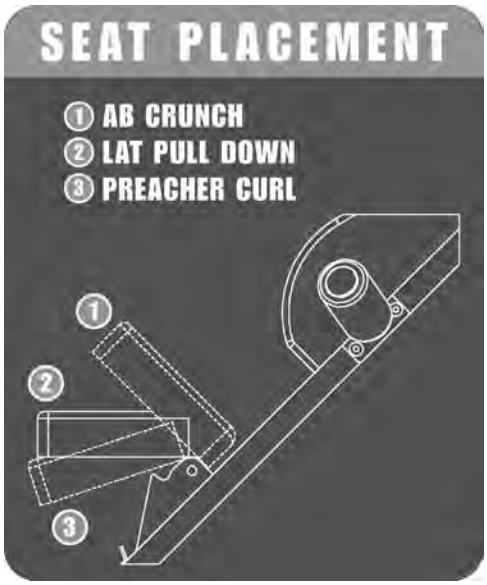
10. **Inspect the machine daily for loose or worn parts. If a problem is found do not allow the machine to be used until all parts are tightened or worn or defective parts are repaired or replaced.**

Be sure that all users carefully read and understand all warning, safety and maintenance labels on the machine before each use. Failure to do so may result in serious injury. It is imperative that you retain this Owner's Manual and be sure all warning labels are legible and intact. Replacement Owner's Manuals and labels are available from your local Body-Solid dealer. If you have any questions about the operation, set up or maintenance of this machine please call our customer service department at 1 (800) 556-3113.

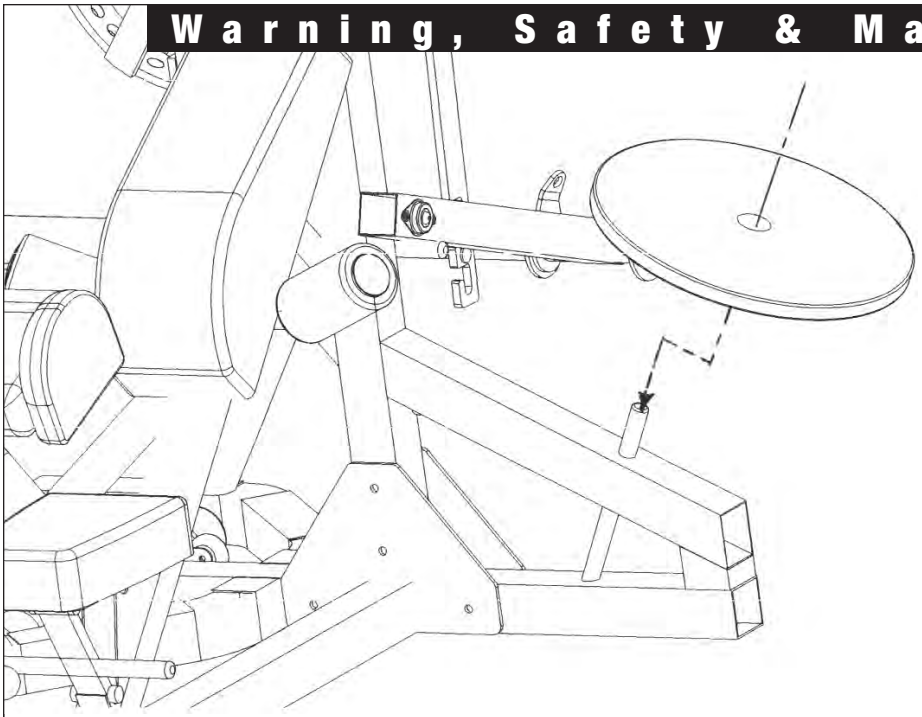
#SBL460DWLBP-2
Warning Label for Press Station



#SBL460DWLAT-1
Warning Label for Lat Station



#SBL460DWLSP-3
Label for Seat Placement



ATTENTION!

If you are pressing or squatting more than 325 Lbs. at the press station, you must counter-balance the machine by putting at least one 45 Lb. Olympic plate on the counter-balance weight post (AW) (see Owner's Manual page 8). You should never drop or bounce the press arm bars when working out.

Be sure that all users carefully read and understand all warning, safety and maintenance labels on the machine before each use. Failure to do so may result in serious injury. It is imperative that you retain this Owner's Manual and be sure all warning labels are legible and intact. Replacement Owner's Manuals and labels are available from your local Body-Solid dealer. If you have any questions about the operation, set up or maintenance of this machine please call our customer service department at 1 (800) 556-3113.

THERE IS A RISK ASSUMED BY INDIVIDUALS WHO USE THIS TYPE OF EQUIPMENT. TO MINIMIZE RISK, YOU MUST FOLLOW THESE RULES:

1. Inspect equipment before each workout. Check that all nuts, bolts, screws and pop pins are in place and fully tightened. Also, before use, check cables for signs of wear. Replace all worn parts immediately. Never use machine if any parts are damaged or missing.
   FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS INJURY.
2. Keep clear of the cables and all moving parts when the machine is in use.
3. Always make sure all Snap Links are closed when doing any cable/pulley/strap exercises.
4. Exercise with care. Perform your exercises at a smooth moderate pace; never perform jerky or uncoordinated movements that may cause injury.
5. It is recommended that you should workout with a training partner.
6. Do not allow children or minors to play on or around this equipment.
7. If unsure of proper use of equipment, call your local Body-Solid distributor or the Body-Solid customer service department at 1-800-556-3113.
8. WARNING: Consult your physician before starting your exercise program. For your own safety, do not begin any exercise program without proper instruction. RAL8-6-03 WC-54

#DWRULE-4
Warning Label for Rules

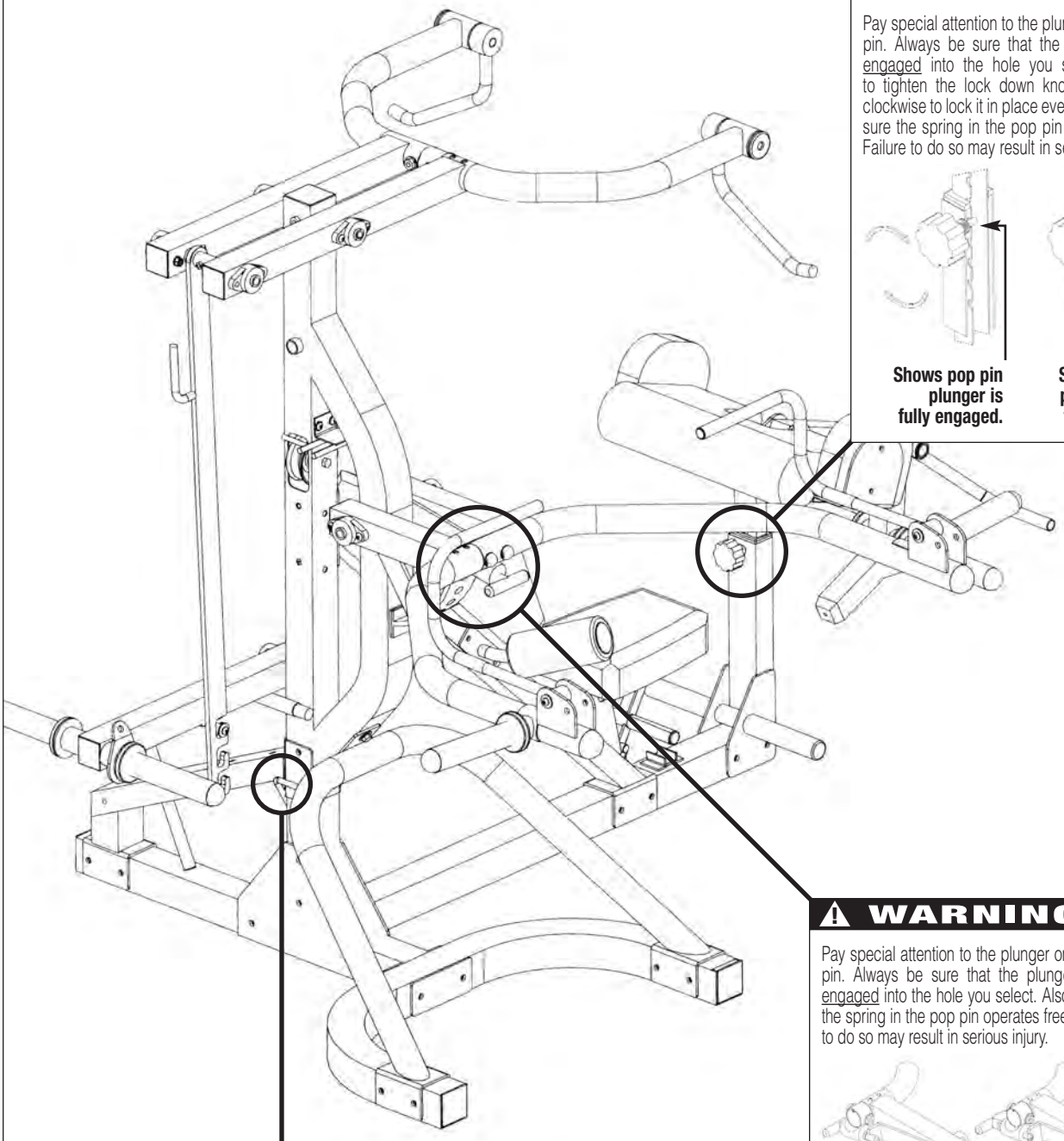
MAINTENANCE SCHEDULE

Check the function and integrity of the following components. As noted, Inspect equipment before each workout. Replace all damaged, broken or worn components immediately.

		DAILY	WEEKLY
Cables:	Check tension, end fittings, and coating	✓	
	Check that locking nut at weight stack is tight		✓
Upholstery:	Wipe down and dry	✓	
	Clean and condition		✓
Frame:	Wipe down and dry	✓	
	Polish / Wax		✓
Chrome:	Wipe down and dry	✓	
	Polish / Lubricate		✓
Nuts / Bolts / Fasteners: Tighten and / or adjust as needed			✓
Guide Rods: Lubricate and clean			✓
Linear Rods: Lubricate and clean			✓
Seat Sleeves: Lubricate and clean			✓
Adjustments / Locking Pins / Tightening Knobs			✓
Weight Stack Pins			✓
Warning Instruction Labels			✓
Springs / Pop Pins		✓	
Anti Skid Surfaces			✓
Hand Grips / Rollers			✓

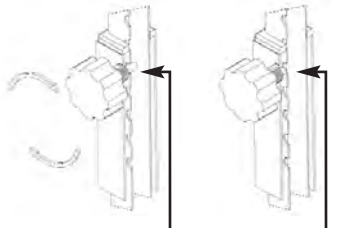
For Body-Solid Customer Service
Call 1-800-556-3113
#MSSTKB0803

#DWSM-5
Warning Label for Maintenance



⚠ WARNING ⚠

Pay special attention to the plunger on this pop pin. Always be sure that the plunger is fully engaged into the hole you select. Be sure to tighten the lock down knob by turning it clockwise to lock it in place every time. Also, be sure the spring in the pop pin operates freely. Failure to do so may result in serious injury.



Shows pop pin plunger is fully engaged.

Shows pop pin plunger is NOT fully engaged.

⚠ WARNING ⚠

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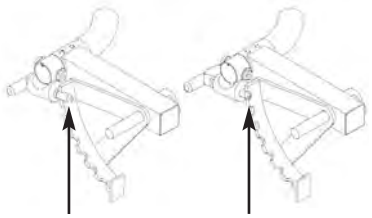

Shows pop pin plunger is fully engaged.

Shows pop pin plunger is NOT fully engaged.

⚠ WARNING ⚠

This welded bar holds the lat adjustment bar (AH) in the "storage" position. Pay special attention to securely lock the lat adjustment bar on to this welded bar when putting the lat station in the "storage" position. Never switch stations if there is a person standing in the vicinity of the lat pull down handles. Be sure that the area under and around the lat pull down handles is clear before switching stations. Failure to do so may result in serious injury.

NOTES

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PHRASES, TERMS, TIPS & GUIDELINES

BEGINNER'S GUIDELINES

- Work out at least two times a week.
- Include six to eight exercises that train major muscle groups.
- Perform two or three sets of at least eight to 12 repetitions.

AEROBIC
Exercise that primarily uses oxygen to burn fuel at low to moderate levels of intensity. Running and jogging are examples of aerobic exercise.

ANAEROBIC
Exercise that primarily uses the body's stored fuel for energy. Intense weightlifting is an example of an anaerobic exercise.

ATROPHY
Decrease of a muscle caused by the decrease in the size of its cells because of inactivity.

BALLISTIC STRETCHING
A stretching technique that involves a bouncing or bobbing movement during the stretch. The final position is not held. This is not a recommended stretching technique.

BREATHING
Never hold your breath during any part of an exercise. Holding your breath may cause severe intra-thoracic pressure and raise blood pressure leading to dizziness, blackout or other complications. The rule of thumb is to exhale on exertion and inhale on the return part of the exercise.

