OSBORNE®

ACCU-ARM® Portable Scales

Assembly Instructions

FS-PSN500 & FS-PSW500
Narrow & Wide Scales

IMPORTANT NOTICE: An ACCU-ARM Scale must be correctly assembled in order to function accurately. Follow these step-by-step instructions carefully and refer to the drawings provided. Failure to do so will result in erroneous measurement. If you encounter difficulty, contact Osborne Industries Customer Service.

Assembly requires the following tools:

- 7/16-in. open-end wrench
- 1/2-in. open-end wrench
- 1/2-in. socket wrench
- 9/16-in. open-end wrench
- 9/16-in. socket wrench
- hammer
- pliers
- locking pliers

SCALE FRAME ASSEMBLY: Step One. Place frame bottom (1) on floor with side tabs (A and B) facing upward. Locate two frame ends (2) and position on each end of the frame bottom (1). Note that the angle-iron leg of the bottom crosspiece on the frame ends (2) is facing outward. Fasten the frame ends (2) to the frame bottom (1) using 6-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts. Tighten all hex nuts. **(See Figure 4 for details.)**

Step Two. Find the two end assemblies (11) and attach them to the top of the frame ends (2), in the two center holes, using 4-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts. Do not tighten hex nuts. Then attach the top channel (10) to the end assemblies (11) using 4-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts. Check carefully that the flat surface of the top channel (10) is on top of the end assemblies (11) and that the bolts are inserted from the top down. Hand tighten all hex nuts. **(See Figure 2 and Figure 4 for details.)**

BASKET ASSEMBLY: Step One. Locate the two basket ends (4) and place them vertically inside of the scale frame noting that the angle-iron cross member of the basket end (4) is on the top with the angle-iron leg facing towards the interior of the scale on both ends. Next, find the basket top (3) and place it inside the scale frame as well as on top of the basket ends (4) being careful that the “ears” on the end of the basket top (3) are pointing upward and are through both frame ends (2). Attach basket ends (4) to basket top (3) using 4-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts, making sure to use the holes nearest each end of the basket top (3). DO NOT TIGHTEN ANY HEX NUTS YET. ASSEMBLY WILL BE EASIER IF TIGHTENING IS LEFT UNTIL LATER. **(See Figure 4 for details.)**

Step Two. Locate the two basket hanger brackets (5). Place the basket hanger bracket (5) between the ends of the basket top (3) and the top angle-iron cross-member of the basket end (4). Notice that the longer side of the basket hanger bracket (5) is attached to the side of the basket end (4) and the shorter end of the basket hanger bracket (5) is attached to the side of the basket top (3). When assembling the Wide Scale, fasten the basket hanger bracket (5) using 8-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts. All available holes in the basket hanger bracket(5) will be used. Repeat the above procedures to install the remaining basket hanger bracket (5) on the opposite end of the scale. When assembling the Narrow Scale, fasten the basket hanger bracket (5) using 6-each 5/16 x 7/8-in. bolts, lockwashers and hex nuts. This results in one hole in the basket top-to-basket hanger bracket connection being left open to receive sway bar (19) later on in assembly. This open hole is located nearest to the enclosed side of the basket top (3). Repeat the above procedures to install the remaining basket hanger bracket (5) on the opposite end of the scale, ensuring that the same hole on both ends of the scale is left open. **(See Figure 4 for details.)**

Step Three. Locate basket floor (6) and place this piece inside of the basket ends (4), paying particular attention to the orientation of the middle tab (C) on the side of the basket floor (6) bottom. The hole in this tab (C) should be nearest the hole in the vertical tab (A) located on the frame bottom (1). Let the basket floor (6) rest on the bottom bar of the basket ends (4). Next find the two basket sides (8) and insert inside scale basket between the two basket ends (4) with the bent edge of the basket sides (8) upward and facing outward from the basket. Check for correct orientation by notic-

ing that the decals on the basket sides (8) should read correctly from outside the scale. Also, the bottom of the basket side (8) must be inside of the basket floor (6). The distance between the two basket ends (4) may need to be widened to allow the bent edge of the basket side (8) to be inserted. This is achieved by pushing the bottoms of the basket ends (4) toward the ends of the scale frame (2) or slightly outward to allow the basket sides (8) to clear the basket ends (4). **(See Figure 1, Figure 4, and Figure 5 for details.)**

Step Four. Attach a basket side (8) to the basket end (4) using 2-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts through the top hole of each end in the basket side (8). Bolts must be inserted from the inside of the scale basket outwards to prevent injury to the animals by protruding bolts. (Meaning: Bolt heads will be inside of scale basket.) Repeat procedures for the opposite side of the scale basket. **(See Figure 5 for details.)**

