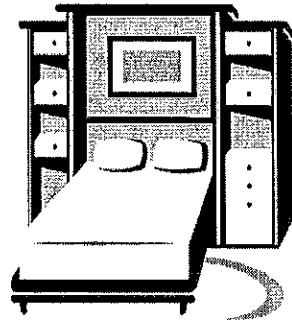


\$15.00

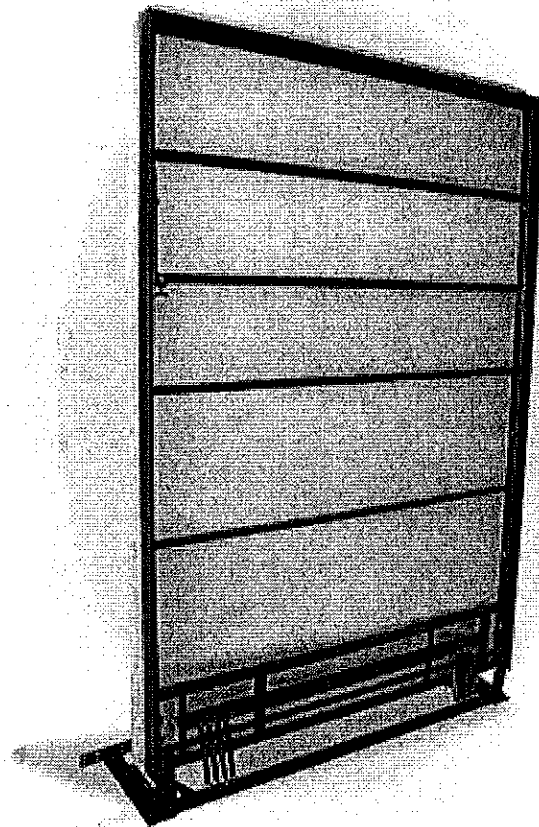
MURPHY®

WALL-BEDS HARDWARE INC.



INSTRUCTIONS

Complete Wall-Bed Hardware(Bi-Fold) System



Available in: Vertical

- Single/Twin
- Double/Full
- Queen

Established in 1975
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Contents

Before you Begin	3
Equipment Checklist	3
Component & Hardware List	3
Assembling Floor Base	4
Assembling Bed Frame	6
Assembling Legs	6
Assembling Mattress Stay	7
Installing the Mattress Foundation	7
Installing Springs	8

Please Note

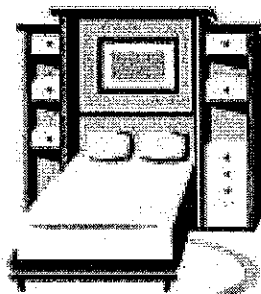
The components and hardware are packaged in no particular order. Unpack all boxes at once. Part numbers listed match the Parts List Diagram on page 3.

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CONGRATULATIONS

on your purchase of the Murphy Wall-Bed Hardware (Bi-Fold) System.



Other Quality Products:

- Elite Aluminium & Supreme Steel Panel Bed Systems
- Side-Tilt Panel Bed System
- RTA Bed Cabinets & Side Cabinets
- Do-It-Yourself Mechanism Panel Bed.
- Extended legs
- Super Springs – Support 20% more weight

The Murphy Wall-Bed

10-Year warranty on Wall Bed Hardware

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Before You Begin

For Optimum Installation:

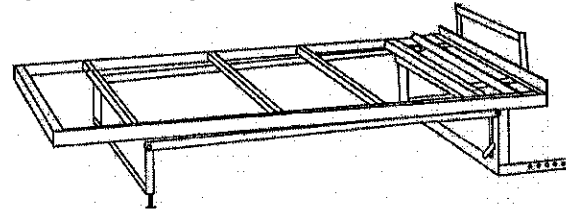
1. Read through this manual, studying the photos and illustrations, before commencing installation.
2. Gather all tools and materials you will need by consulting the Equipment Checklist.
3. Follow the instructions carefully in the order that we have indicated, paying particular attention to the items appearing in bold and marked in boxes.
4. Unpack all four cartons of your Easy-to-Assemble (ETA) Bi-Fold Closet Bed system. Identify all components according to the packing lists contained in each box.