CARDIOVASCULAR
Referring to the heart, lungs, and other periphery systems involved in the transport of oxygen throughout the body.

CHALLENGE YOUR MUSCLES
All strength training should progress gradually, using increases in weight until your goals are reached. Then, change your workout to include increased reps or a higher weight resistance. Alter the order of your exercises, perform multiple sets or different exercises to maintain results or reach new goals.

CHANGE ROUTINE
Beginner's please note: If you want to make changes in the exercise routine that you do, wait until about the six to eight week point. Advanced lifters may want to change routines to avoid plateus in gaining size or strength.

CIRCUIT TRAINING
Exercise stations that consist of various combinations of weight training, flexibility, calisthenics, and aerobic exercise.

CONCENTRIC MUSCLE ACTION
The muscle shortens while contracting against resistance.

ECCENTRIC MUSCLE ACTION
The muscle lengthens while contracting against resistance.

EXERCISE FREQUENCY
Exercise each muscle group 2-3 times per week. Allow a minimum of 48 hours rest for each muscle group worked. If you are doing a total-body workout, three training sessions per week, performed on every second day, is adequate.

EXERCISE LARGE MUSCLES FIRST
You should work your large muscle groups first (ie. squat, bench press, lat pulldown) before you exercise your small muscle groups (ie. bicep curls, tricep pressdowns, lateral raises).

EXERCISE PROGRAM DURATION
A weight training routine should take anywhere from 45 minutes to one hour to complete. Add another 20 to 60 minutes when you include stretching, warm-up, aerobics and cool-down.

GIVE YOUR MUSCLES A REST
You'll get the most out of strength training if you give your muscles at least 48 hours rest to recover and rebuild between strength training workouts.

HYPERTROPHY
Enlargement of a muscle caused by an increase in the size of its cells in response to weight training.

INTENSITY
The degree to which the body is worked during exercise.

ISOKINETIC EXERCISE
Resistance is given at a fixed velocity of movement with accommodating intensity. A machine that moves you through an entire range of motion at a preset speed and will not change no matter how much pressure is put forth by the individual.

ISOMETRIC EXERCISE
Contracts the muscle statically without changing its length. Example: Attempting to lift a weight heavier than you can handle, but cannot move.

ISOTONIC EXERCISE
Shortens and lengthens the muscle through a complete range of motion. This defines weight training with full range of motion.

MUSCLE FATIGUE
Fatigue is when you can't possibly do another rep without sacrificing form.

MUSCULAR ENDURANCE
The ability to perform repetitive muscular contractions against some resistance.

MUSCULAR STRENGTH
The maximum force that can be applied by a muscle during a single maximum contraction.

OSTEOPOROSIS
A decrease in bone density.

PLYOMETRIC EXERCISE
A technique that includes specific exercises which encompass a rapid stretch of a muscle eccentrically, followed immediately by a rapid concentric contraction of that muscle for the purpose of facilitating and developing a forceful explosive movement over a short period of time. Examples of these are using medicine balls for upper extremity and depth jumping for lower extremeity.

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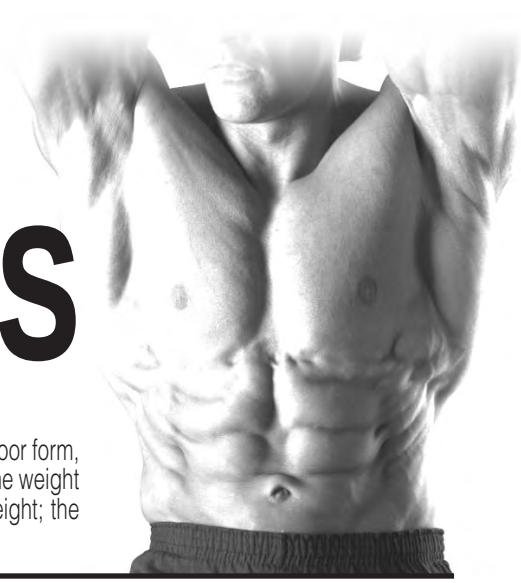
PHRASES, TERMS, TIPS & GUIDELINES



STARTING RESISTANCE LEVEL

If you begin weight training at too high a level, you risk serious injury. You will also develop poor form, which will hinder your efforts and discourage you. Use this as a guideline: if you cannot lift the weight eight times with proper form, the weight is too heavy. Similarly, don't choose too light a weight; the last two or three repetitions of your set should be difficult.

POWER
Power is the rate of performing work. Power during a repetition is defined as the weight lifted times the vertical distance the weight is lifted divided by the time to complete the repetition. Power during a repetition can be increased by lifting the same weight the same vertical distance in a shorter period of time. Power can also be increased by lifting a heavier resistance the same vertical distance in the same period of time as a lighter resistance.

PROGRESS GRADUALLY
Increase reps before increasing resistance. Reduce rest intervals between sets to increase intensity.

PROGRESSIVE RESISTANCE
The principle of continually adding more weight to a specific exercise as your muscles become stronger to adapt to the heavier weights.

PROPER FORM
Focus on the proper motion of the exercise and concentrate on the specific muscles being used. Do not sacrifice proper form to lift heavier weight or to perform more repetitions. Proper form also means lifting in a smooth, fluid motion. If you feel strain elsewhere, you should re-evaluate the amount of weight you are lifting or have a qualified professional critique your exercise motion.

PROPER POSTURE
Maintaining proper posture will greatly reduce chances of injury and maximize exercise benefit. When standing always keep your feet shoulder-width apart. Do not lock your knees. Locking your knees can put unnecessary strain on them. Keep your back flat and straight, making sure not to twist or arch it in order to complete a repetition.

PROPER TECHNIQUE
To get the most out of strength training and to reduce the chance of injury, use proper weight training techniques. These include working your muscles through their full range of motion (but not locking any joints), lifting at a speed at which you can control the weight and stop easily if necessary.

RANGE OF MOTION
Moving through a complete range of motion (ROM) allows the muscles to stretch before contraction and increases the number of muscle fibers being recruited. This produces maximum contraction and force. By working the full ROM, flexibility will be maintained and possibly increased.

REPETITION
A repetition is one complete movement of an exercise. It normally consists of two phases: the concentric muscle action, or lifting of the resistance, and the eccentric muscle action, or lowering of the resistance.

REPETITION MAXIMUM (RM)
This is the maximum number of repetitions per set that can be performed at a given resistance with proper lifting technique. Thus, a set at a certain RM implies the set is performed to momentary voluntary fatigue. 1RM is the heaviest resistance that can be used for one compete repetition of an exercise. 10 RM is a lighter resistance that allows completion of 10 (but not 11) repetitions with proper exercise technique.

REST INTERVAL
Allow a brief pause between sets to give your muscles a chance to partially recover before working them again. For power and muscle size development allow a 3 to 4 minute rest interval between sets. For muscular endurance and definition allow a 30 second rest interval. For strength training allow a 60 to 90 second rest interval.

RISK SHOULD NOT EXCEED BENEFIT
If the risk of a specific exercise exceeds its potential benefit, it is best to stay on the conservative side. There are several ways to work specific muscle groups. Choose those that provide minimal risk. Ask a fitness professional for guidance.

ROUTINE
The specific exercises, sets, reps and weight for a specific body part.

SET
This is a group of repetitions performed continuously without stopping. While a set can be made up of any number of repetitions, sets typically range from 1 to 15 repetitions.

SMALL MUSCLE GROUP EXERCISE
Single joint movement and isolation exercises (i.e. bicep curls, tricep pressdowns and leg extensions).

SPEED OF MOVEMENT
Strength training movements should be slow and controlled. Do not use momentum to complete an exercise movement. Momentum puts unnecessary stress on tendons, ligaments and joints. Using momentum in your exercise movements does not develop increased strength.

STATIC STRETCHING
A stretching technique that involves holding a specific muscle or muscle group at a desired length for a certain period of time. This type of stretching is highly recommended.

STOP TRAINING IF YOU FEEL PAIN
If you feel pain during a specific exercise stop immediately. Any continuation may aggravate an existing injury. Re-evaluate your routine to make sure that you are doing a proper warm up. Decrease the amount of weight you are lifting. Talk to a qualified personal trainer, health professional or your doctor.

STRENGTH
Strength is the maximal amount of force a muscle or muscle group can generate in a specified movement pattern at a specified velocity of movement.

WARM UP
This cannot be stressed enough. Many workout-related injuries can be avoided by a proper warm up routine. Try to do a total body warm up before you start training. A good example of a total body warm up is using a stationary bike, treadmill, elliptical, rowing or skiing machine. It is especially important to warm up specific muscle groups you are going to be using. Your muscles need a 5 to 15 minute warm up as well as a brief cool down. This can be as simple as performing a warm up set of high repetitions and light weight (25% to 50% of your training weight) for each exercise.

WORKOUT
The routine, specific exercises, weights, sets, and reps for one or more body parts.

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NUTRITION

Good nutrition is a diet in which foods are eaten in proper quantities and with the needed distribution of nutrients to maintain good health. Malnutrition, on the other hand, is the result of a diet in which there is an underconsumption, overconsumption, or unbalanced consumption of nutrients that leads to disease or an increased susceptibility to disease. What is stated in the above definitions is the fact that proper nutrition is essential to good health. A history of poor nutritional choices will eventually lead to poor health consequences.

There are many substances necessary for the proper functioning of the body. Nutrients are the substances that the body requires for the maintenance of health, growth, and to repair tissues. Nutrients can be divided into six classes: carbohydrates, fats, proteins, vitamins, minerals and water. Carbohydrates, or "carbs", are nutrients that are composed of carbon, hydrogen and oxygen, and are essential sources of energy in the body. Grains, vegetables, and fruits are excellent sources of carbohydrates. It is recommended that at least 55% to 60% of the total number of calories consumed come from carbohydrates (American Diabetes Association, Diabetes & Exercise, 1990). It is further recommended that 10% or less of the total calories consumed come from simple sugars like a candy bar.

One of the many benefits of consuming foods that are high in complex carbohydrates, such as rice, pasta, and whole grain breads, is that they also typically contain dietary fiber. Dietary fiber is a term used when referring to substances found in plants that cannot be broken down by the human digestive system. Although fiber cannot be digested, it is important in helping to avoid cancers of the digestive system, hemorrhoids, constipation, and diverticular disease because it helps food move quickly and easily through the digestive system. It is recommended that people consume 20 to 30 grams of fiber per day (American Diabetes Association, Diabetes & Exercise, 1990). Excellent sources of dietary fiber are grains, vegetables, legumes, and fruit.

Fats are an essential part of a healthy diet and serve vital functions in the human body. Among the functions performed by fats are temperature regulation, protection of vital organs, distribution of some vitamins, energy production, and formation of component parts of cell membranes. Like carbohydrates, fats are composed of carbon, hydrogen, and oxygen. However, their chemical structure is different.

Both animals and plants provide sources of fat. Saturated fats come primarily from animal sources and are typically solid at room temperature. Plant sources of saturated fats are palm oil, coconut oil, and cocoa butter. A high intake of saturated fats is directly related to increased cardiovascular disease. Unsaturated fats are typically liquid at room temperature. Corn, peanut, canola, and soybean oil are sources of unsaturated fats. It is recommended that no more than 30% of one's diet be composed of fats. Ten percent or less of the total calories consumed should come from saturated fats. One way to reduce saturated fat intake would be to substitute margarine for butter.

Proteins are substances composed of carbon, hydrogen, oxygen, and nitrogen. Proteins are made by combining amino acids. Amino acids are nitrogen-containing building blocks for proteins that can be used for energy. Amino acids can combine in innumerable ways to form proteins, and it is estimated that tens of thousands of different types of proteins exist in the body. It is the ordering of the amino acids that provides the unique structure and function of proteins.

There are proteins in both meat products and plant products. Animal sources of protein such as milk, meat and eggs contain the eight essential amino acids (amino acids that the body cannot synthesize and therefore must be ingested). Plant sources of protein such as beans, starchy vegetables, nuts, and grains do not always contain all eight amino acids. Because of this, vegetarians must consume a variety of protein-containing foods. It is recommended that proteins make up 10% to 15% of one's daily calories. This will ensure adequate protein for growth, maintenance, and the repair of cells. Protein requirements for adults are not as high as those recommended for infants, children, and young adults. Note: individuals who are training intensely will have an increase in their protein requirements.

Vitamins are organic substances that are essential to the normal functioning of the human body. Although vitamins do not contain energy to be used by the body, these substances are essential in the metabolism of fats, carbohydrates and proteins. Because of the critical role vitamins play, it is necessary that they exist in proper quantities in the body.

Minerals are inorganic molecules that serve a variety of functions in the human body. The minerals that appear in the largest quantities (calcium, phosphorus, potassium, sulfur, sodium, chloride, and magnesium) are often called macrominerals. Other minerals are also essential to normal functioning of the body, but because they exist in smaller quantities (chromium, iron, copper, fluoride, iodine, manganese, molybdenum, selenium, and zinc) they are called microminerals.