Step Five. Next, locate 4-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts. Fasten the basket side (8), basket floor (6) and basket end (4) together by aligning the lower corner hole on the basket side (8) with the basket floor end hole (6) and the lowest hole in the basket end (4). Remember to insert bolt with head inside of the scale basket and hex nut on the outside of the scale basket. Repeat procedures for each of the three remaining lower corners. **(See Figure 4 and Figure 5 for details.)**

Step Six. Locate 8-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts to complete assembly of the scale basket. Use 4-each of the fasteners to connect the basket sides (8) to the basket ends (4). Use the remaining 4 fasteners to connect the basket sides (8) to the basket floor (6) and basket ends (4). Leave the one hole on each side on the scale basket directly above the horizontal tab (B) on the frame bottom (1) open. This hole is fastened with 2-each 5/16 x 1/2-in. bolts, lock washers, and hex nuts. This bolt is inserted with the head outside the scale basket rather than on the inside of the scale basket. This allows for a greater clearance for the Wheel-Kit installation. Reminder: DO NOT TIGHTEN ANY BOLTS UNTIL LATER. **(See Figure 4 and Figure 5 for details.)**

Step Seven. Find the four basket side bars (9). Place one side bar (9) inside of the scale basket directly above the basket side (8). Notice that both ends of the side bar (9) have one flattened side. Attach each end of the side bar (9) to the basket end (4) using 2-each 5/16 x 7/8-in. bolts, lockwashers, and hex nuts with the flattened side against the basket end (4). The oval side of the side bar ends (9) must be toward the inside of the scale basket and the bolts must be inserted with bolt heads inside of the scale basket. Place another side bar (9) above the first side bar (9) just installed in the same manner. Repeat same procedures for installing the side bars (9) on the other side of the scale. Next, place the tie bars (7), one on each exterior side of the frame ends (2), using the third hole down from the top of the frame ends (2). The bolts are inserted with the bolt heads outside of the scale. **(See Figure 4 and Figure 5 for details.)**

Step Eight. Locate 2-each 3/8 x 7/8-in. spade bolts (24) and jam nuts. Insert the spade bolt (24) with jam nut attached through the center-hole of the top angle-iron on the basket end (4). Repeat procedure for remaining spade bolt. Note that spade bolt end holes (24) must be aligned at 90 degree angle to basket ends (4). This allows for proper assembly of basket hanging links, (15 and 16), to spade bolts (24) later on in scale assembly. Tighten spade bolts (24) with 2-each 3/8 x 7/8-in. lockwashers and hex nuts. **(See Figure 2 for details.)**

Step Nine. Now all hex nuts are ready to be tightened. Tighten the top bolts of the scale basket first and work towards the bottom. The scale basket and frame are now complete.

SCALE-ARM ASSEMBLY: Step One. Locate the short scale-arm (12), long scale-arm (13), 6-each 1/4 x 7/8-in. clevis pins; 3-each 1/4 x 1 1/4-in. clevis pins; 12-each 1/4-in. flat washers; and 9-each 3/32 x 3/4-in. cotter pins. Place the end of the long scale-arm (13) with the two nearby holes, spaced apart the farthest, between the two vertical pieces of the end assembly (11). Align the top hole in the end assembly (11) with the end hole on the long scale-arm (13). Using a hammer, carefully drive one 1/4 x 1 1/4-in. clevis pin through each hole until the pin is centered. Secure using 1-each 1/4-in. flat washer and 1-each 3/32 x 3/4-in. cotter pin. Next, locate the lower indicator hanging hook bolt (21) with the adjustable yoke end (22) attached and place through the 5/8-in. hole in the top channel (10). Fasten adjustable yoke end (22) to the long scale-arm (13) using another 1/4 x 1 1/4-in. clevis pin. Secure using 1-each 1/4-in. flat washer and a 3/32 x 3/4-in. cotter pin. Attach the locking pliers to the top of the hanging hook bolt (21) and lifting in an upward motion, providing sup-

port to the end of the long scale arm (13). Place the end of the short scale-arm (12) between the two vertical pieces of the end assembly (11) on the opposite end of the scale from where the long scale arm (13) was attached. Using a hammer, drive a 1/4 x 1 1/4-in. clevis pin through both the bottom hole of the end assembly (11) and the end hole of the short scale-arm (12) until the pin is centered. Secure using 1-each 1/4-in. flat washer and 1-each 3/32 x 3/4-in. cotter pin. **(See Figure 1 and 2 for details.)**