Required Equipment

- Hammer Drill (if attaching base to concrete floor)
- Multi-Bit Screwdriver
- 10" Adjustable Wrench
- 7/16" or 1/2" Open-End Wrench
- 36" Level
- Tape Measure (10' minimum)
- Ten (10) 1" screws & washers for attaching three-part mattress foundation to bed frame (not included)
- Suitable drill bit for installing lag screws if attaching base to a wood floor
- Vise Grips (for mounting springs)

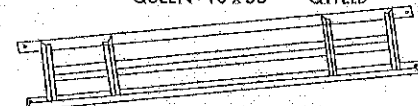
Easy-to-Assemble (ETA) Bi-Fold Bed System Components & Hardware

- (1) RIGHT LEG 3/16"X1"X11" U-RL
- (1) LEFT LEG 3/16"X1"X11" U-LL
- (2) ANGLE BRACES 1/8"X1"X5 1/4" U-AB
- (2) MATTRESS ARMS 1"X1"X6-1/2" U-MA
- (1) MATTRESS RETAINER BAR 1/4"X1"X 20"(S), 28"(D), 31 7/8"(Q) U-MRB
- (2) LEG ACTUATOR BARS 3/16"X1"X53 3/8" U-LAB
- (1) RIGHT SIDE RAIL 1.5"X2"X72 7/16" U-RSR
- (1) LEFT SIDE RAIL 1.5"X2"X72 7/16" U-LSL
- (1) BOTTOM SPRING BAR 2"X2"X33 3/4"(S), 48 3/4"(D), 54 3/4"(Q) Q-BSB
- (1) YOKE CONNECTOR BAR 1/8"X1"X34"(S), 48 3/4"(D), 56"(Q) Q-YCB
- (1) FOOT RAIL 2"X1 1/2"X35 13/16"(S), 50 13/16"(D), 57 1/2"(Q) Q-FR
- (1) LEG CONNECTOR BAR 1"X1"X34"(S), 49"(D), 56"(Q) Q-LCB
- (3) STIFFENERS 1"X1"X34"(S), 49"(D), 56"(Q) Q-ST



- (1) RIGHT FLOOR YOKE 11.5" x 11.5" RFT
- (1) LEFT FLOOR YOKE 11.5" x 11.5" LFT
- (1) WELDMENT

SINGLE - 10" x 35"	SWELD
DOUBLE - 10" x 56"	DWELD
QUEEN - 10" x 56"	QWELD



- (12) HEX HD. BOLTS 1/4 - 20 x 0.50" UMB75
- (10) HEX HD. BOLTS 1/4 - 20 x 0.75" UMB75
- (2) HEX HD. BOLTS 1/4 - 20 x 1.75" UMB75
- (6) HEX HD. BOLTS 1/4 - 20 x 1.25" UMB75
- (30) HEX HD. NUTS 1/4" UMB75
- (8) CONCRETE ANCHORS UMANC
- (2) LEG LEVELLERS UMLEV
- (4) NYLON WASHERS UMWNY
- (2) NYLON SPACERS .500-O.D. x 26-I.D. UMSPNY
- (2) ZINC WASHERS 3/4"-O.D. x 3/16" ZW
- (2) QUADREX PAN HD. SCREWS PHS-625
- (2) VELCRO UMB75
- (10) SPRINGS 1225

Step-by-Step Instructions

Before You Begin

Assess whether you will be installing the bed frame to a concrete or a wood floor. These instructions depict installation of the bed frame onto a concrete base. If you choose to install the frame to a wood floor, ensure you are securing it to the floor using 1-1/2" lag screws.

If installing on concrete with in-floor heating, be aware of piping in the floor. The wall-mount system option should be used to avoid damaging heating pipes.