A mineral that is often consumed in inadequate amounts by Americans is calcium. Calcium is a mineral important in the mineralization of bone, muscle contraction, and the transmission of nerve impulses. Osteoporosis is a disease characterized by a decrease in the total amount of bone mineral in the body and by a decrease in strength of the remaining bone. This condition is most common in the elderly but may also exist in younger people who have diets inadequate in calcium or vitamin D or both.

Iron is another mineral that is often underconsumed by Americans. This is especially true of women. The oxygen-carrying properties of hemoglobin (blood) depend on the presence of iron. Anemia is a condition characterized by a decreased capacity to transport oxygen in the blood, and is also common in those lacking a sufficient amount of iron intake. Red meat and eggs are excellent sources of iron. Additionally spinach, lima and navy beans, and prune juice are excellent vegetarian sources of iron.

Sodium, on the other hand, is a mineral that many Americans over-consume. High sodium intake has been linked with hypertension, as well as high blood pressure. People can substantially reduce their sodium intake by limiting consumption of processed foods and decreasing the amount of salt added to foods when cooking.

In conclusion...don't forget hydration. Water is considered an essential nutrient because of its vital role in the normal functioning of the body. Water contributes approximately 60% of the total body weight and is essential in creating an environment in which all metabolic processes occur. Water is necessary to regulate temperature and to transport substances throughout the body.

FOLLOW THESE BASIC NUTRITIONAL GUIDELINES FOR GAINS IN STRENGTH AND LEAN MUSCLE MASS:

1. **Choose your foods carefully. Try getting your carbohydrates from sources such as rice, vegetables, beans, whole grains, pasta and fruit. Good protein sources include fish, chicken, turkey, lean meat and low-fat or nonfat dairy products.**
2. **Minimize your fat intake.**
3. **Drink a minimum of 10 eight-ounce glasses of water each day.**
4. **Eat four to six small meals a day, about three hours apart. Small meals are more easily digested and result in greater nutrition absorption.**
5. **Avoid eating junk food and fast food.**
6. **Time your protein intake of 40-55 grams approximately 75 minutes after your workout.**
7. **Immediately following your workout, replenish your glycogen stores with approximately 50-75 grams of carbohydrates.**

For more information on nutrition visit your local library or book store. There are many excellent books available.

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EXERCISE PRESCRIPTION

Sets

Sets are defined as a combination of any number of reps of one exercise. The number of sets used in a workout is directly related to training results. Typically, two to three sets are used by intermediate and advanced lifters to achieve optimum gains in strength. Experts agree that multiple-set systems work best for the development of strength and muscular endurance. Gains will be made at a faster rate by using a multiple-set system than gains achieved through a single-set system. The use of a single set of an exercise is recommended and very effective for individuals who are untrained or just beginning a resistance training program. One-set programs might also be used for simple maintenance once you are in shape. It is important to note that low-volume set programs will increase strength in untrained individuals, but more complex physiological adaptations, such as gains in muscle mass, tone, size, and performance usually requires higher-volume set training for the best results. Multiple sets of an exercise present a more intense training stimulus to the muscles during each set. Once your desired initial fitness level has been achieved, multiple-set performances of the exercise using the proper resistance (with specific rest periods between sets) will take you to the next level of strength training, endurance, and muscular development.

Resistance Used

The amount of resistance used for a specific exercise is probably the most important variable in resistance training. When designing a resistance training program, a weight for each exercise must be chosen. The use of repetition maximums (RM): the exact resistance that allows only a specific number of repetitions to be performed, is probably the easiest method for determining a resistance. Typically, one uses a training RM target or a RM target zone. Example: If your RM zone is 8 to 12 repetitions and you cannot lift the weight at least 8 times using proper form, the weight is too heavy. On the other hand, if you can easily lift the weight 12 times, the weight is too light. In either case, the weight needs to be changed. As the strength level of the lifter changes over time, the resistance is adjusted so a true RM target or target zone resistance is used.

Rest Periods Between Sets and Exercises

One frequently overlooked variable in exercise prescription is the length of the rest period between sets and between different exercises. Your desired fitness goals will normally determine the amount of time you allow your body to rest. Exercises involving high repetitions (15 to 20) and a high number of sets (3 to 4) with short rest periods (30 seconds) between sets will raise metabolic demands. This in turn will burn excess body fat and increase muscular endurance. Short rest periods are a characteristic of circuit weight training, and the resistances used are typically lighter. This type of workout is best for trimming body fat and toning muscle. Exercises with heavier resistance and fewer sets usually have a longer resting period between sets. The results of using this method are normally increased muscular strength and mass. If the desired outcome is to gain overall muscle mass, your exercise prescription should lean toward a higher weight resistance doing 2 to 6 repetitions per set, with a rest period of 3 to 4 minutes between each set.

Rest Periods Between Workouts

The amount of rest between training sessions depends on the recovery ability of the individual. Most experts agree that three workouts per week with one day of rest between sessions allows adequate recovery, especially for the beginner. If the resistance training is not excessive, only moderate amounts of delayed muscular soreness should be experienced one day after the session. As the lifter advances and his or her body is better able to tolerate and recuperate from the resistance exercise sessions, the frequency of training can be increased. Well-conditioned athletes may be capable of, and need training frequencies of 4 to 5 days in a row to improve significantly and achieve their desired goals. When consecutive-training-day sequences are used, it is usually beneficial to do different exercises for the same muscle groups and use different resistances for the exercises. When training is performed on consecutive days, it often involves the use of a split routine (different body parts exercised each day), or a split program (different exercises for the same body part performed each day). There are many books available at the library or your local book store for the intermediate and advanced weight training enthusiast. It is also recommended that you work with a qualified personal trainer to achieve your ultimate goals.

Order of Exercise

Leaders in the field of strength and conditioning believe that working the larger muscle groups first (chest, back, legs), should take priority over training the smaller muscle groups (biceps, triceps, deltoids, calves). The reason behind this exercise order is that the exercises performed in the beginning of the workout are the ones that are going to require the greatest amount of muscle mass to perform. Hence, exercising the smaller muscle groups first will deplete the body of the energy necessary to stimulate the larger muscle groups. Arm-to-leg ordering allows for some recovery of the arm muscles while the leg muscles are exercised. “Stacking” exercises is a common practice among body builders as a way to attempt to bring about muscle hypertrophy. Stacking is loading up different exercises on the same muscle group (ie. standing bicep curls, preacher curls, one arm concentration curls). The exercise order will have a significant impact on the training stimulus stress level in a training session.

Scheduling Training

Finding the time to do it is one of the most difficult aspects of a training program. Once you have established a time to workout you should plan a training routine based on what muscles to involve on which day. As previously discussed, the larger muscle groups such as the chest, back, and legs should take priority over working the smaller muscle groups. Give your muscles at least 48 hours (but no more than 72 hours) of rest in between sessions.

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TRAINING TIPS FOR BEGINNER'S

ARE YOU A "BEGINNER"?

A beginner can be classified as someone who has never touched a weight, may have lifted for a while, but has taken a substantial amount of time off, or has not consistently trained over the last six months. If you happen to fall into any of these categories, pay close attention, because the following information will be detrimental to the start of your training program.

As a beginner, one of the most common mistakes is doing too much. Because beginners often make good gains quickly, many fall into the trap of thinking that more is better. This may be true later in the training equation, but not for the novice. Some of the most common injuries occur as a result of taking on too much, too soon.

One of the questions most frequently asked is, "How much weight should I use?" Determining the weight for each exercise will vary from person to person. The weight for each exercise will be lifted in sets and repetitions. Repetition is defined as one execution of any exercise. A set is a combination of any number of repetitions of one exercise.

Experimentation at each exercise station is a good technique for determining the starting weight for an individual. Take the chest press exercise for example. Performing this exercise with a weight that can be pressed 30 times with ease will not help you achieve any particular goals. Adding the appropriate amount of weight that will allow you to perform a maximum of 8 to 12 repetitions will help you obtain the results you desire.

On the other hand, if you put too much weight on the press bar and press it 4 or 5 times, then common sense will tell you to reduce the weight, wait a few minutes, then try again. Remember, never sacrifice perfect form just for the sake of lifting heavier weight. This is a sure-fire, one-way trip down the road to injury. Making muscles work hard, with proper form is the name of the game.

Now that you understand how to test each station for your starting amount of resistance, you should know which muscles to train first. Training the large muscles groups first, such as your chest, legs, and back, should be done before training your small muscle groups like the arms, shoulders, and calves.

Starting with the large muscle groups will help you achieve and maintain quicker gains. The large muscles groups will require more stimulation and a higher intensity level than the smaller muscle groups. Training your arms with all-out intensity and training your chest immediately afterwards will not leave you with enough energy necessary to properly stimulate the muscle fibers in your chest. Moreover, because the triceps are required in chest press movements, your arm muscles will fail much more quickly than your chest muscles, which will also hold back your chest training.

As a beginner, you will find that your gains will come quickly. The excitement and enthusiasm that comes with these gains may cause you to spend even more time on your gym. Take it easy! Remember, just as too little exercise won't stimulate muscle growth...too much exercise won't either.

You need to give your body plenty of rest, especially if you're still sore from the last workout. This will keep you fresh and growing stronger. **NEVER TRAIN A BODY PART THAT IS STILL SORE FROM THE PREVIOUS WORKOUT.** Performing some flexibility exercises is a good way to keep the blood flowing through the sore area, but do not train these muscles again until you are feeling recovered.

Speaking of soreness, there is something else that you, as a beginner, should be aware of: If you work out - your muscles will get sore. The majority of muscle soreness comes from microtears and a build up of lactic acid in the muscle fibers. This is the result of intense exercise. Muscle soreness can become a problem when the body is pushed too fast and too quickly. As a beginner, tendons, ligaments, joints and tissues have not yet developed the ability necessary to recover from high intensity exercise. A general warm up of stretching and light calisthenics prior to exercise can possibly reduce the amount of post-exercise muscle soreness. A good cool down of stretching and cardio work may also decrease muscle soreness.

Now that we have laid a good foundation of the "do's and don'ts", let's get into something a little more specific. The Beginner's Strength Training Program. One of the best beginner's programs is the three-days-a-week routine. For example, do a whole-body workout on Monday, Wednesday and Friday. Use the other days for rest and recuperation. As previously discussed, you want to start with the large muscle groups first, then move on to the small muscle groups. Perform one exercise per muscle group that consists of 2 or 3 sets of 8 to 12 repetitions. Follow this routine for at least six to eight weeks in order for your body to establish the proper stimulation for growth.

One or two exercises per muscle group may not sound like enough to produce any results, but if you're a beginer - it most definitelty will. As you conitinue to train and your body adapts to your exercise routine and recuperative demands you place upon it, you'll be able to add more sets and exercises to your routine.

Another point that is highly recommended is the assistance of a personal trainer. Through the use of a personal trainer you can learn the mechanics and techniques of exercise, how to use proper form to avoid injury and details on proper nutrition. A good trainer will also provide MOTIVATION.

When choosing a personal trainer, here are some tips: Choose an individual that is certified through an accredited association. This is a good way to ensure that he or she is qualified to give you what you need. Also, take a look at what kind of shape they are in. If you want to be in great shape, look for a trainer who is in great shape. They will know what it takes to get results. Here are a few recommended organizations:

- National Strength & Conditioning (719) 632-6722
- American College of Sports Medicine (317) 637-9200
- National Academy of Sports Medicine (312) 929-5101

SAMPLE WORKOUT ROUTINE WHEN TRAINING FOR STRENGTH

Exercises	Reps	Sets
Leg Press / Squat	8 to 12	2 or 3
Leg Extension	8 to 12	2 or 3
Leg Curl	8 to 12	2 or 3
Calf Raise	8 to 12	2 or 3
Bench / Chest Press	8 to 12	2 or 3
Incline Press	8 to 12	2 or 3
Incline Pec Fly	8 to 12	2 or 3
Lat Pulldown	8 to 12	2 or 3
Seated Row	8 to 12	2 or 3
Military Press	8 to 12	2 or 3
Upright Row	8 to 12	2 or 3
Bicep Curl	8 to 12	2 or 3
Tricep Pressdown	8 to 12	2 or 3
Tricep Extension	8 to 12	2 or 3
Resistance Ab Crunch	20 to 30	2 or 3
Resistance Oblique Crunch	20 to 30	2 or 3

Rest period between sets should be about 60 to 90 seconds.

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COMMON TRAINING MISTAKES

1. Lack of Adequate Warm-Up and Inadequate Flexibility
A warmed muscle is a more flexible muscle that's better able to lift heavier weights and work in a full range of motion. Those warmed muscles also greatly reduce your chance of training injuries.

2. Improper Form
The use of improper form is a good way to keep you out of the gym. Not only does improper form cause injuries, it also doesn't allow for adequate muscle-fiber stimulation.

3. Too Much Weight
Overloading the muscles is a good way to promote muscular growth, but packing on too much weight can cause a snowball effect of improper form, injuries, and down time from your routine.