Step Two. Locate the six basket hanging links: (2-each, short, basket hanging links (14); 2-each, medium, basket hanging links (15); and 2-each, long, basket hanging links (16)). Note: Use the end holes in the basket hanging links to attach with only.
Attach only one of the short basket hanging links (14) to the end of the short scale-arm (12) and the center of the long scale-arm (13) by using 1/4 x 7/8-in. clevis pins. Insert the clevis pins through the end holes of the basket hanging link and the holes of the two scale arms (12 and 13). Slide the remaining short basket hanging link (14) onto the opposite side of the clevis pins. Secure both links together using 2-each 1/4-in. flat washers and 3/32 x 3/4-in. cotter pins. Next, attach the top hole of the medium, basket hanging links (15) to the remaining hole in the short scale arm (12) in the same manner as above. Lift the end of the scale basket slightly to attach the bottom hole of the medium, basket hanging links (15) to the spade bolt (24) in the basket end (4) using a 1/4 x 7/8-in. cotter pin. Secure links similarly as above. Now fasten the long, basket hanging links (16) to the long scale-arm (13) at the opposite end of the scale. Lift the scale basket slightly and fasten links to spade bolt (24) in the basket end (4) and secure links similarly as above. The scale basket should now swing freely from the scale arms. **(See Figure 4 for Details)**

OFFSET SCALE-ARM ASSEMBLY (optional): First the scale basket must be raised slightly to remove the lower clevis pins from the long hanging link (16) and the medium hanging link (15), disconnecting them from the spade bolt (24). Then remove bolts from the bottom of the end assemblies (11), placed in the center of each frame end (2). When moving, support the long scale arm (13) and the short scale arm (12) by sliding the entire scale assembly so the last two holes of the frame ends (2) line up with the two holes in the end assemblies (11). Next, replace the bolts in the bottom of the end assemblies (11) by bolting the assemblies to the top of the frame end (2). Then replace the clevis pins in the long and medium basket hanging links, (16 and 15), on each side of the basket top (3). **(See Figure 3 for details.)**

SWAY-BAR ASSEMBLY and INSTALLATION: Step One. Locate 2-each short, sway bars (18), 8-each long, sway bars (19), 20-each 5/16 x 1 1/2-in. bolts, 36-each 5/16-in. full hex nuts, 14-each 5/16-in. jam hex nuts, and 20-each 5/16-in. lockwashers.

Step Two. Take one, long, sway bar (19) and place one 5/16 x 1 1/2-in. bolt through one of the sway bar holes. Place 1-each 5/16-in. full nut and jam nut on the end of the bolt. Place another 5/16 x 1 1/2-in. bolt through the remaining hole of the long, sway bar (19), but in the opposite direction. Add hex nuts as mentioned above. Hand tighten all hex nuts. Repeat these procedures on another long, sway bar (19) and the two, short, sway bars (18). These four assembled sway bars (18 and 19) will now be used to attach the basket top (3) to the frame ends (2). Attach one of the long, assembled sway bars (19) to the top hole in the vertical leg of the frame end (2) and the aligning hole in the longest, horizontal leg of the basket top (3). Fasten both bolts to the scale using 1-each 5/16-in. lockwasher and a 5/16-in. full nut. Repeat attachment procedures for the other long, sway bar (19) on the opposite end of the scale, but same scale side. Next, attach the short, sway bars (18), to the opposite scale side as used for the installation of the long, assembled sway bars (19). Attach one short sway bar (18) in the top hole of the vertical leg of the frame end (2). Fasten the other end of the short, sway bar (18) into the hole on the shorter, horizontal leg of the basket top (3). Fasten using 1-each 5/16-in. lockwasher and a 5/16-in. full nut. Repeat procedure for the remaining, short, sway bar (18). All sway bars may be tightened immediately. **(See Figure 1 and Figure 4 for details)**

Step Three. Next, using one of the remaining long, sway bars (19), place one 5/16 x 1 1/2-in. bolt through one of the holes. Place 1-each 5/16-in. full nut and jam nut on the bolt and hand tighten. Place another 5/16 x 1 1/2-in. bolt through the other hole, in the opposite direction. Attach only one 5/16-in. full nut to the bolt and hand tighten. Repeat these procedures on another long, sway bar (19). After

assembling of sway bars is completed, attach one, long assembled sway bar (19) under the end of the scale basket floor (6) and connect the other end of the sway bar to the bottom hole in the vertical leg of the frame end (2). Secure with 1-each 5/16-in. lockwasher and full nut. Repeat attachment procedures for the remaining long, sway bar (19) on the other end of the scale. Notes: (Make sure sway bars are installed, with the bolt, only having one full nut attached, closest to the middle of the basket floor (6). Also, the two, sway bars must be located on the same side of the scale as the enclosed side of the basket top (3), not on opposite corners.) **(See Figure 1 and Figure 4 for details)**

