Conformation and Structural Soundness Guidelines for Replacement Gilts

The skeletal structures in Figures 1 and 2 were drawn, in part, from radiological examinations of live pigs. Emphasis is placed on the angles formed at the front legs (M) and rear legs (N).

Desirable front and rear structure is illustrated in Figure 1, while undesirable bone conformation is illustrated in Figure 2.

Figure 1 shows a flatter top, more level rump and higher tail setting. As you view the animal from the side, note how the front leg slopes from the shoulder (M). This angle allows for the normal shock-absorbing effect at the point of the shoulder (B). The spine of the animal in Figure 2 is arched very high. The angle (M) is greater than 90 degrees, which positions the shoulder blade bone more directly over the bones of the front legs. Additional pressure may be applied at the point of the shoulder (B) and at the knee joint (C) to compensate for this straightness. As a result, the knee joints often buckle. The abnormally straight front leg posture in Figure 2 often results in abrasion of the foot pads and toes.

The angle displayed in the rear legs (N) is smaller in Figure 1 than the angle in Figure 2. The rear leg joints in Figure 1 are properly angled to allow the hip (E), the stifle (F) and the hock joints (G) to absorb weight and pressure more equally. The pasterns (D) are sloping and long to provide a cushioning effect for the gilt in Figure 1, and the toes rest squarely on the floor surface.

The rear leg structure in Figure 2 shows a ramp that is too steep and the tail setting too low. The hip (E), the stifle (F) and the hock joints (G) in Figure 2 lock in a straight-line position with each step the animal takes. The pasterns (D) are short and straight, which gives the appearance that the gilt is standing on her tiptoes. Often, these animals have shorter toes with a higher tendency toward injury (cracks, tears, bruises) and uneven wear. The rear feet of these straight-legged animals may exhibit excessive sole wear with subsequent injury or swelling of the pads of the feet and, consequently, lameness.

The illustrations and photos provide additional examples of foot and leg deficiencies. Illustrations adapted, with permission, from Pork Industry Handbook.

From the rear, this gilt displays very good leg set, good width between her legs and shape of the ham muscles.

This side view shows normal (good) front and rear foot and leg structure, levelness of top and good depth in the rib and flank areas.

This angle shows good width, depth and spring of rib, good width between the back legs, depth and squareness throughout the body cavity.

This is a side view of normal (good) rear leg structure. Note the angle of the hip, stifle and hock joints.

The tendency of the front toes to point outward is commonly called "splay-footed."

She is high topped, steep rumped and shallow in the rib and flank. Narrow set to the rear legs is often an indication of narrowness throughout the body cavity.

Figure 1. Desirable front and rear leg structure. Figure 2. Undesirable front and rear leg structure. This gilt's front and rear legs are very straight and undesirable. This gilt displays excellent front and rear feet and leg structure, proper angle of the shoulder, good length and cleanness of the neck and jaw. This gilt represents a good example of proper angle of the shoulder, good length and cleanness of the neck and jaw. This is an example of soft (weak) front pasterns. Note the full dew claw touching the floor.

This gilt shows an improper structure of the shoulder and spine, often referred to as "broken-topped" or "broken-shouldered."

Desirable front and rear structure is illustrated in Figure 1, while undesirable bone conformation is illustrated in Figure 2.

This gilt shows a narrow rib and chest floor, which is an indication of narrowness throughout the body.

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Side view of rear leg

Normal Sickled Post-legged Weak pastern

Side view of front leg

Normal Weak pastern Buck-kneed Splay-footed (toes pointed out) Pigeon-toed (toes pointed in)