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2
3 UNITED STATES DISTRICT COURT
4 NORTHERN DISTRICT OF CALIFORNIA
5

6
7 AMERICAN PILEDRIVING
8 EQUIPMENT, INC.,

No. C 08-1934 PJH

9 Plaintiff,

**ORDER CONSTRUING
CLAIMS**

10 v.

11 BAY MACHINERY CORPORATION,

12 Defendant.
13 _____/

14 On May 6, 2009, the parties' claim construction hearing to construe the disputed
15 terms of U.S. Patent No. 5,355,964 ("the '964 Patent") pursuant to Markman v. Westview
16 Instruments, Inc., 517 U.S. 370 (1996), came on before this court. Plaintiff American
17 Piledriving Equipment, Inc. ("APE") appeared through its counsel Craig Madson and
18 defendant Bay Machinery Corporation ("Bay") appeared through its counsel Peter Knops
19 and Kenneth Kula. Having read the parties' papers and carefully considered their
20 arguments and the relevant legal authority, the court hereby rules as follows.

21 **BACKGROUND**

22 The '964 Patent covers a vibratory assembly used in vibratory pile driving and pile
23 pulling equipment for imparting a vibratory force to a pile utilizing counterweights. APE has
24 sued Bay for infringement of the '964 Patent. See First Amended Complaint ("FAC").

25 A. Background Technology

26 Pile driving equipment is used to drive large piles into the earth to form a stable
27 support for buildings or other structures. Similarly, pile driving equipment is used to remove
28 large piles from the earth. Pile driving equipment with a vibratory apparatus, as opposed to

1 pile driving equipment that use hammer devices to drive the pile, impart vibration force to
2 the pile. Vibratory devices have several advantages over hammer devices, including an
3 increased driving speed.

4 Vibratory devices can generate extremely high driving and pulling forces by rapidly
5 rotating large counterweights within the vibratory assembly. The counterweights are large
6 cylindrical, eccentrically weighted gears, i.e., they have uneven weight distribution around
7 the body of the gear such that its center of gravity is radially outward of the gear's rotational
8 axis. When the vibratory apparatus rotates two counterweights in opposite directions, the
9 counterweights generate substantial vibratory forces that are transmitted through the
10 vibratory assembly, through a pile holding device, and to the pile. The rapid rotation
11 generates substantial vibratory forces, creating large stress loads within the counterweights
12 as well as high temperatures in and around the counterweights due to the friction of the
13 moving parts.

14 The prior art includes a vibratory assembly with counterweights having solid
15 eccentric weight bolted to a portion of the cylindrical gear. These bolted counterweights,
16 however, are not sufficiently durable because the bolts have a tendency to break under the
17 stress generated during the rapid rotation of the counterweights. Another prior art vibratory
18 assembly avoids the bolt breaking problem by using a cast one-piece, solid counterweight
19 having an eccentric weight portion integral with a cylindrical gear portion. These solid, cast
20 counterweights, however, do not have sufficient mass to generate large enough vibratory
21 forces to efficiently drive or pull piles.

22 Attempts have been made to use lead to increase the mass of cast counterweights
23 by machining holes into the eccentric weight portion and filling these holes with lead.
24 These lead-filled counterweights, however, generate a limited degree of vibration
25 amplitude. In addition, the friction generated during the rapid rotation of the counterweights
26 causes the lead to liquify and shift during operation, creating an unbalanced weight
27 distribution in the counterweights, causing lateral forces which can damage the vibratory
28 assembly. The unbalanced weight distribution is also caused by the inability to fill the holes

1 with precise amounts of lead. Another problem experienced with lead-filled counterweights
2 is that the lead inserts can be chipped or shaved off during operation, or otherwise contact
3 the oil used for lubricating the moving components. The loose lead contaminates the oil
4 and creates an environmentally hazardous waste, requiring expensive disposal procedures.