4. Not Enough Weight
Not lifting enough weight will prohibit the stimulation necessary for muscular growth. Keep challenging yourself to lift heavier weights on a progressive basis always maintaining proper form.

5. Not Enough Rest Between Workouts
If you're still sore from your previous workout, you don't have to go back at it just because it's your scheduled day. Give your body an extra day off to fully recover so when you return you will be able to give 100%.

6. Overtraining
It's not how much time you spend working out, but what you accomplish that really matters. Try to keep your resistance workouts within 45 to 60 minutes per session.

7. Poor Diet and Supplementation
Eating the right combination of foods, along with good supplementation, will greatly promote your success. Make your diet 50 percent carbohydrate, 35 percent protein, 15 percent fat, and take a good multivitamin and protein/carbohydrate supplement. Don't forget the water- at least 80 ounces a day! Hydration is critical.

8. Stale Routines
Your body adapts very quickly to the demands placed upon it. That's why you should have a variety of exercises and routines that you can do. To keep your body growing, you've got to keep it off-guard. Changing your exercises and routines is a sure way to do it.

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SETTING UP YOUR PERSONAL PROGRAM

It is important to first establish specific and realistic goals. You should determine your long term goal and then set a series of short term goals that will help you attain your long term goal. The most common goals are:

Muscular Endruance & Definition

Increase Strength

Increase Power & Muscle Mass

If your personal goals involve losing a considerable amount of body fat you will need to focus more on aerobic exercise and weight training for muscular endurance and definition. If your goals involve a large increase in muscle size you will need to focus on power and muscle mass weight training. Depending on your goals, you will have different nutritional requirements.

Once you have determined your personal goals, you will need to set up a schedule that helps you attain them. Set up a schedule that includes the number of workouts per week, the type of workout activity, the time of day for each workout, and the actual workout program. Don't forget to factor in the warm up and cool down periods. You may have to modify your current lifestyle to accommodate your new schedule. It's very important to include the following basic components to achieve successful results:

Stretching

Aerobic Exercise

Weight Training

Nutrition

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DETERMINE YOUR TRAINING METHOD

There are three basic types of weight training methods:

1. **Training for muscular endurance and definition**
2. **Training for strength**
3. **Training for power and muscle mass**

You should select a training method that reflects both your present fitness level and your long term goals. You should begin carefully and with proper professional guidance. You can always move from one training method to another as you progress.

If you are beginner, you should start slowly and carefully, gradually increasing the frequency and intensity of your training. Always play it safe – be realistic about your goals and your schedule. Realistic goals are safer and easier to follow.

Which is the right training method for you? First, take a look at your present physique and determine your objectives. Do you want a trim, toned, well-defined body? Are you involved in a sport where speed, strength and power are most important? Maybe you want bulging muscles and a terrific V-shape torso so you look great on the beach. Once you make a decision on what the final results should be, you can set up your personal program using the proper training method to achieve your goals.

Which training method is right for you?

FOR MUSCULAR ENDURANCE & DEFINITION

This training method incorporates achieving and maintaining a high cardiovascular (heart) rate and helps burn away excess fatty tissue. It also adds muscle definition and muscular endurance to your entire body. Exercises are most commonly performed for 15 to 20 repetitions and 3 to 4 sets using a light to moderate weight. The rest period between sets should be about 30 seconds. These short rest intervals will help maintain an elevated heart rate and prevent the muscles from cooling down.

FOR STRENGTH

This type of training is the most popular of the three and is designed specifically for increasing strength throughout the muscle and the muscle-tendon junction. This type of training is especially important for athletes. Normally, exercises are performed using moderate to heavy weight for 8 to 12 repetitions and 2 to 3 sets. The rest period between sets should be from 60 to 90 seconds. This allows a degree of muscle recovery before you hit them again.

FOR POWER AND MUSCLE MASS

This is the method most often used by bodybuilders and is recommended only for the intermediate and advanced lifter. The weights used are heavy — this shocks the muscles and stimulates a more rapid increase in muscle size. Usually exercises are performed for 2 to 6 repetitions and 3 to 4 sets using very heavy weight. The rest period between sets should be from 3 to 4 minutes. The prolonged rest periods allow ample time for recovery between sets.

DESIGNING YOUR PERSONAL ROUTINE

FIRST:

You need to decide which of the above training methods is best suited to accomplish your personal goals.

SECOND:

Study the exercise poster that came with your Body-Solid machine and select one or two exercises per body part (body parts are listed to the left of the exercise pictures). Be sure to include exercises for <u>all</u> body parts. If you leave out certain body parts your exercise routine and your body will not be balanced. If you are trying to increase muscle mass or increase strength to a muscle group it is alright to add extra exercises to the area you are particularly concerned about.

THIRD:

Coordinate your body part exercise program and your personal schedule. If you select one exercise per body part you can normally do your entire routine in the same workout. If you choose to do more than 12 exercises you may decide to divide your workout routine into upper and lower body exercises. You can split your schedule to work upper body one day and lower body the next day. Remember to rest each particular muscle group 48 hours before working it again.

FOURTH:

Order the exercises in your routine so you are working the large muscle groups first and the small muscle groups last.

FIFTH:

Keep a record! Write down the exercises, number of sets, number of reps and the amount of resistance (weight).

BEGINNER'S SAMPLE WORKOUT ROUTINE WHEN TRAINING FOR DEFINITION

<u>Exercise</u>	<u>Reps</u>	<u>Sets</u>
Bench / Chest Press	15 to 20	3 or 4
Lat Pulldown	15 to 20	3 or 4
Shoulder Press	15 to 20	3 or 4
Tricep Pressdown	15 to 20	3 or 4
Bicep Curl	15 to 20	3 or 4
Leg Press/Squat	15 to 20	3 or 4
Leg Extension	15 to 20	3 or 4
Leg Curl	15 to 20	3 or 4
Calf Raise	15 to 20	3 or 4
Ab Crunch	20 to 30	3 or 4

Rest period between sets should be about 30 seconds.

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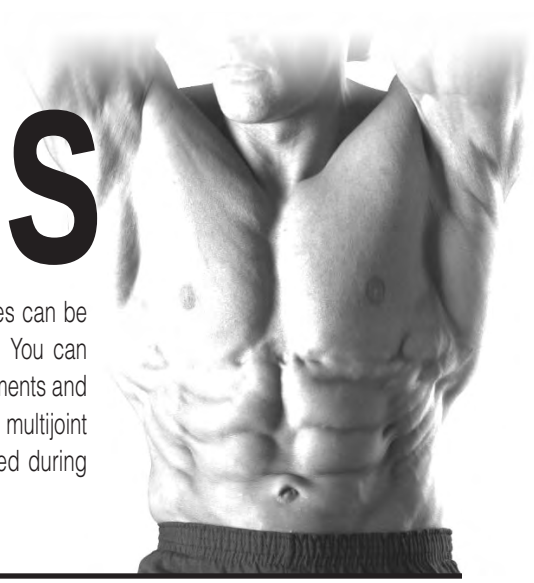
EXERCISE TIPS



Listed below are Body-Solid's picks of the best exercises you can do for each body part. These exercises can be done using free weights, machines and multi-station gyms. Learn to do each exercise in proper form. You can make substitutions in your training and try variations of each using different Body-Solid grips, cable attachments and accessories to slightly change the emphasis of a particular exercise. Note: Many movements, especially multijoint exercises, work more than one muscle group. For example, your front deltoids and triceps are stimulated during bench / chest pressing movements.

CHEST

This powerful muscle group is the cornerstone of a well-developed upper body. To most thoroughly work your pecs, include both pressing and fly movements and vary the angle of the bench from decline to flat to incline.

BENCH / CHEST PRESS
INCLINE PRESS
DECLINE PRESS
PEC FLY
INCLINE FLY
DECLINE FLY
CABLE CROSSOVER
DIPS

SHOULDERS

The shoulder joint, which has the greatest range of motion of all joints in the body, is best worked by training all three deltoid heads. Include a pressing movement followed by a raise for each of the three heads.

SHOULDER PRESS
BEHIND THE NECK PRESS
FRONT DELTOID RAISE
LATERAL (SIDE) DELTOID RAISE
BENT-OVER LATERAL DELTOID RAISE
REVERSE PEC-FLY

UPPER BACK

A powerful upper back is marked by both middle-back thickness and width (the sought-after V-taper). This is best achieved by combining various rows with pull-downs and pull-ups. Remember to vary your grip to slightly change the stimulus.

PULL UP
UPRIGHT ROW
LAT PULLDOWN
SEATED ROW
BENT OVER ROW
HIGH ROW
REVERSE GRIP PULLDOWN

TRAPS

A signature muscle of a strong upper back, well-developed traps help prevent neck injury. Shrug movements should be done with heavy weights in a straight up-and-down motion.

STRAIGHT BAR SHRUG
DUMBBELL SHRUG
BEHIND THE BACK SHRUG
UPRIGHT ROW

LOWER BACK

Important not only for spinal protection but also because it's the seat of power for many exercises. If you spend a great deal of time crunching for abs, you need to balance your training for complete development and muscular balance.

PULL UP
UPRIGHT ROW
LAT PULLDOWN
SEATED ROW
BENT OVER ROW
HIGH ROW
REVERSE GRIP PULLDOWN

TRICEPS

This three-headed muscle on the back of your arm is involved in extension of the elbow. Like the biceps, the triceps cross the elbow and shoulder joints. Because of this, you can and should work the triceps through a variety of angles to ensure complete development.

LYING TRICEPS EXTENSION
CABLE TRICEPS EXTENSION
CABLE TRICEPS PRESSDOWN
CLOSE-GRIP BENCH PRESS
REVERSE-GRIP PRESSDOWN
TRICEPS PRESS
DIPS

BICEPS / FOREARMS

A two-headed muscle, the biceps' primary focus is to flex your elbow and supinate your wrist. The ability to build your biceps peak is largely genetic, but exercises that maximally stress the short head will help.

BICEPS
- **STANDING BICEP CURL**
- **SEATED BICEP CURL**
- **INCLINE CURL**
- **PREACHER CURL**
- **CONCENTRATION CURL**
- **ONE-ARM CABLE CURL**

FOREARMS
- **WRIST CURL**
- **REVERSE WRIST CURL**

ABDOMINALS

The rectus abdominus has upper and lower regions, but you can't isolate one area over the other. Still, include both upper and lower ab movement to more strongly emphasize those areas, and do twisting movements to work the obliques for complete development.

UPPER AB REGION
- **CABLE AB CRUNCH**
- **DECLINE BENCH CRUNCH**

LOWER AB REGION
- **REVERSE CRUNCH**
- **HANGING KNEE RAISE**
- **HIP THRUST**

OBLIQUES
- **CABLE SIDE BEND**
- **OBLIQUE CRUNCH**

THIGHS / GLUTES

The main muscles of the thighs are the quadriceps which are composed of four muscles. You have several others near the hip joint, including the body's largest muscle group, the gluteals. Multijoint movements (in which action occurs at both the hip and knee joints) are your best choice to work these muscles.

BACK SQUAT
FRONT SQUAT
LEG PRESS
LUNGE
REVERSE LUNGE
STEP-UP
LEG EXTENSION (does not work glutes)

HAMSTRINGS

On the back of the thighs, the hamstrings balance the quads and allow for a wide range of movement. Good exercise choices include those that work the hamstrings and both the hip and knee joints.

DEADLIFT
STIFF-LEGGED DEADLIFT
GOOD MORNING
LYING LEG CURL
SEATED LEG CURL
ONE-LEGGED STANDING LEG CURL

CALVES

Calves consist of two major muscles, the gastrocnemius and soleus. The latter is best worked when the knee is flexed, as in the seated calf raise.

STANDING CALF RAISE
SEATED CALF RAISE
DONKEY CALF RAISE
LEG PRESS CALF RAISE
HACK SQUAT CALF RAISE

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ANATOMY CHART

FRONT VIEW

Note: These illustrations depicting exaggerated musculature are not in the textbook anatomical position. As such, they are inexact for medical purposes but are useful for a general understanding.