Floor Base Parts & Components

- Left Floor Yoke (also referred to as Left Base Bracket)
- Right Floor Yoke (also referred to as Right Base Bracket)
- Leg Actuator Bar
- Yoke Connector Bar
- Base Angle Frame (also referred to as Bottom Spring Bar)
- Corner Angle Brace
- Nylon Washer
- Nylon Washer Locknut
- 3/4" Bolt
- 1-1/2" Bolt

Assembling Floor Base

1. Unpack and identify all parts.
2. Lay base angle frame (bottom spring bar) on the floor, as shown in Figure 1.
3. Attach left and right floor yokes (base brackets) with two pairs of 3/4" bolts and nylon insert locknuts. Tighten down bolts and nuts.
4. Attach corner angle braces on outside of frame, ensuring floor yokes (base brackets) are square to the base angle (bottom spring bar).
5. Attach yoke connector bar to the floor yokes (base brackets), which is shown in place in Figure 4. **Please Note:** The assembled piece will now be referred to as the yoke frame.
6. Position yoke frame on floor inside of closet or wall cabinet and centre, allowing an equal space on the left

and right side. Yoke frame should be a **minimum of 14" from wall**. Mark holes on the floor to distinguish drill points to insert anchors. Refer to Figure 4 for positioning and appearance of assembled yoke frame.

7. Move yoke frame, drill holes and install anchor bolts in concrete. Refer to Figure 3 for illustration of drilling and bolt anchoring process. If mounting bed frame to a wood floor, drill pilot holes to accommodate lag screws.
8. Attach yoke frame to floor with anchor bolts (if anchoring base to a cement floor), or lag screws (if anchoring base to a wood floor). See Figures 4 and 4 for image of frame secured to a cement floor.

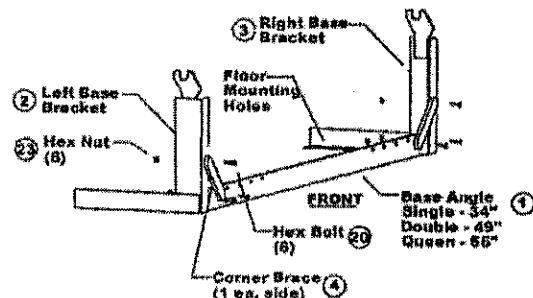


Figure 1. Diagram of Base Angle (Bottom Spring Bar) Frame

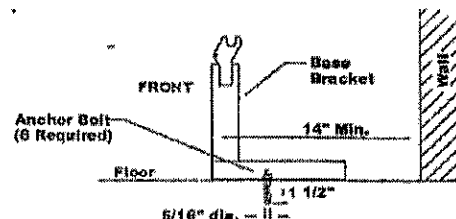


Figure 2. Position and view of Base Angle Frame 14" from wall

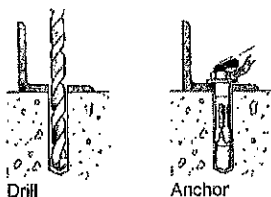


Figure 3. Illustration of drilling process to drill hole in concrete and anchor bolt to secure yoke.

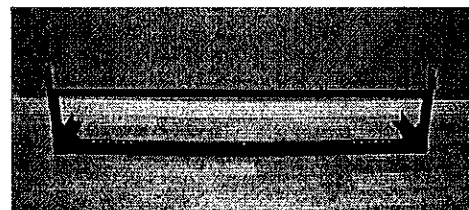


Figure 4. Base angle frame assembly, fully assembled and anchored to floor.