5 B. The '964 Patent

6 On October 18, 1994, the '964 Patent was issued to John White ("patentee"),
7 president of APE. The invention relates to pile driving and pile pulling equipment, and more
8 particularly to vibratory pile driving and pile pulling equipment using counterweights. The
9 '964 Patent covers a vibratory assembly used in vibratory pile driving equipment for
10 imparting a vibratory force to a pile wherein the vibratory assembly has a housing and a
11 pair of counterweights that rotate within the housing.

12 The housing has at least one counterweight receiving area adapted to rotatably
13 receive at least one counterweight. The counterweight is made of a first metal, such as
14 steel, and has a cylindrical gear portion with an integral eccentric weight portion. The
15 eccentric weight portion has at least one insert-receiving area formed therein for receiving a
16 second metal, a solid insert made of tungsten ("tungsten rod"), which fits securely within the
17 insert-receiving area. The tungsten rod is heavier than the first metal, and has a melting
18 point of 328° C or greater, such that the tungsten will not become fluid and shift during the
19 operation of the vibratory assembly. At least one driving motor is operatively connected to
20 the counterweight and is adapted to rapidly rotate the counterweight to generate substantial
21 vibratory forces.

22 The '964 Patent contains twenty-seven claims. APE maintains that Bay has directly
23 infringed and continues to infringe claims 1-3, 5-14 and 16-18 by using, offering to sell or
24 rent, selling and/or renting certain vibratory pile driving devices in the United States. The
25 parties now seek construction of the following five disputed terms and/or phrases: (1) the
26 "cylindrical gear portion"; (2) the "eccentric weight portion"; (3) "integral"; (4) the
27 "insert-receiving area"; and (5) "connected to."

28 ///

DISCUSSION

A. Legal Standard

Claim construction is a question of law to be decided by the court. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995). In construing claim terms, the court must begin with an examination of the claim language itself. The terms used in the claims are generally given their “ordinary and customary meaning.” See Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005); see also Renishaw PLC v. Marposs Societa’ per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (“The claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim.”). This ordinary and customary meaning “is the meaning that the terms would have to a person of ordinary skill in the art in question at the time of the invention . . .” Phillips, 415 F.3d at 1313. A patentee is presumed to have intended the ordinary meaning of a claim term in the absence of an express intent to the contrary. York Products, Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996) (“Without an express intent to impart a novel meaning to claim terms, an inventor’s claim terms take on their ordinary meaning.”). In some cases, the ordinary meaning of a claim by one of ordinary skill in the art may be readily apparent even to lay judges. Id. at 1314. In such a case, claim construction involves nothing more than the application of the widely accepted meaning of the commonly understood words through the use of a general purpose dictionary used in conjunction with the intrinsic evidence. Id.

Generally speaking, the words in a claim are to be interpreted “in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history, if in evidence.” Teleflex, Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 1324-25 (Fed. Cir. 2002) (citations omitted); see also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (court looks at “the ordinary meaning in the context of the written description and the prosecution history”). “Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language,” that is, the claims, the specification and the prosecution history. Vitronics Corp. v. Conceptronic, Inc.,

1 90 F.3d 1576, 1582 (Fed. Cir. 1996). This is because “the person of ordinary skill in the art
2 is deemed to read the claim term not only in the context of the particular claim in which the
3 disputed term appears, but in the context of the entire patent, including the specification.”
4 Phillips, 415 F.3d at 1312.

5 With regard to the intrinsic evidence, the court’s examination begins, first, with the
6 claim language. See Vitronics, 90 F.3d at 1582. Specifically, “the context in which a term
7 is used in the asserted claim can be highly instructive.” Phillips, 415 F.3d at 1314. As part
8 of that context, the court may also consider the other patent claims, both asserted and
9 unasserted. Id. For example, as claim terms are normally used consistently throughout a
10 patent, the usage of a term in one claim may illuminate the meaning of the same term in
11 other claims. Id. The court may also consider differences between claims to guide in
12 understanding the meaning of particular claim terms. Id. For example, the presence of a
13 dependent claim that adds a particular limitation gives rise to a presumption that the
14 limitation in question is not present in the independent claim. Id. at 1314-15.