Neck
Omohyoid
Sternohyoid
Sternocleidomastoid
Trapezius

Chest
Pectoralis Major
Pectoralis Minor
(beneath major)

Shoulders
Deltoid
anterior head
middle head
posterior head

Biceps
Brachialis
Biceps Brachii
long head
short head

Pronator Teres

Palmaris Longus

Forearms
Extensor Carpi Ulnaris

Extensor Pollicis Brevis

Abductor Pollicis Longus

Extensor Pollicis Longus

Flexor Carpi Radialis

Abs
Serratus Anterior
External Oblique
Rectus Abdominis
Tendinous Inscriptions

Thighs
Sartorius
Pectineus
Adductor Longus
Gracilis

Tensor Fasciae Latae

Vastus Medialis

Vastus Lateralis

Rectus Femoris

Patella (kneecap)

Calves
Gastrocnemius
Soleus

Tibia (bone)

Tibialis Anterior

Peroneus Longus

Extensor Digitorum Longus

Brachioradialis

Flexor Carpi Ulnaris

BACK VIEW

Back
Teres Minor
Teres Major

Infraspinatus

Rhomboid Major

Triceps
Triceps Brachii
lateral head
longhead
medial head

Trapezius

Erector Spinae (deep)

Latissimus Dorsi

Thoracolumbar Fascia

Abs
External Oblique

Glutes
Gluteus Medius
Gluteas Maximus

Hamstrings
Iliotibial Band
Biceps Femoris
Adductor Magnus

Semitendinosus

Gracilis

Semimembranosus

Calves
Gastrocnemius
Soleus
Peroneus Brevis

Flexor Hallucis Longus

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FITNESS GOALS*

SHORT-TERM GOALS

Date Set _____ **Date Accomplished** _____

Goal _____

_____

_____

_____

Reward** _____

Date Set _____ **Date Accomplished** _____

Goal _____

_____

_____

_____

Reward** _____

Date Set _____ **Date Accomplished** _____

Goal _____

_____

_____

_____

Reward** _____

LONG-TERM GOALS

Goal _____

_____

_____

_____

_____

_____

Reward! _____

_____

_____

* Make several copies of this page to keep track of your goals and accomplishments. You can print more copies of this page by going to http://www.bodysolid.com/support/docs.html

** Don't forget to reward yourself for a job well-done!

BEGINNER'S SAMPLE WORKOUT ROUTINE

Keep track of your changes and improvements. It's a great motivational tool!*

S = Sets
R = Repetitions per set
W = Weight used

Date																		
Exercise	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W
BENCH / CHEST PRESS																		
LAT PULLDOWN																		
SHOULDER PRESS																		
TRICEP PRESSDOWN																		
BICEP CURL																		
LEG PRESS / SQUAT																		
LEG EXTENSION																		
LEG CURL																		
CALF RAISE																		
AB CRUNCH																		
TOTALS																		

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SAMPLE WORKOUT ROUTINE WHEN TRAINING FOR STRENGTH

Keep track of your changes and improvements. It's a great motivational tool!*

S = Sets
R = Repetitions per set
W = Weight used

Date																		
Exercise	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W
LEG PRESS / SQUAT																		
LEG EXTENSION																		
LEG CURL																		
CALF RAISE																		
BENCH / CHEST PRESS																		
INCLINE PRESS																		
INCLINE PEC FLY																		
LAT PULLDOWN																		
SEATED ROW																		
MILITARY PRESS																		
UPRIGHT ROW																		
BICEP CURL																		
TRICEP PRESSDOWN																		
TRICEP EXTENSION																		
RESISTANCE AB CRUNCH																		
RESISTANCE OBLIQUE CRUNCH																		
TOTALS																		

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INTERMEDIATE AND ADVANCED LIFTERS... Design your personal strength training program. Keep track of your changes and improvements. It's a great motivational tool!*

S = Sets
R = Repetitions per set
W = Weight used

Body-Solid WEIGHT TRAINING EXERCISE LOG

Date																		
Exercise	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W	S	R	W
TOTALS																		

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STRETCHING & FLEXIBILITY

Flexibility is an important component of physical fitness and needs to be addressed in a resistance training program. The two main purposes for stretching are injury prevention and a faster rate of recovery from exercise. Stretching should be performed in both the warm up and cool down phases of a training session. A good general guideline is that each workout session should be preceded by 5 to 15 minutes of general warm up, followed by 8 to 12 minutes of stretching, and concluded with 4 to 5 minutes of post-exercise stretching.

A regular stretching program will loosen muscle tissue, allowing an increased range of motion. This helps prevent microtears at the muscle-tendon junction. Almost 90% of all injuries from muscle strain occur at the muscle-tendon junction. Repeated injury at this junction can lead to a build-up of scar tissue, which impedes range of motion and adds stress to the joints.

Begin by stretching the major muscle groups first. Move in and out of your stretches with smooth, slow, controlled motion. Hold the stretch for at least 10 seconds when you feel you have reached your muscle's maximum distance. Do not use fast, hurried or reckless motions when stretching. Fast and bouncy motions will increase the risk of injury.

The most common and most popular type of stretching is the **static stretching** technique. This form of stretching involves voluntary, complete relaxation of the muscles while they are elongated. A static stretch is a constant, steady stretch in which the end position is held for 10 to 30 seconds. This technique is popular because it is easy to learn, effective, and accompanied by minimal soreness with the least risk of injury.

Ballistic stretching involves a bouncing or bobbing movement during the stretch. The final position in the movement is not held. Ballistic stretching is unpopular because of the increased amount of delayed muscle soreness and the possibility of injury during the stretching exercise. Ballistic stretching is not recommended.

A dynamic stretch involves flexibility during sport specific movements. **Dynamic stretching** is similar to ballistic stretching in that it utilizes movement, but dynamic stretching includes movements that may be specific to a sport or movement pattern. Dynamic stretching is most common among track and field athletes, but is also used in other sports, such as basketball and volleyball. An example of dynamic stretching would be a track sprinter performing high knees with an emphasis on knee height and arm action, not on horizontal speed.

The following pages show illustrations with descriptions of static stretching for warm up and post-exercise cool down. Remember... stretch your large muscle groups first and do all stretches in a smooth, slow, controlled manner.

UPPER BACK

Cross Arm in Front of Chest

MUSCLE(S) AFFECTED: *latissimus dorsi and teres major*

1. Stand or sit with the right arm slightly flexed (15° to 30°) and adducted across the chest.
2. Grasp the upper arm just above the elbow, placing the left hand on the posterior side of the upper arm.
3. Pull the right arm across the chest (toward the left) with the left hand.
4. Hold for 10 seconds.
5. Repeat with the left arm.

Stretching the upper back

UPPER BACK

Arms Straight Up Above Head (Pillar)

MUSCLE(S) AFFECTED: *latissimus dorsi and wrist flexors*

1. Stand with arms in front of torso, fingers interlocked with palms facing each other.
2. Slowly straighten the arms above the head with palms up.
3. Continue to reach upward with hands and arms.
4. While continuing to reach upward, slowly reach slightly backward.
5. Hold for 10 seconds.

Stretching the shoulders, chest and upper back

LOWER BACK

Spinal Twist (Pretzel)

MUSCLE(S) AFFECTED: *internal oblique, external oblique and spinal erectors*

1. Sitting with legs straight and upper body nearly vertical, place right foot on left side of left knee.
2. Place back of left elbow on right side of right knee, which is now bent.
3. Place right palm on floor 12 to 16 inches behind hips.
4. Push right knee to the left with left elbow while turning shoulders and head to the right as far as possible. Try to look behind the back.
5. Hold for 10 seconds.
6. Repeat with left leg.

Stretching the low back and sides

LOWER BACK

Semi-Leg Straddle

MUSCLE(S) AFFECTED: *spinal erectors*

1. Sitting, knees flexed 30 to 50 degrees, let the legs totally relax.
2. Point the knees outward; the lateral side of the knees may or may not touch the floor.
3. Lean forward from waist and reach forward with extended arms. Hold position for 10 to 15 seconds.
4. Bending and relaxing legs decreases hamstring involvement and increases lower back stretch.

Stretching the low back from seated position

HIPS

Forward Lunge (Fencer)

MUSCLE(S) AFFECTED: *iliopsoas, rectus femoris*

1. Standing, take a long step forward (as with the lunge) with the right leg and flex the right knee until it is directly over the right foot.
2. Keep right foot flat on floor.
3. Keep back leg straight.
4. Keep back foot pointed in same direction as front foot; it is not necessary to have heel on floor.
5. Keep torso upright and rest hands on hips or front leg.
6. Slowly lower hips forward and downward.
7. Hold for 10 to 15 seconds.
8. Repeat with the left leg.

Stretching the hip flexors

HIPS

Supine Knee Flex

MUSCLE(S) AFFECTED: *hip extensors (gluteus maximus and hamstrings)*

1. Lie on back with legs straight.
2. Flex right leg and lift knee toward chest.
3. Place both hands below knee and continue to pull knee toward chest.
4. Hold for 10 to 15 seconds.
5. Repeat with left leg.

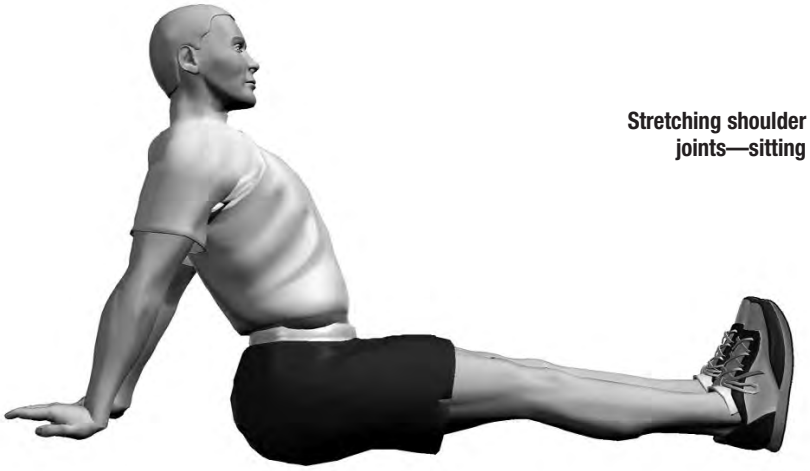
Stretching the gluteals and hamstrings

SHOULDER

Seated Lean-Back

MUSCLE(S) AFFECTED: *deltoids and pectoralis major*

1. Sitting with legs straight and arms extended, place palms on floor about 12 inches behind hips.
2. Point fingers away (backward) from body.
3. Slide hands backward and lean backward.
4. Hold for 10 seconds.



Stretching shoulder joints—sitting

CHEST

Straight Arms Behind Back

MUSCLE(S) AFFECTED: *deltoids and pectoralis major*

1. Standing, place both arms behind back.
2. Interlock fingers with palms facing each other.
3. Straighten arms fully.
4. Slowly raise the straight arms.
5. Hold for 10 to 15 seconds.
6. Keep head upright and neck relaxed.

Stretching the chest

POSTERIOR OF UPPER ARM

Behind-Neck Stretch (Chicken Wing)

MUSCLE(S) AFFECTED: *triceps and latissimus dorsi*

1. Standing or sitting, flex right arm and raise elbow above head.
2. Reach the right hand down toward the left scapula.
3. Grasp right elbow with left hand.
4. Pull elbow behind head with left hand.
5. Hold for 10 seconds.
6. Repeat with left arm.

Stretching the triceps

NECK

Look Right and Left

MUSCLE(S) AFFECTED: *sternocleidomastoid*

1. Stand or sit with head and neck upright.
2. Turn head to the right using a submaximal concentric contraction. Hold for 10 seconds.
3. Turn head to the left using a submaximal concentric contraction. Hold for 10 seconds.

Rotational flexion of the neck

NECK

Flexion and Extension

MUSCLE(S) AFFECTED: *sternocleidomastoid, suboccipitals and splenii*

1. Standing or sitting with head and neck upright, flex neck anteriorly (forward) by tucking chin in toward the chest; hold for 10 seconds.
2. If the chin touches the chest, try to touch lower on the chest with the chin.
3. Extend neck posteriorly (backward) by trying to touch the head to the trapezius; hold for 10 seconds.

Neck extension

Neck flexion

SHOULDER

Straight Arms Behind Back

MUSCLE(S) AFFECTED: *deltoids and pectoralis major*

1. Standing, place both arms behind back.
2. Interlock fingers with palms facing each other.
3. Straighten arms fully.
4. Slowly raise the straight arms.
5. Hold for 10 to 15 seconds.
6. Keep head upright and neck relaxed.

Stretching shoulder joints—standing

SIDES

Side Bend with Straight Arms

MUSCLE(S) AFFECTED: *external oblique, latissimus dorsi and serratus anterior*

1. Stand with feet 14 to 16 inches apart.
2. Interlace the fingers with palms facing each other.
3. Reach upward with straight arms.
4. Keeping arms straight, lean from waist to left side. Do not bend knees.
5. After moving as far as possible, hold for 10 seconds.
6. Repeat to the left side.

Stretching the sides, upper back and shoulders

SIDES

Side Bend with Bent Arm

MUSCLE(S) AFFECTED: *external oblique, latissimus dorsi, serratus anterior and triceps*

1. Stand with feet 14 to 16 inches apart.
2. Flex right arm and raise elbow above head.
3. Reach the right hand down toward the left shoulder.
4. Grasp the right elbow (just above the elbow) with the left hand.
5. Pull the elbow behind head.
6. Keeping arm bent, lean from waist to left side.
7. Do not bend knees.
8. After moving as far as possible, hold for 10 to 15 seconds.
9. Repeat with the left arm.