Step Four. For the assembly of the next two, long, sway bars (19), place a 5/16 x 1 1/2-in. bolt through each hole of the long, sway bars (19). Attach a full nut to each bolt. All bolts should be inserted from the same direction. Hand tighten all full nuts. Then, install the assembled, long, sway bars (19) on opposite sides of the basket floor (6), by attaching them to the two vertical tabs (A and C) on the frame bottom (1) and the basket floor (6). Tabs (A and C) should be near enough to one another for easy attachment of the long, sway bar (19). Secure each bolt with 1-each lockwasher and full nut.
(See Figure 1 and Figure 4 for details)

Step Five. Finally, for assembly of the remaining two, long, sway bars (19), insert a 5/16 x 1 1/2-in. bolt through each hole of the long, sway bars (19). Place a jam nut on each bolt and hand tighten. All bolts should be inserted from the same direction. Repeat procedures for the remaining long, sway bar (19). To assemble the Wide Scale, install the two, assembled long, sway bars (19), by placing one end of the sway bar on the end of the basket top (3) and attaching the other end of the sway bar to the aligning hole in the vertical leg of the frame end (2). Secure bolts with 1-each lockwasher and full nut. To assemble the Narrow Scale, install the two, assembled long, sway bars (19), by placing one end of the sway bar on the end of the basket top (3) and fastening the long, sway bar (19) end through the hole left vacant earlier in the basket hanger bracket (5). Notice that this long, sway bar (19) must be on the same side of the scale as the sway bars located below the underside of the basket floor (6) ends. Placing all the sway bars on one side of the scale prevents load distortion of the scale basket during weighing operations. **(See Figure 1 and Figure 4 for details)**

SCALE INDICATOR INSTALLATION: Place the scale hanger bracket (17) on the top channel (10) above the lower indicator hanging hook bolt (21). Fasten with 1-each 5/16 x 7/8-in. bolt, lockwasher and hex nut. Attach the upper indicator hanging hook bolt (20) to the scale hanger bracket (17) using 1-each 1/4-in. flat washer and 1-each 1/4-in. nylon-lined locknut. Tighten locknut to the bottom of threads. Hang scale indicator (23) between hanger hook bolts (20 and 21) for weighing. **(See Figure 1, Figure 2, or Figure 3 for details.)**

Note: (For fine adjustment or operation of dial, or digital scale indicators follow the instructions included with the scale indicator. If a dial scale is used, an optional Damper Cylinder Kit is necessary for best results.)

ADDING GATES: Place the gate drop rod (25) through the gate (26) and place inside gate catch and lock mechanism. Repeat for the opposite end of the scale. Gates should open and close easily from both sides of gate and both ends of scale. **(See Figure 6 for details.)**

FINAL CHECKOUT: The ACCU-ARM Portable Scale should now be fully assembled. Check all fasteners to ensure that they are firmly tightened. A properly assembled ACCU-ARM Portable Scale is pre-calibrated to give accurate weights (+/- 1.5 lbs.) without field adjustments. However, if a known weight is available, the scale can now be checked. If the scale does not appear to give accurate weight values, this may indicate one of the following:

