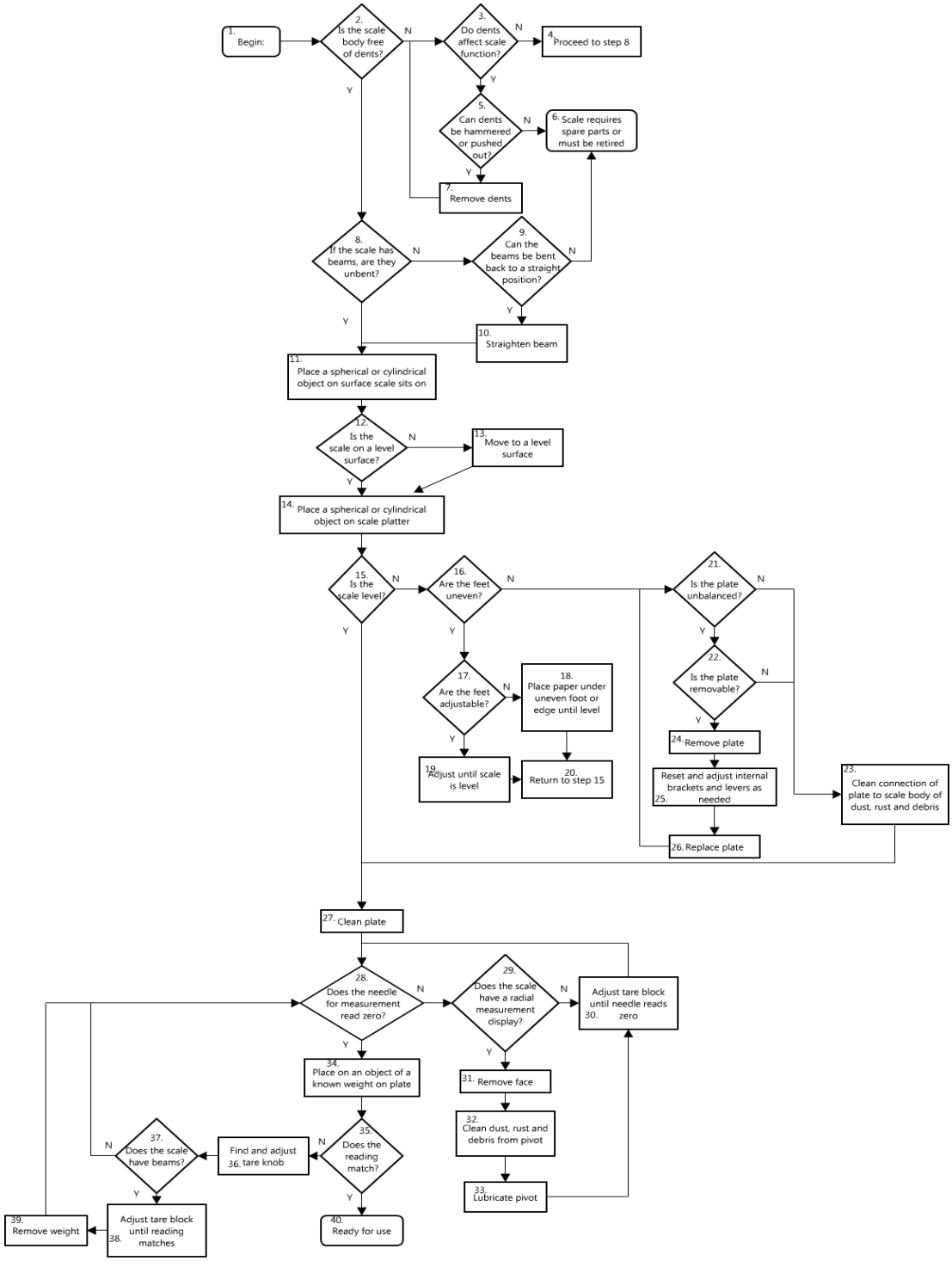
Scales (Analog) Repair and Troubleshooting