Stretching the sides, triceps and upper back

ANTERIOR OF THIGH AND HIP FLEXOR

Stretching the quadriceps on side

Side Quadricep Stretch

MUSCLE(S) AFFECTED: *quadriceps and iliopsoas*

1. Lie on left side with both legs straight.
2. Place left forearm flat on floor and upper arm perpendicular to floor.
3. Place left forearm at 45° angle with torso.
4. Flex right leg with heel of right foot moving toward buttocks.
5. Grasp front of ankle with right hand and pull toward buttocks. WARNING: Do not pull on ankle so hard that pain or discomfort is felt in knee.
6. Move knee backward and slightly upward. The stretch occurs not so much from the excessive flexion of the knee but from moving the knee back and slightly up.
7. Hold for 10 to 15 seconds.
8. Repeat with the left leg.

ANTERIOR OF THIGH AND HIP FLEXOR

Kneeling Quadriceps Stretch

MUSCLE(S) AFFECTED: *quadriceps*

1. Kneel with the balls of the feet on the ground.
2. Keep hips straight (upper leg and torso should be in a straight line).
3. Place palms of hands on buttocks and push slightly forward.
4. With a straight body, lean slightly backward until developmental stretch is felt in quadriceps.
5. Hold for 10 to 15 seconds.

Stretching the quadriceps kneeling

POSTERIOR OF THIGH

Sitting Toe Touch

MUSCLE(S) AFFECTED: *hamstrings, spinal erectors and gastrocnemius*

1. Sit with the upper body nearly vertical and legs straight.
2. Lean forward from waist and grasp toes with each hand, slightly pull toes towards the upper body, and pull chest towards leg. (If you are very stiff, try to grasp the ankles.) Hold for 10 seconds.
3. Release toes and relax foot.
4. Grasp ankles and continue to pull chest towards legs. Hold for 10 seconds.
5. Still grasping the ankles, point away from body and continue to pull chest towards legs. Hold for 10 seconds.

Stretching the hamstrings with emphasis on insertion of the hamstrings and calves.

Stretching the hamstrings with emphasis on the middle portion.

Stretching the hamstrings with emphasis on the upper portion.

POSTERIOR OF THIGH

Semistraddle (Figure Four)

MUSCLE(S) AFFECTED: *gastrocnemius, hamstrings and spinal erectors*

1. Sit with the upper body nearly vertical and legs straight.
2. Place sole of left foot on left side of right knee. The lateral side of left leg should be resting on the floor.
3. Lean forward from the waist and grasp toes with right hand and slightly pull toes toward the upper body as the chest is also pulled toward right leg. Hold for 10 seconds.
4. Release toes and relax foot.
5. Grasp ankle and continue to pull chest toward right leg. Hold for 10 seconds.
6. Point toes away from body and continue to pull chest toward right leg. Hold for 10 seconds.
7. Repeat with the left leg.

Stretching the hamstrings with emphasis on insertion of the hamstrings and calves

Stretching the hamstrings with emphasis on the middle portion

Stretching the hamstrings with emphasis on the upper portion

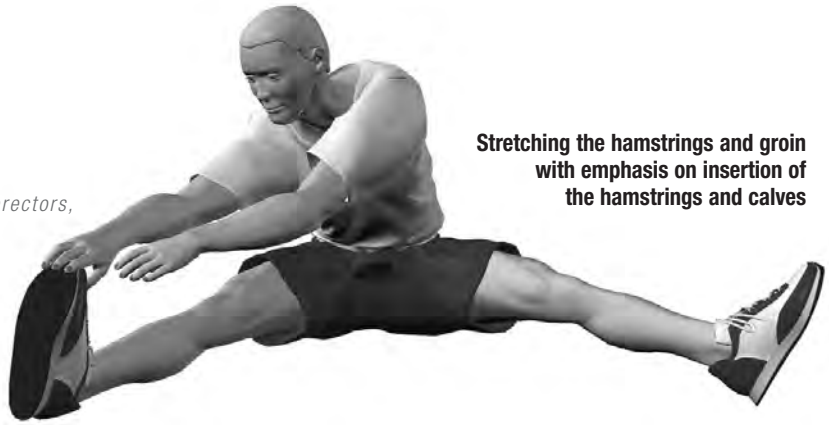
Remember... do all stretches in a smooth, slow controlled manner.

GROIN

Straddle (Spread Eagle)

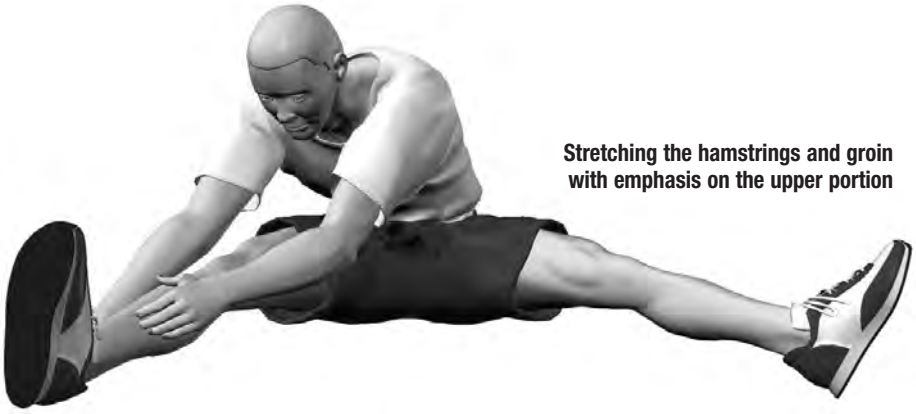
MUSCLE(S) AFFECTED: *gastrocnemius, hamstrings, spinal erectors, adductors and sartorius*

1. Sit with the upper body nearly vertical and legs straight, and spread legs as far as possible.
2. With right hand, grasp toes of right foot and pull on toes slightly, while pulling chest toward right leg. Hold for 10 seconds.
3. Release toes and relax foot.
4. Grasp ankle and continue to pull chest toward right leg. Hold for 10 seconds.
5. Point toes away from body and continue to pull chest toward right leg. Hold for 10 seconds.
6. Repeat process with the left leg.
7. Repeat process by grasping right toes with right hand and left toes with left hand. Move the torso forward and toward the ground.



Stretching the hamstrings and groin with emphasis on insertion of the hamstrings and calves

Stretching the hamstrings and groin with emphasis on the middle portion



Stretching the hamstrings and groin with emphasis on the upper portion

Stretching the groin, low back and hamstrings

GROIN

Butterfly

MUSCLE(S) AFFECTED: *adductors and sartorius*

1. Sitting with the upper body nearly vertical and legs straight, flex both knees as the soles of the feet come together.
2. Pull feet toward body.
3. Place hands on feet and elbows on legs.
4. Pull torso slightly forward as elbows push legs down.
5. Hold for 10 to 15 seconds.

Stretching the groin

POSTERIOR OF LOWER LEG

Bent-Over Toe Raise

MUSCLE(S) AFFECTED: *gastrocnemius and soleus*

1. Stand with heel of right foot 6 to 8 inches in front of left foot.
2. Flex right foot toward shin (dorsi-flexion) with heel in contact with floor.
3. Lean forward and try to touch right leg with chest while both legs are straight.
4. Continue to lean downward with upper body as the foot is dorsi-flexed near maximal toward the shin.
5. Hold for 10 to 15 seconds.
6. Repeat with the left leg.

Stretching calves without a step

POSTERIOR OF LOWER LEG

Step Stretch

MUSCLE(S) AFFECTED: *gastrocnemius and soleus; also, achilles tendon*

1. Have ready a step or board 3 to 4 inches high.
2. Place balls of both feet on the step or board, 1 inch from its edge.
3. With straight legs, lower heels as far as posible.
4. Hold for 10 to 15 seconds.
5. To stretch achilles tendon, raise heels slightly. Slightly flex the knees and then lower the heels. This stretch will be felt in the achilles tendon.
6. Hold for 10 to 15 seconds.
7. For a more intense and individualized stretch, perform this stretch with one leg at a time.

Stretching the calves standing on a step

Preparing to stretch the achilles tendon by slightly bending the knee

Stretching the achilles tendon by lowering the heel

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Vertical Knee Raise / Dip / Push-Up / Chin Machine
#VKR82

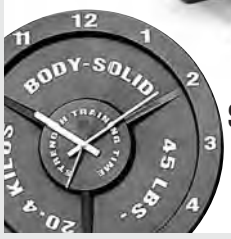
40" Wide 3-Tier Dumbbell Rack
#WDR363

Rubber Flooring
#RF46

45°Hyperextension Machine
#WHYP45

Accessories

Olympic Weight Tree
#WT46



Strength Training Time Clock
#STT45

Cardio from ENDURANCE

Decathlon Treadmill
#ETDEC

Elliptical Machine
#ETX4.0

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SBL460 Mainframe Parts List

KEY#	QTY	PART#	DESCRIPTION
A	1	SBL460MBF-A	MAIN BASE FRAME
B	1	SBL460UBF-B	U BASE FRAME
C	1	SBL460BP-C	BRACE PLATE (FOR U SHAPE FRAME)
D	1	SBL460LBF-D	LAT BASE FRAME
E	1	SBL460VMF-E	VERTICAL MAIN FRAME
F	1	SBL460SSF-F	SQUAT SUPPORT FRAME
G	1	SBL460PSF-G	PRESS SUPPORT FRAME
H	1	SBL460AH-H	ACCESSORIES HOLDER
J	1	SBL460LSF-J	LAT SUPPORT FRAME
L	1	SBL460BP-L	BRACE PLATE (ATTACH TO E)
M	1	SBL460SPF-M	SEAT PAD FRAME
N	1	SBL460PS1-N	2 1/2" PIVOT SHAFT
P	1	SBL460SA-P	SEAT ADJUSTER
R	1	SBL460LHDB-R	LEFT HOLD DOWN BRACKET
S	1	SBL460RHDB-S	RIGHT HOLD DOWN BRACKET
U	1	SBL460SC-U	SHOCK CYLINDER
V	1	SBL460PST-V	PREACHER SUPPORT
W	1	SBL460FHDB-W	FOOT HOLD DOWN BAR
X	1	SBL460PST-X	PREACHER POST
Y	1	SBL460PPA-Y	PREACHER PIVOT ARM
Z	1	SBL460PS2-Z	3 1/2" PIVOT SHAFT
AA	1	SBL460PF-AA	PAD FRAME
AD	2	SBL460PHS-AD	PREACHER HANDLE
AE	3	SBL460PS3-AE	PIVOT SHAFT
AF	1	SBL460LLB-AF	LEFT LAT BEAM
AG	1	SBL460RLB-AG	RIGHT LAT BEAM
AH	1	SBL460LAB-AH	LAT ADJUSTMENT BAR
AJ	2	SBL460LHS-AJ	LAT HANDLE
AK	1	SBL460WC-AK	WEIGHT CARRIAGE
AL	1	SBL460CS-AL	CHROME SHAFT FOR WEIGHT CARRIAGE 18mm X 35mm
AM	1	SBL460-AM	PRESS CAM
AN	1	SBL460-AN	LEFT PRESS BEAM
AP	1	SBL460-AP	RIGHT PRESS BEAM
AQ	1	SBL460PPH-AQ	POP PIN HANDLE
AR	1	SBL460THS-AR	POP PIN-HANDLE SPRING
AS	1	SBL460THP-AS	POP PIN PLUNGER
AT	1	SBL460LBH-AT	LEFT PRESS HANDLE
AU	2	SBL460ITST-AU	2 3/8" PIVOT SHAFT
AV	1	SBL460RBH-AV	RIGHT PRESS HANDLE
AW	1	SBL460CBWP-AW	COUNTER BALANCED WEIGHT POST
AX	1	SBL460PWP-AX	20" PREACHER WIEGHT POST
AY	1	SBL460LWP-AY	23" LAT WEIGHT POST

Part numbers are required when ordering parts.