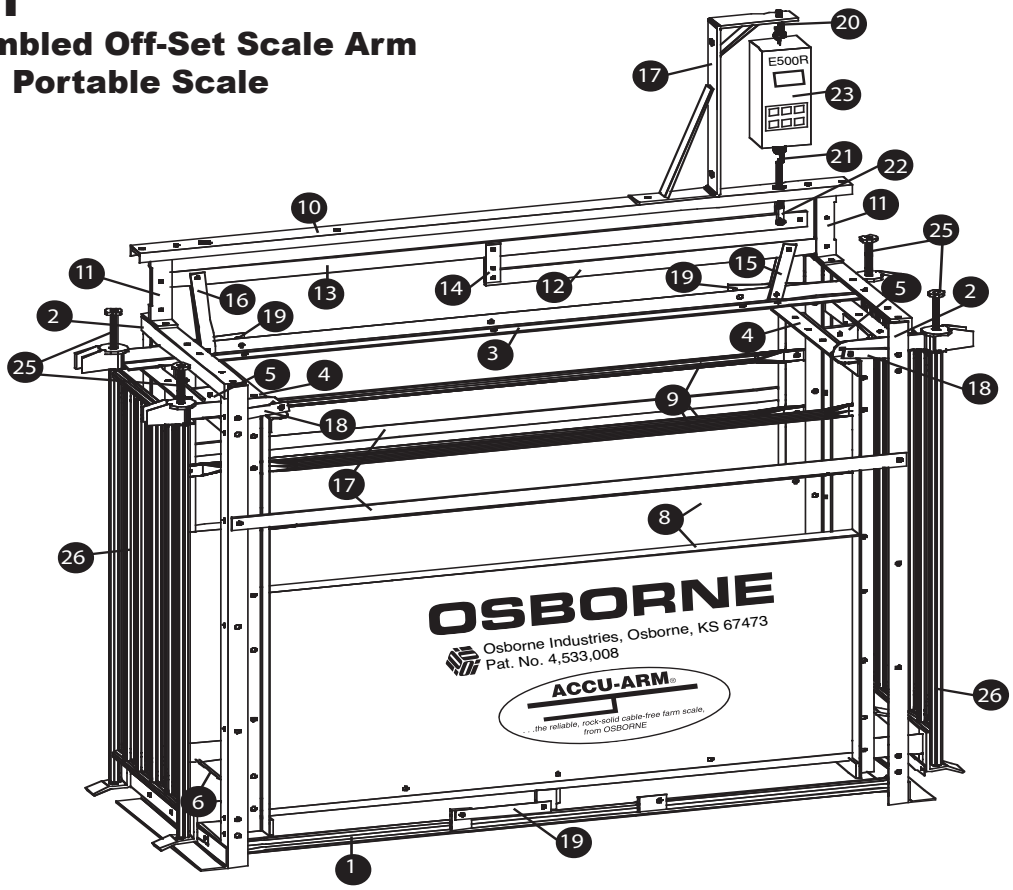
1.) An assembly error has been made.
2.) A clevis pin is out of position.
3.) The sway bars are not installed correctly, causing the basket to bind against the frame.
4.) The scale-arms may have been bent in handling and shipment causing them to drag against the frame.

If none of the above locates the cause of improper operation, call Osborne Customer Service (800-255-0316) at once.

USING YOUR ACCU-ARM PORTABLE SCALE: Operation of the scale on a reasonably level location is recommended for highest accuracy. Occasionally check the basket for soil and remove for accurate weighing. Re-zero scale, if necessary. For best results and a long scale life, use the scale in a clean, dry, and well-ventilated environment. Removal and storage of the digital or dial indicator to a clean, dry location is recommended between uses of the scale. Values obtained with the ACCU-ARM Portable Scale are not acceptable for legal trade. The ACCU-ARM Portable Scale is designed for on-farm weighing for management purposes only. OPERATE GATES BY GRIPPING THE DROP RODS TOP HANDLES OR THE GATE SIDES. DO NOT HOLD THE TOP BAR OF THE GATE! INJURY IS POSSIBLE IF THE GATE IS GRIPPED BY THE TOP BAR AS IT IS BEING OPENED OR CLOSED OR WHEN ANIMALS ARE EXITING.

Figure 1

Fully assembled Off-Set Scale Arm
ACCU-ARM Portable Scale



WIDE AND NARROW SCALES REFERENCE LIST:

Item No.	Part No.	Qty.	Description
1	KS-PSW005	1	Frame bottom, wide scale
or	KS-PSN005	1	Frame bottom, narrow scale
2	KS-PSW003	2	Frame ends, wide scale
or	KS-PSN003	2	Frame ends, narrow scale
3	KS-PSW002	1	Basket top, wide scale
or	KS-PSN002	1	Basket top, narrow scale
4	KS-PSW004	2	Basket ends, wide scale
or	KS-PSN004	2	Basket ends, narrow scale
5	KS-PS0011	2	Basket hanger bracket
6	KS-PSW001	1	Basket floor, wide scale
or	KS-PSN001	1	Basket floor, narrow scale
7	KS-PS0204	2	Tie bars
8	KS-PS0001	2	Basket side (scale side)
9	KS-PS0006	4	Basket sidebar (All 4 bars not visible in Figure 1)
10	KS-PS0201	1	Top channel
11	KS-PS0202	2	End assembly
12	KS-PS0208	1	Short scale arm
13	KS-PS0207	1	Long scale arm
14	KS-PS0010	2	Basket hanging link, short (3 7/8-in. long, zinc-plated)
15	KS-PS0206	2	Basket hanging link, medium (5 1/2-in. long, zinc-plated)
16	KS-PS0205	2	Basket hanging link, long (8 3/8-in. long, zinc-plated)
17	KS-PS0003	1	Scale indicator hanger bracket
18	KS-PS0203	2	Sway bar, short (4 3/8-in. long, stainless steel)
19	KS-PS0012	8	Sway bar, long (7-in. long, stainless steel) (All 8 bars not visible in Figure 1)
20	RFB-1720	1	Top indicator hanging hook bolt
21	RFB-2800	1	Lower indicator hanging hook bolt
22	RFM-5020	1	Adjustable yoke end to attach to RFB-2800 (21)
23	FS-00E500R	1	Digital Scale Indicator (optional) (as shown)
or	FS-00D500	1	Scale Dial Indicator (optional) (not shown)
24	RFB-3065	2	Spade bolts (as shown in Figure 2 and Figure 3)
25	KS-PS0007	4	Gate Drop Rod
26	KS-PSW006	2	Gate, wide scale
or	KS-PSN006	2	Gate, narrow scale