Description

#	Text box	Explanation or comment
1	Begin	Begin diagnostic process for a work order on scales (analog). Analog scales contain no electrical components, so nothing needs to be turned "on." Make sure that scale plate is clear of any objects or debris and any weighted elements are set to zero.
2	Is the scale body free of dents?	By looking and feeling the exterior of the scale, assess for major external damage.
3	Do dents affect scale function?	Depress the scale platter gently. Does the external damage appear to hinder the movement of the scale's needle?
4	Proceed to step 8	Proceed to step 8
5	Can dents be hammered or pushed out?	By looking and feeling the exterior of the scale, gently test to see if the dents can be removed easily.
6	Scale requires spare parts or must be retired	The external damage is beyond simple repair and impairs scale function.
7	Remove dents	Gently push or hammer out the dents in the scale body.
8	If the scale has beams, are they unbent?	Visually assess for external damage in beams.
9	Can the beams be bent back to a straight position?	Gently try to push beams back into a straight position.
10	Straighten beam	Gently try to push beams back into a straight position.
11	Place a spherical or cylindrical object on surface scale sits on	Any object that rolls will suffice. Ideal objects would be a marble, small ball, pen, pencil, dowel, etc.
12	Is the scale on a level surface?	If the object rolls of its own accord, the surface the scale sits on is not level.
13	Move to a level surface	Move scale to a surface on which the spherical or cylindrical object does not roll of its own accord.
14	Place a spherical or cylindrical object on scale platter	Repeat test for levelness on scale platter.
15	Is the scale level?	If the object rolls of its own accord, the scale platter is not level and adjustments need to be made.
16	Are the feet uneven?	To see if the problem lies in the interface between the scale and the surface it sits on, press on each of the corners of the

		scale body and verify visually and audibly whether or not the scale wobbles.
17	Are the feet adjustable?	On some models, the feet can be adjusted like knobs to raise or lower a corner of the scale.
18	Place paper under uneven foot or edge until level	If the scale feet cannot be adjusted, the scale can be leveled by placing paper or cardboard under the problem corner until the scale plate is level. Use spherical or cylindrical object to determine levelness.
19	Adjust until scale is level	Twist knobs until scale is level. Use spherical or cylindrical object to determine levelness.
20	Return to step 15	In order to double check the level-ness of the scale, return to step 15.
21	Is the plate unbalanced?	If the problem is not in the feet, the lack of levelness is due to either the plate itself or the connection between the plate and the rest of the scale body.
22	Is the plate removable?	Inspect to see if plate can be removed. May need to slide, twist, remove screws or pins, etc. See BTA skills on Mechanical Attachment.
23	Clean connection of plate to scale body of dust, rust and debris	By gently blowing, wiping and/or scraping all pieces that interface between the plate and the internal mechanism. See BTA skills on Mechanical Cleaning.
24	Remove plate	Remove by the mechanism detected in step 21.
25	Reset and adjust internal brackets and levers as needed	Some of the pieces inside the scale body may have been dislodged or moved, for instance, if the scale has been dropped. There are likely to be grooves or marks where they should align, both inside the scale body and on the underside of the scale plate.
26	Replace plate	Replace plate.
27	Clean plate	Using a wet cloth, wipe down plate. See BTA skills on Mechanical Cleaning.
28	Does the needle for measurement read zero?	Visually determine if the needle for measurement is aligned with the zero tic-mark.
29	Does the scale have a radial measurement display?	Most analog scales display measurement in one of two ways – with a radial dial or a system of beams with a sliding weight.
30	Adjust tare block until needle reads zero	Tare block looks like a small, metal bracket with an adjustable knob on the back that holds the bracket in place. Slowly slide

		the bracket along the beam until the needle reads zero.
31	Remove face	Remove face, may need to twist.
32	Clean dust, rust and debris from pivot	By gently blowing, wiping and/or scraping in pivot. See BTA skills on Mechanical Cleaning.
33	Lubricate pivot	Using WD40, Vaseline, or an acceptable substitute. See BTA skills on Lubrication.
34	Place on an object of a known weight on plate	Suggested items would be any pre-packaged object with a pre-scribed weight, though this rests on the assumption that the written, packaged weight is accurate. An acceptable alternative would be to use a known volume of water, remembering that the density of water is 1 g/cm^3 or 8.34 lb/gal.
35	Does the reading match?	The display should read the value of the known weight of the object.
36	Find and adjust tare knob	Most models, whether radial or beam, have a tare knob located on the back or base of the scale body. This can be turned to manually move display needle.
37	Does the scale have beams?	Most analog scales display measurement in one of two ways – with a radial dial or a system of beams with a sliding weight.
38	Adjust tare block until reading matches	Tare block looks like a small, metal bracket with an adjustable knob on the back that holds the bracket in place. Slowly slide the bracket along the beam until the needle reads the desired value.
39	Remove weight	Remove weight.
40	Ready for use	Scale is ready for use.