Assembling Bed Frame

1. Lay parts out on the floor, as shown in Figures 5 and 6.

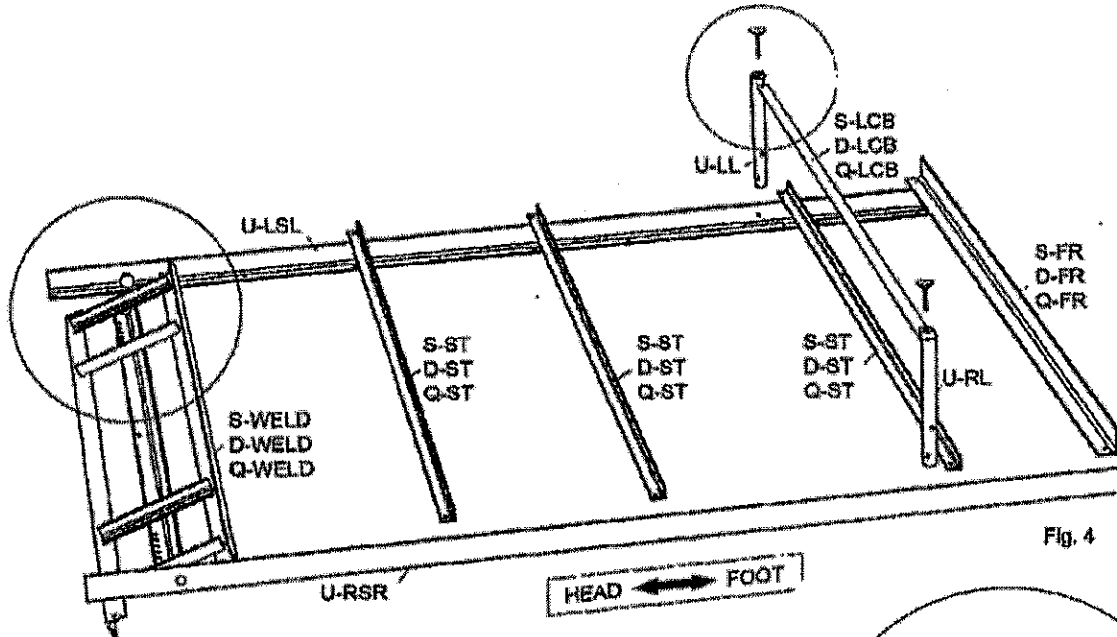


Fig. 4

2. Attach cross members (stiffeners) to side rails using $\frac{3}{4}$ " bolts, bringing bolt up through side rail into cross member. Fasten loosely with nylon insert locknuts. **Do not tighten up yet.**

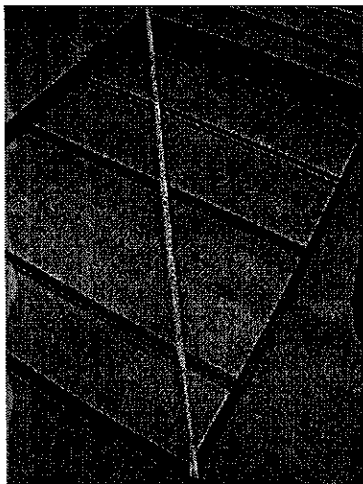


Figure 8. Image of assembled bed frame and process of ensuring square by measuring from corner to corner

3. Using $\frac{3}{4}$ " bolts, attach the provided spring bar assembly (weldment) to the side rails with the spring holes towards

the head of the bed. Make sure the spring bar assembly (weldment) straddles the side rails as shown in Figure 6.

4. Square the bed frame by measuring from corner to corner diagonally on both

sides and then tighten all bolts and nuts. Refer to Figure 8 for photographic demonstration of measurement process to

ensure the frame is square.

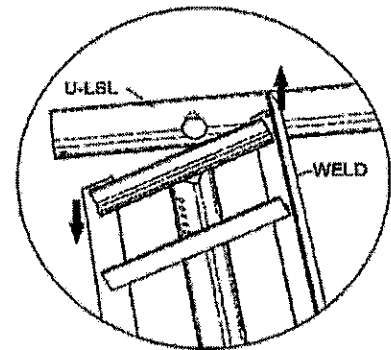


Figure 6. Close-up view of circled area in Fig. 5 illustration, above.

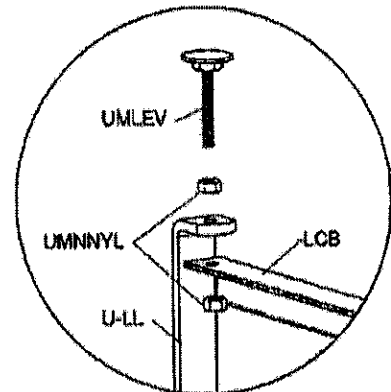


Figure 7. Close-up view of circled area, in Fig. 5 above, showing leg connector bar (see assembly directions on page 6).