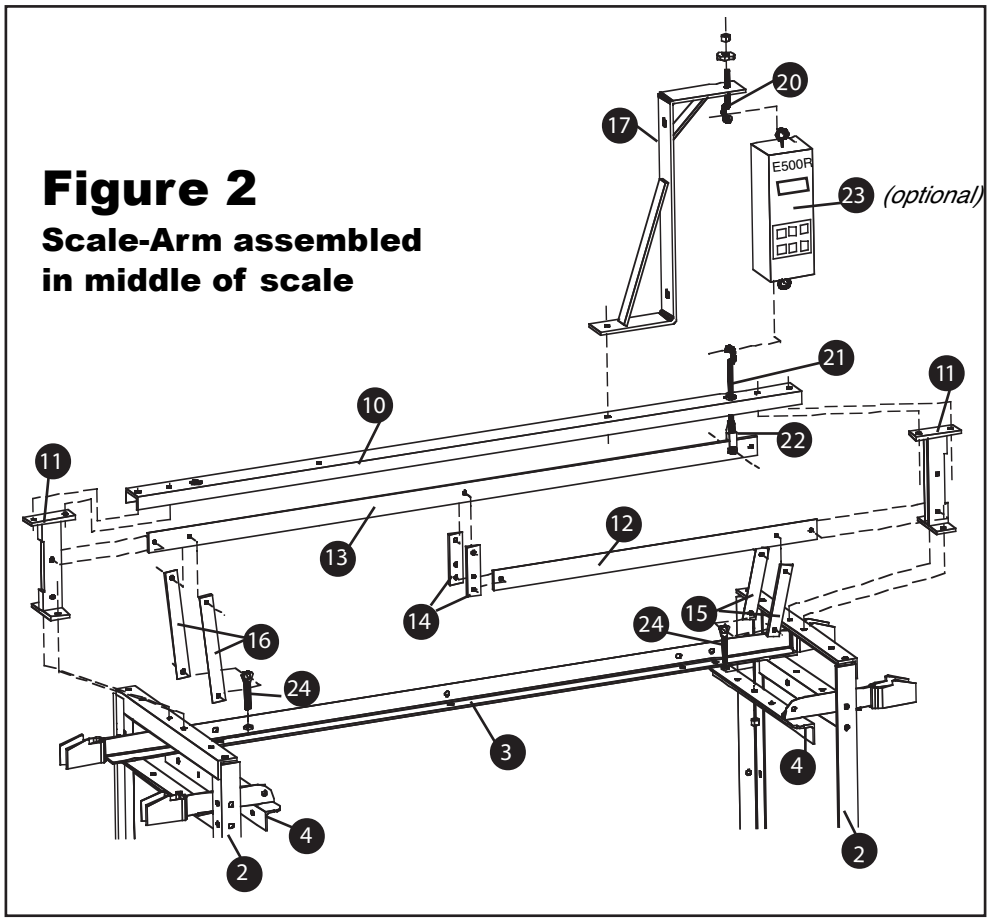


Figure 2
Scale-Arm assembled
in middle of scale
E500R
(optional)
20
17
23
21
11
10
22
11
13
12
14
24
15
16
24
3
4
4
2
2