SBL460 Hardware List

KEY#	QTY	PART#	DESCRIPTION
1	2	BEC250	PLASTIC BALL-END CAP 2.5"
2	5	PSEC250250	PLASTIC SQUARE END CAP 2.5"X2.5"
3	2	BLEC275	BLACK LAT END CAP 2.75" X 0.375"
4	6	OASC2	OLY ADAPTER SLEEVE
5	6	BC2	PLASTIC BALL-END CAP 2"
6	1	PEC23	PLASTIC END CAP 2"X3"
7	5	PSEC33	PLASTIC SQUARE END CAP 3"X3"
8	2	PSEC75150	PLASTIC END CAP 0.75"X1.5"
9	1	PWP4X1.5	PLASTIC 4" PULLEY 1.5" WIDE
10	2	FOAM48	FOAM ROLLER 4"X8"
11	2	RH550	RUBBER HANDLE COVER 5.5" LONG
12	2	RH750	RUBBER FOOT COVER 7.5" LONG
13	4	BB3220	OILITE BUSHING 32mm OD X 20mm ID
14	2	BB2512	OILITE BUSHING 25mm OD X 12mm ID
15	2	BB3720	OILITE BUSHING 37mm OD X 20mm ID
16	4	BB3825	OILITE BUSHING 38mm OD X 25mm ID
17	2	PFREC2.5	PLASTIC ROLLER END CAP
18	6	FG1.5	FOAM GRIP 1.5" OD (VARIOUS LENGTHS)
19	8	REC1	PLASTIC ROUND END CAP 1"
21	6	RDOP2	RUBBER DONUT (FOR OLY. WEIGHT POST)
22	7	PBB17	PILLOW BLOCK BEARING 17mm ID
23	1	RBS86	RUBBER BAR STOPPER 86mm LONG
24	2	BB4120	OILITE BUSHING 41mm OD 20mm ID
25	1	LLPPH	LARGE LOCKING POP PIN HANDLE
26	4	PBEC26	PLASTIC BOLT END COVER
27	2	RP2450	RUBBER PAD
30	1	RBS5050	RUBBER BLOCK STOPPER ON PREACHER CURL
31	1	HEX12100PTB	HEX BOLT 12mmX100mm PARTIAL THREAD
32	20	HEX12105PTB	HEX BOLT 12mmX105mm PARTIAL THREAD
33	1	HEX1295PTB	HEX BOLT 12mmX95mm PARTIAL THREAD
34	1	HEX1225FTB	HEX BOLT 12mmX25mm FULL THREAD
35	2	HEX10100PTB	HEX BOLT 10mm X 100mm PARTIAL THREAD
36	4	HEX1075PTB	HEX BOLT 10mmX75mm PARTIAL THREAD
37	4	HEX1085PTB	HEX BOLT 10mmX85mm PARTIAL THREAD
38	10	RAH1030FTB	ROUND ALLEN HEAD 10mmX30mm FULL THREAD BOLT
40	18	RAH1020FTB	ROUND ALLEN HEAD 10mmX20mm FULL THREAD BOLT
41	3	SHB1050DP	SQUARE HEAD BOLT 10mmX55mm WITH DOG POINT
42	3	HEX870FTB	HEX BOLT 8mmX70mm FULL THREAD
45	12	RAH820FTB	ROUND ALLEN HEAD 8mmX25mm FULL THREAD BOLT
46	1	HEX840FTB	HEX BOLT 8mmX40mm FULL THREAD
47	2	FAH820B	FLAT ALLEN HEAD 8mmX20mm BOLT
48	22	NLN12	NYLON LOCK NUT 12mm
49	1	WSW12	SPRING LOCK WASHER 12mm
50	44	WFLT12	FLAT WASHER 12mm

Continued on next page

Part numbers are required when ordering parts.

SBL460 Hardware List (continued)

KEY#	QTY	PART#	DESCRIPTION
51	24	WFLT1030	FLAT WASHER 10mm X 30mm
52	2	ZINCB10	ZINC BUSHING 10mm
53	3	SNUT10	STANDARD NUT 10mm
54	11	NLN10	NYLON LOCK NUT 10mm
55	34	WSW10	SPRING LOCK WASHER 10mm
56	10	WFLT10	FLAT WASHER 10mm
57	1	WFLT0824	FLAT WASHER 8mm X 24mm
58	1	SNUT8	STANDARD NUT 8mm
59	1	NLN8	NYLON LOCK NUT 8mm
60	16	WSW8	SPRING LOCK WASHER 8mm
61	17	WFLT8	FLAT WASHER 8mm
64	1	SHBDP830	SQUARE HEAD BOLT 8mmX30mm WITH DOG POINT
65	2	WFLT1336	FLAT WASHER 13mm X 36mm
66	1	HEX1090PTB	HEX BOLT 10mm X 90mm PARTIAL THREAD
67	6	SNAP3	QUICK RELEASE SNAP LINK
69	6	OLYCLR1.84	OLYMPIC SPRING COLLAR 1 7/8"

Part numbers are required when ordering parts.

Pads List

KEY#	QTY	PART#	DESCRIPTION
Q	1	SBL460SP-Q	SEAT PAD
T	1	SBL460BP-T	BACK PAD
AB	2	SBL460SAP-AB	SIDE ARM PAD
AC	1	SBL460PP-AC	PREACHER PAD

Cable List

KEY#	QTY	PART#	DESCRIPTION
62	1	SCL460CABLE	CABLE

Accessories List

KEY#	QTY	PART#	DESCRIPTION
BC	1	SBL460UB-BC	UTILITY BAR
BA	2	SBL460UBS-BA	UTILITY BAR STRAP
BB	2	SBL460MPS-BB	LONG MULTI-PURPOSE STRAP
BE	1	SBL460ACS-BE	AB CRUNCH STRAP
POSTER	1	SBL460POSTER	EXERCISE POSTER
	1	TUP-G	TOUCH UP PAINT - GRAY
	1	TUP-S	TOUCH UP PAINT - SILVER

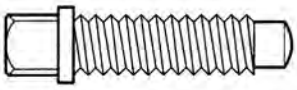
Labels/Decals List

KEY#	QTY	PART#	DESCRIPTION
	1	SBL460DWLAT-1	WARNING LABEL FOR LAT STATION
	1	SBL460DWLBP-2	WARNING LABEL FOR PRESS STATION
	1	SBL460DWLSP-3	LABEL FOR SEAT PLACEMENT
	1	DWRULE-4	WARNING LABEL FOR RULES
	1	DWSM-5	WARNING LABEL FOR MAINTENANCE

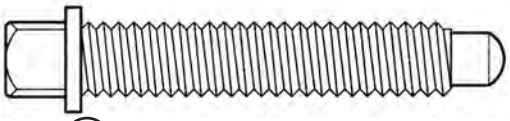
Part numbers are required when ordering parts.

SBL460 Hardware

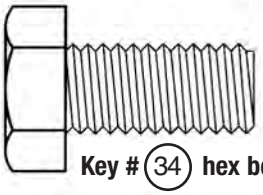
(shown in actual size)



Key # (64) square head bolt 8mm x 30mm w/ dog point QTY. 1

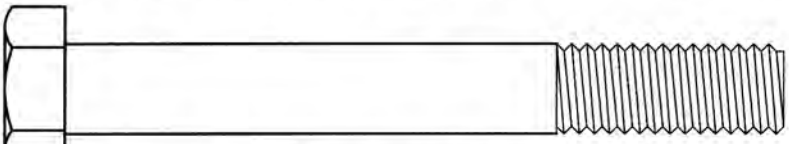


Key # (41) square head bolt 10mm x 55mm w/ dog point QTY. 3

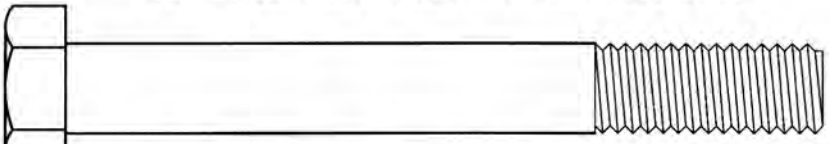


Key # (34) hex bolt 12mm x 25mm full thread QTY. 1

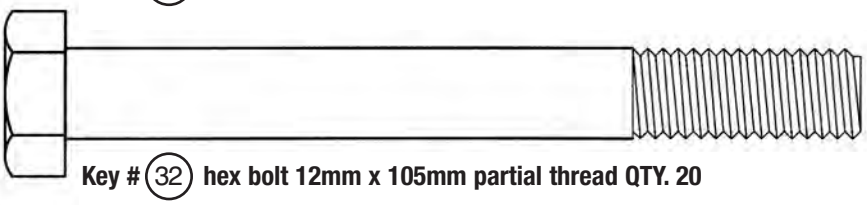
Key # (37) round allen head 10mm x 90mm partial thread bolt QTY. 4



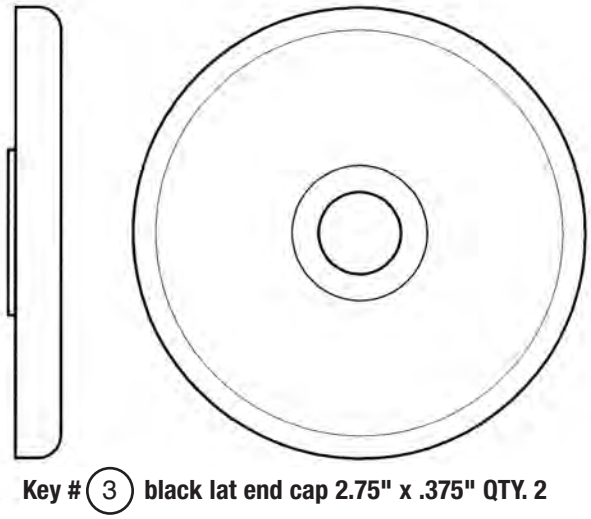
Key # (33) hex bolt 12mm x 95mm partial thread QTY. 1



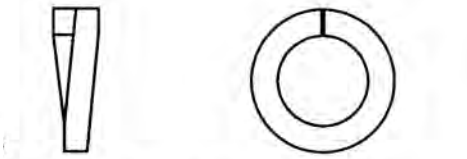
Key # (31) hex bolt 12mm x 100mm partial thread QTY. 1



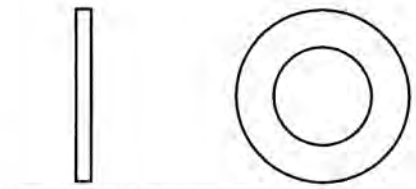
Key # (32) hex bolt 12mm x 105mm partial thread QTY. 20



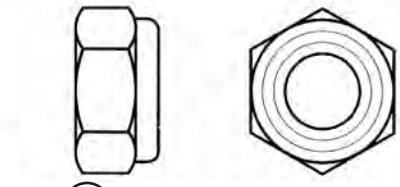
Key # (3) black lat end cap 2.75" x .375" QTY. 2



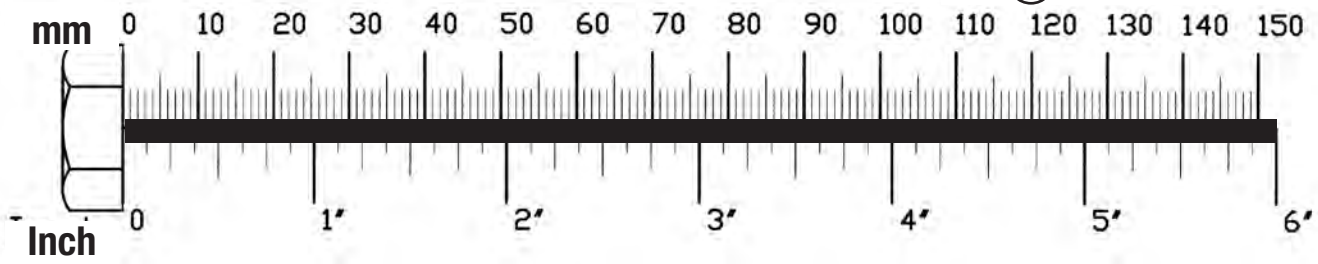
Key # (49) spring lock washer 12mm QTY. 1



Key # (50) flat washer 12mm QTY. 44

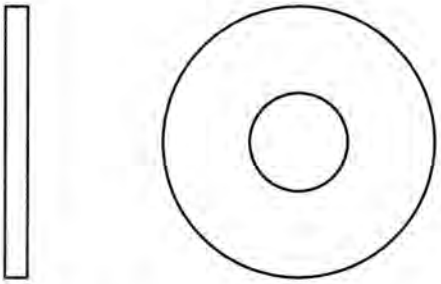


Key # (48) nylon lock nut 12mm QTY. 22

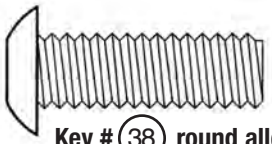


SBL460 Hardware (continued)

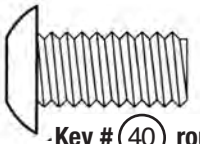
(shown in actual size)



Key # 65 flat washer 13mm x 36mm QTY. 2

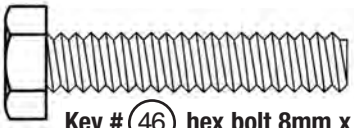


Key # 38 round allen head 10mm x 30mm full thread bolt QTY. 10

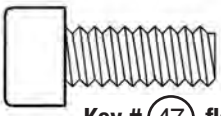


Key # 40 round allen head 10mm x 20mm full thread bolt QTY. 18

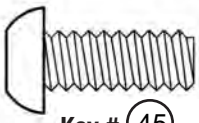
Key # 42 hex bolt 8mm x 70mm full thread QTY. 3



Key # 46 hex bolt 8mm x 40mm full thread QTY. 1



Key # 47 flat allen head 8mm x 20mm bolt QTY. 2



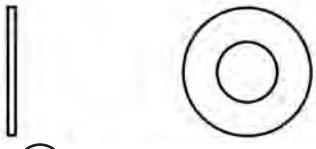
Key # 45 round allen head 8mm x 25mm full thread bolt QTY. 12