Assembling Legs

1. Turn bed frame assembly into vertical position and place onto yoke assembly, as shown in Figure 9.
2. Attach the left and right legs to the side rails of the frame. (**Please Note:** The holes used to connect the legs to the side rails are offset towards the foot of the bed.)

Refer to Figure 10 for close-up view of assembly details to assist in distinguishing right from left leg. **Please Note:** you must identify left and right legs to ensure bed will open and close properly. The photograph in Figure 11 provides a view of an assembled right leg.

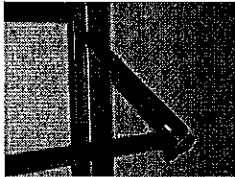


Figure 11. Photo of assembled right leg.

3. With the bed frame in the vertical position, attach the leg connector bar using the adjustable leg leveller feet, as shown in Figure 7 (previous page).

4. Bolt the foot actuators to the right and left legs using 1-1/4" bolts, nylon washers and nylon insert locknuts. Tighten snug. Refer to Figure 10 for close-up illustration of positioning for foot actuator, and to Figure 12 for a photograph showing assembled actuator mechanism, which enables the legs to extend and contract as the bed is raised and lowered.

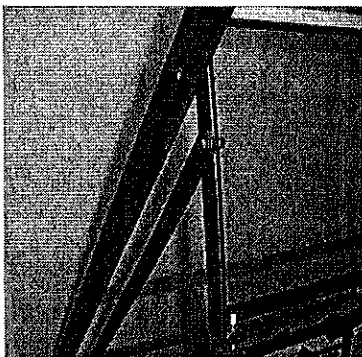


Figure 12. Photograph showing assembled actuator mechanism.

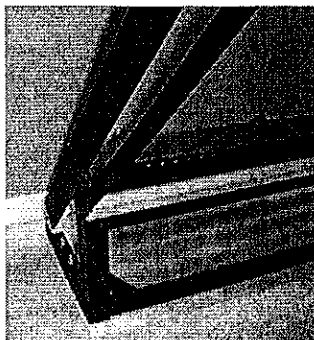


Figure 13. Photograph of assembled actuator mechanism attached to the floor assembly.

3. With the bed frame in the vertical position, attach the leg connector bar using the adjustable leg leveller feet, as shown in Figure 7 (previous page).
4. Bolt the foot actuators to the right and left legs using 1-1/4" bolts, nylon washers and nylon insert locknuts. Tighten snug. Refer to Figure 10 for close-up illustration of positioning for foot actuator, and to Figure 12 for a photograph showing assembled actuator mechanism, which enables the legs to extend and contract as the bed is raised and lowered.

5. Bolt the other ends of the foot actuators to the yoke frame using 1-1/4" bolts, nylon washers and nylon insert locknuts. Tighten snug. Refer to Figure 14 for close-up illustration of the parts and assembly process, and to Figure 13 for a photograph of the assembled actuator mechanism attached to the floor base assembly. Refer to Figure 11 for a view of the assembled leg.

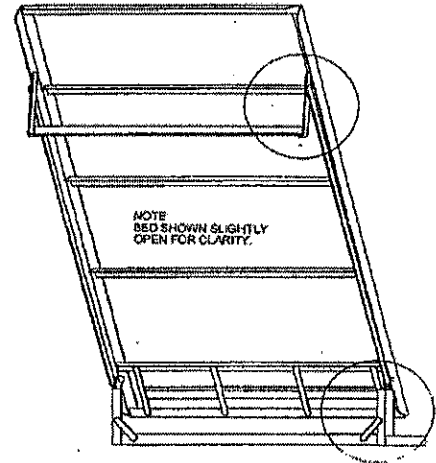


Figure 9. Illustration of bed frame assembly attached to base angle floor base assembly.