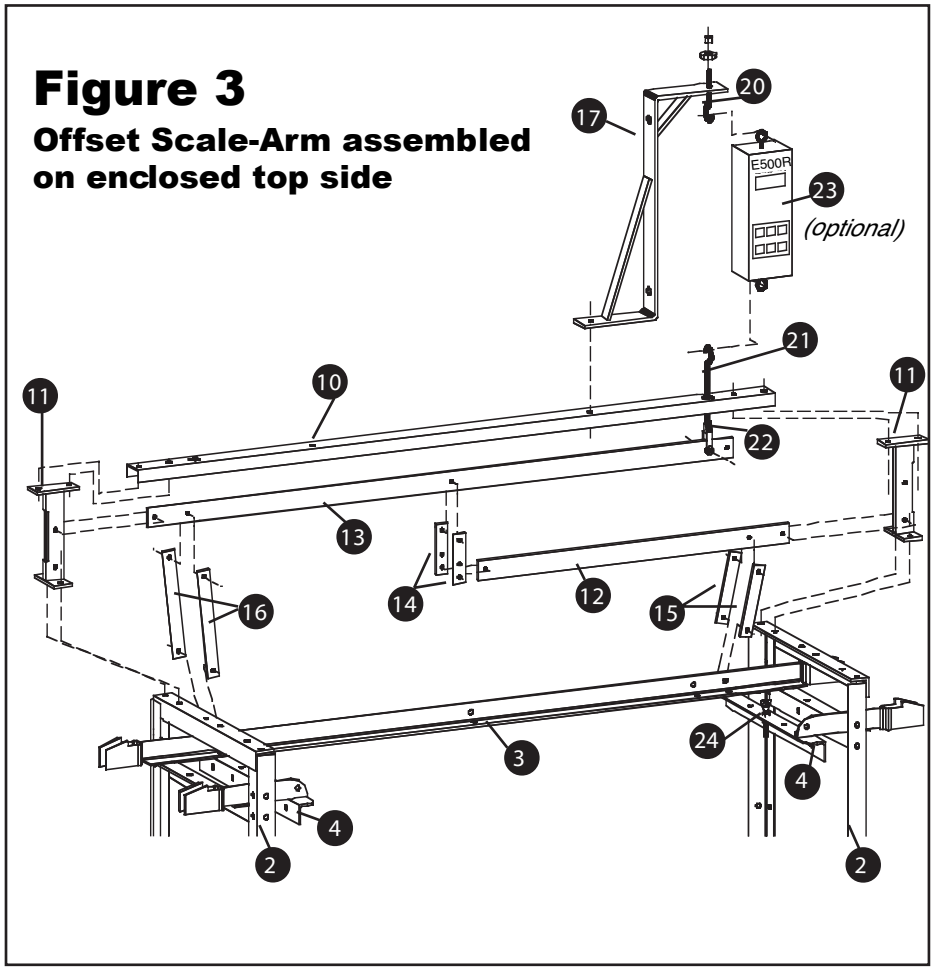


Figure 3
Offset Scale-Arm assembled
on enclosed top side
E500R
(optional)
20
17
23
21
11
10
11
22
13
14
12
16
15
3
24
4
4
2
2