Key # 53 standard nut 10mm QTY. 3

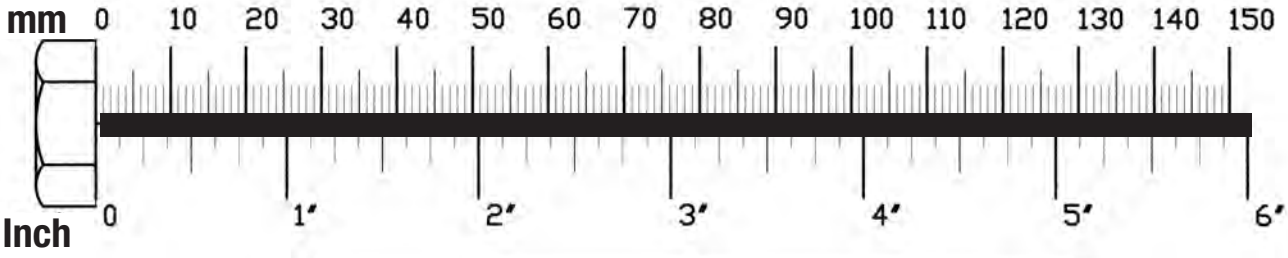
Key # 58 standard nut 8mm QTY. 1

Key # 59 nylon lock nut 8mm QTY. 1

Key # 60 spring lock washer 8mm QTY. 15

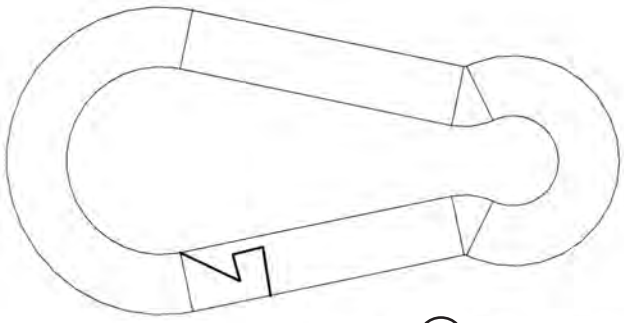


Key # 61 flat washer 8mm QTY. 17



SBL460 Hardware (continued)

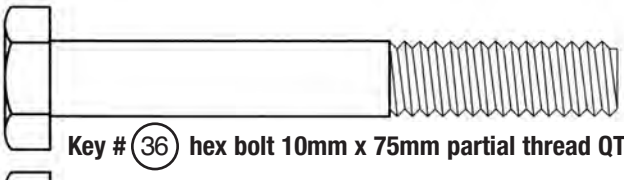
(shown in actual size)



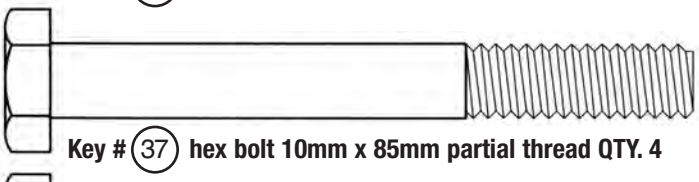
Key # (67) quick release snap link QTY. 6

Key # (52) zinc bushing 10mm QTY. 2

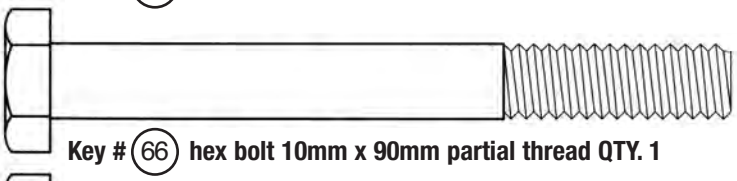
Key # (55) spring lock washer 10mm QTY. 34



Key # (36) hex bolt 10mm x 75mm partial thread QTY. 4

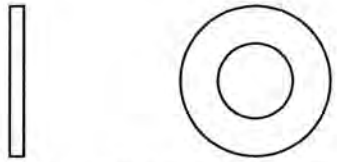


Key # (37) hex bolt 10mm x 85mm partial thread QTY. 4

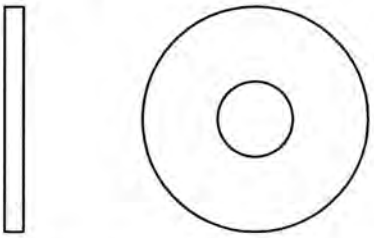


Key # (66) hex bolt 10mm x 90mm partial thread QTY. 1

Key # (35) hex bolt 10mm x 100mm partial thread QTY. 2

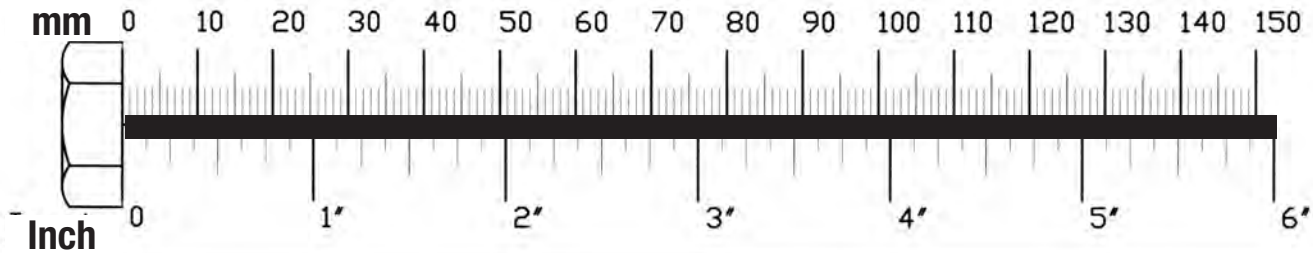


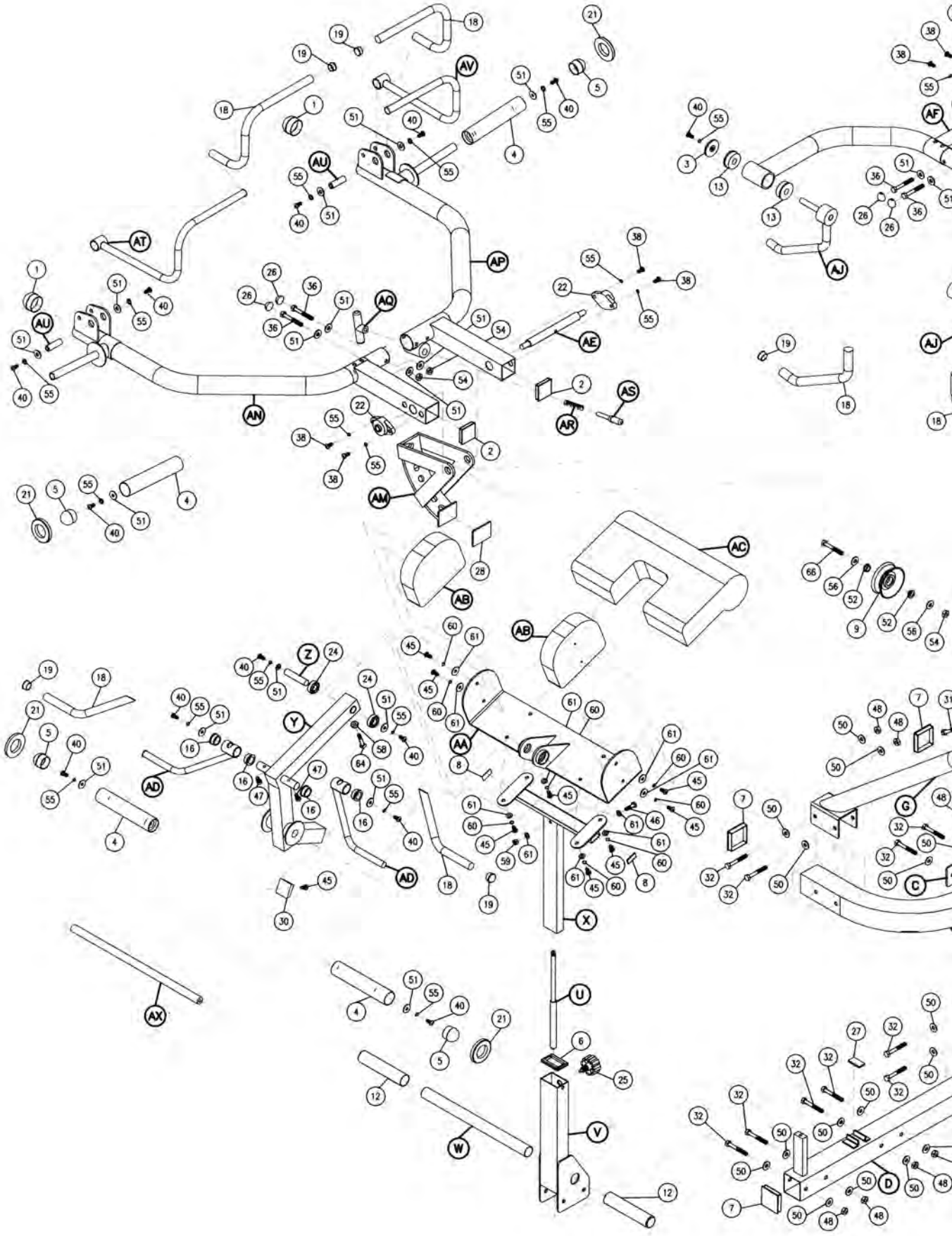
Key # (56) flat washer 10mm QTY. 10



Key # (51) flat washer 10mm x 30mm QTY. 2

Key # (54) nylon lock nut 10mm QTY. 11




AT
AU
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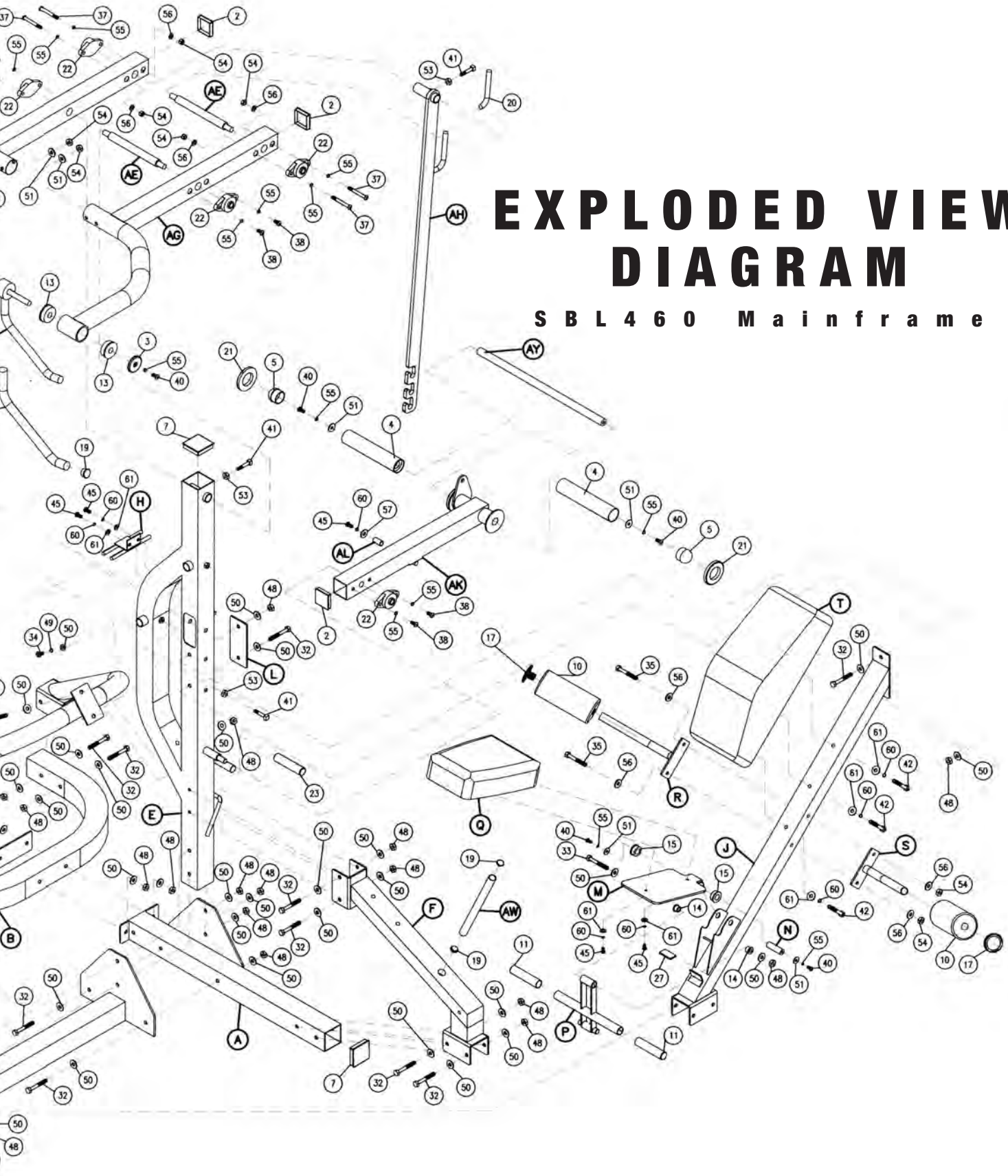
EXPLODED VIEW DIAGRAM

SBL460 Mainframe



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