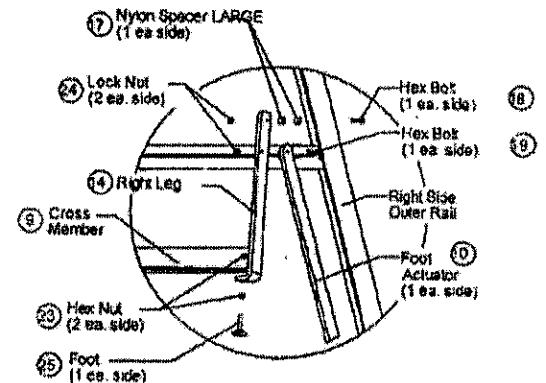


Figure 10. Close-up illustration of parts position for right leg assembly.

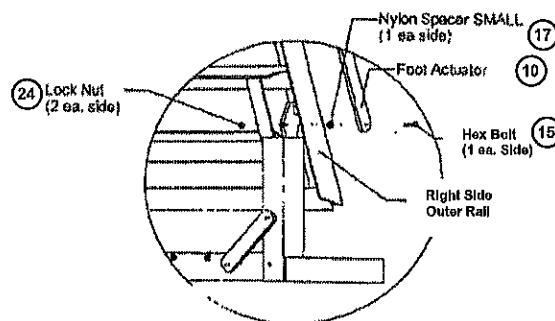


Figure 14. Close-up illustration showing foot actuator connecting to the floor base assembly.

Assembling Mattress Stay

1. Bring frame down slowly to horizontal position.
2. Attach the mattress stay angles and mattress stay bar to the spring bar assembly (weldment). Refer to Figure 15 for a view of the assembled mattress stay attached to the frame, and to Figure 16, which illustrates positioning of components. Attach the two mattress arms to the head of the frame and attach the retainer bar to the ends of the mattress arms. Fasten pieces together with $\frac{3}{4}$ " bolts inserted from the side. Refer to Figure 9 for an illustration of assembled bed frame.

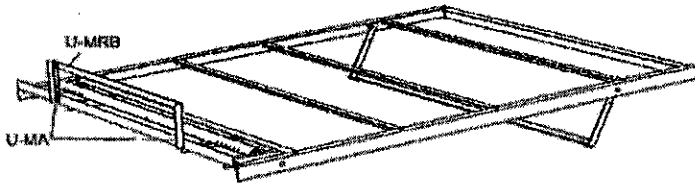


Figure 15. Illustration depicting mattress stay angles and mattress stay bar attaching to spring bar assembly (weldment).

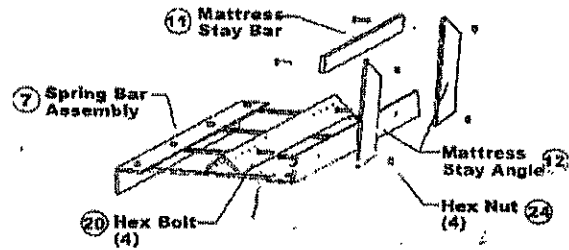


Figure 16. Illustration depicting mattress stay angles and mattress stay bar attaching to spring bar assembly.

Installing the Mattress Foundation

Please Note: The fabric-covered mattress foundation comprises three separate pieces. The piece marked "Head" must be placed at the head of the bed; the piece with square edges is in the middle, and the piece with rounded edges is at the foot. Customers may choose to use a $\frac{1}{2}$ " to $\frac{3}{4}$ " plywood base versus the mattress foundation.

1. Place the mattress foundation piece marked "Head" onto the frame (with rounded outer edges closest to the wall) and carefully return frame to vertical position. Attach the "Head" mattress foundation piece to the frame using four (4) wood screws through the holes provided in the side rails of the bed frame (2 screws on each side). Refer to Figure 17, which demonstrates vertical position of frame for attaching mattress foundation pieces to the frame.
2. Bring frame back down to horizontal position again, and position middle mattress foundation piece directly beneath attached "Head" mattress foundation piece, and carefully return frame to vertical position. Attach middle mattress foundation piece to the frame using two (2) wood screws through the holes provided in the side rails of the bed frame (1 on each side).
3. Bring frame back down to horizontal position once again, and place the nylon mattress straps (on one each side of bed), aligning them with the pre-drilled holes at the foot of the bed. Place the final mattress

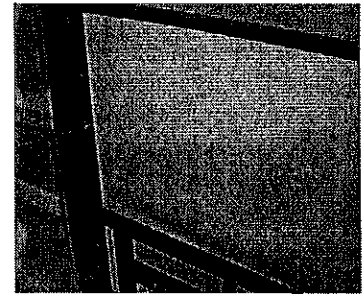


Figure 17. Attaching "Head" mattress foundation piece to frame while frame is in vertical position.