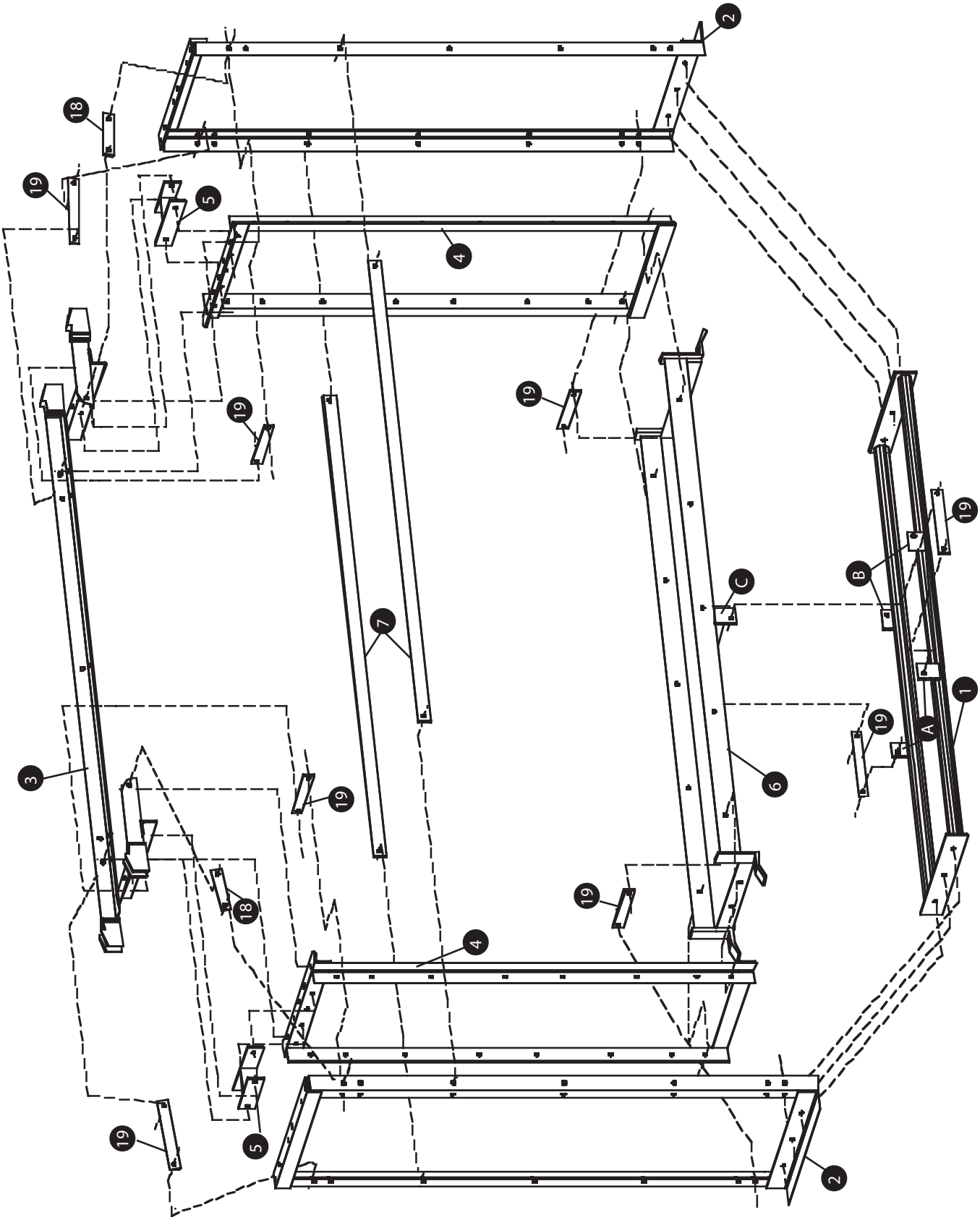


Figure 4

Figure 5

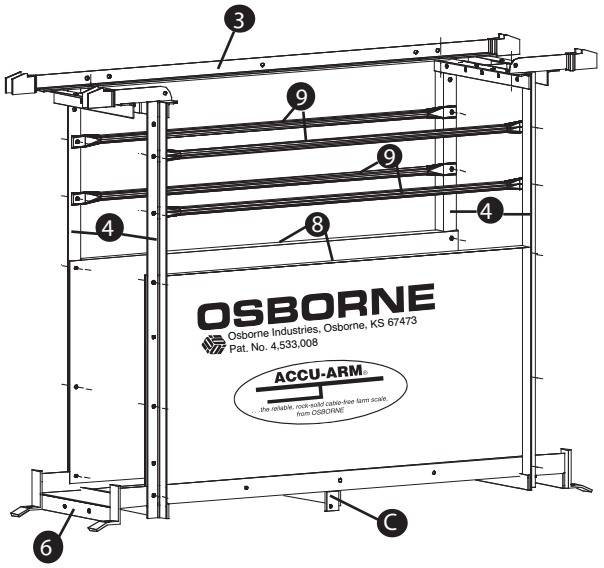
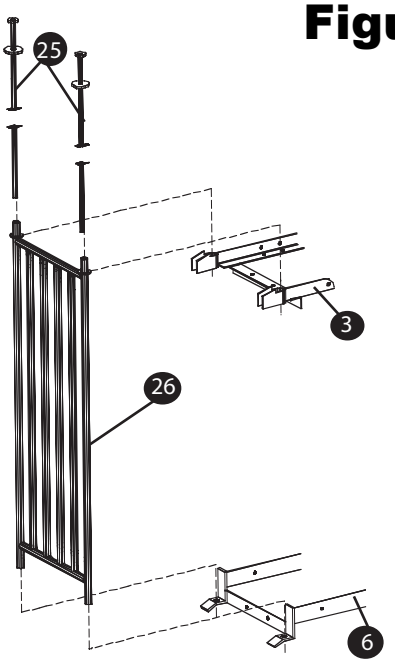


Figure 6



ACCESSORIES:

The ACCU-ARM Portable Scales can be equipped with optional accessories including a Wheel Kit, Remote Gate Kit, Basket Top Closure Kit (necessary for the Remote Gate Kit option), Dial Scale Indicator, Damper Cylinder Kit (necessary for the Dial Scale Indicator option), Digital Scale Indicator, and Open Side Rails. Order separately. Call Osborne Customer Service for information on any of these items or other available options.

ACCU-ARM SCALE SPECIFICATIONS:

	24-in. Wide Scale	18-in. Narrow
Scale		
Capacity	500 lbs.	500 lbs.
Empty wt.	285 lbs.	265 lbs.
Size(WxLxH)	24x59x56-in.	18x59x56-in.
Basket size	20x55x40-in.	14.5x55x40-in.

Floor 14 gauge tread plate for both models
Weighing error for off-level operation: 1% error at 11% grade.

OSBORNE®

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