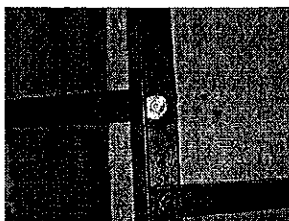


Figure 18. Nylon mattress strap and "Foot" foundation piece attached to the frame.

foundation piece over top of the nylon mattress straps and onto the frame. Run screw through frame hole, through strap and tighten into foundation. Refer to Figure 18, which shows nylon mattress strap and "Foot" foundation piece attaching to the frame. Attach "Foot" mattress foundation piece to the frame using two (2) additional wood screws through the holes provided in the side rails of the bed frame (1 on each side).

Installing Springs

Please Note: Depending on the frame size, not all holes in the frame may be used. Twin beds require four (4) springs; double beds require six (6) springs; and queen beds require eight (8) springs.

1. Attach one spring in the outermost hole on either side of the base angle frame assembly. Using locking pliers, grip the top of the spring and stretch spring upwards, using the yoke connector bar as a fulcrum point for leverage. Hook spring into the spring bar assembly (weldment) and tap lightly to seat spring in place. Refer to Figure 18 for detailed view of spring attachment. Refer to Figure 19 for photo showing spring loading technique with locking pliers to grip spring and the yoke connector bar used as

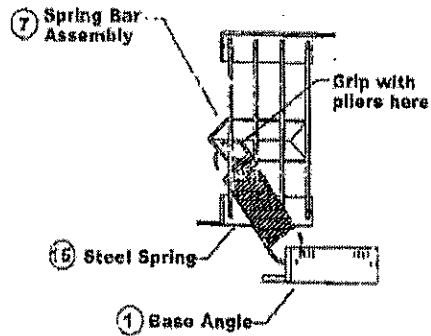


Figure 18. Detailed view of attaching spring from base angle to spring bar assembly (weldment).

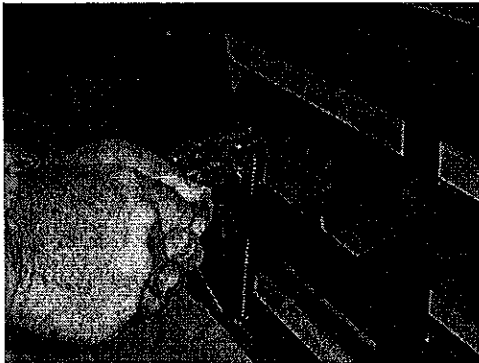


Figure 19. Spring loading technique with locking pliers to grip spring and using the yoke connector bar as leverage to stretch spring into position.

leverage to stretch spring into position. Repeat process on the other side, attaching spring to the outermost hole.

2. Bring frame slowly down to the horizontal position.
3. Place mattress onto the foundation and secure mattress with the installed nylon mattress strap. The weight of the mattress will balance the bed once the remainder of the springs are in place.
4. Return the frame to the vertical position and attach the balance of the springs, starting from the outside holes and working toward the middle. Refer to Figure 20 showing spring placement and position.

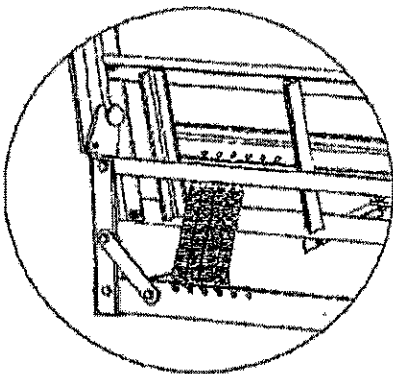


Figure 20. Close-up view showing spring placement and position.