15 Second, the claims “must [also] be read in view of the specification, of which they
16 are a part.” Phillips, 415 F.3d at 1315. “[T]he specification ‘is always highly relevant to the
17 claim construction analysis. Usually, it is dispositive; it is the single best guide to the
18 meaning of a disputed term.’ ” Id. at 1315, 1321 (the specification is “the single best guide
19 to the meaning of a disputed term, and acts as a dictionary when it expressly defines terms
20 used in the claims or when it defines terms by implication); see also Kinetic Concepts, Inc.
21 v. Blue Sky Medical Group, Inc., 554 F.3d 1010, 1018-19 (Fed. Cir. 2009). “In light of the
22 statutory directive that the inventor provide a ‘full’ and ‘exact’ description of the claimed
23 invention, the specification necessarily informs the proper construction of the claims.”
24 Phillips, 415 F.3d at 1316 (citing Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367,
25 1371 (Fed. Cir. 2003) (“A fundamental rule of claim construction is that terms in a patent
26 document are construed with the meaning with which they are presented in the patent
27 document. Thus claims must be construed so as to be consistent with the specification, of
28 which they are a part.”) (citations omitted)). When the specification reveals a special

1 definition given to a claim term by the patentee that differs from the meaning it would
2 otherwise possess, the inventor's lexicography governs. Phillips, 415 F.3d at 1316. "The
3 specification may [also] reveal an intentional disclaimer, or disavowal, of claim scope by the
4 inventor. In that instance as well, the inventor has dictated the correct claim scope, and the
5 inventor's intention, as expressed in the specification, is regarded as dispositive." Id.

6 The pertinence of the specification to claim construction is reinforced by the manner
7 in which a patent is issued. Phillips, 415 F.3d at 1316. "The Patent and Trademark Office
8 ("PTO") determines the scope of claims in patent applications not solely on the basis of the
9 claim language, but upon giving claims their broadest reasonable construction 'in light of
10 the specification as it would be interpreted by one of ordinary skill in the art.' " Id. Indeed,
11 because "the rules of the PTO require that application claims must 'conform to the invention
12 as set forth in the remainder of the specification and the terms and phrases used in the
13 claims must find clear support or antecedent basis in the description so that the meaning of
14 the terms in the claims may be ascertainable by reference to the description," it is "entirely
15 appropriate for a court, when conducting claim construction, to rely heavily on the written
16 description for guidance as to the meaning of the claims." Phillips, 415 F.3d at 1316-17.

17 Finally, as part of the intrinsic evidence analysis, the court "should also consider the
18 patent's prosecution history, if it is in evidence." Phillips, 415 F.3d at 1317. The
19 prosecution history is intrinsic evidence and consists of the complete record of the
20 proceedings before the PTO and includes the prior art cited during the examination of the
21 patent. Id. "[T]he prosecution history can often inform the meaning of the claim language
22 by demonstrating how the inventor understood the invention and whether the inventor
23 limited the invention in the course of prosecution, making the claim scope narrower than it
24 would otherwise be." Id.; see also Alpex Computer Corp. v. Nintendo Co. Ltd., 102 F.3d
25 1214, 1220 (Fed. Cir. 1996) (prosecution history, along with the claim language and
26 specification, is relevant for construing the meaning and scope of the claims); Microsoft
27 Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1349 (2004) (statements made by the
28 patentee in the prosecution of the patent application as to the scope of the invention may

1 be considered when deciding the meaning of the claims). The court should take into
2 account, however, that the prosecution history “often lacks the clarity of the specification”
3 and thus is of limited use for claim construction purposes. Phillips, 415 F.3d at 1317.

4 In most cases, claims can be resolved based on intrinsic evidence. See Vitronics,
5 90 F.3d at 1583. Only if an analysis of the intrinsic evidence fails to resolve any ambiguity
6 in the claim language may the court then rely on extrinsic evidence, such as expert and
7 inventor testimony, dictionaries, and learned treatises. See id.; see also Phillips, 415 F.3d
8 at 1321-22 (Courts are free to consult dictionaries so long as they are careful not to elevate
9 them “to such prominence that it focuses the inquiry on the abstract meaning of the words
10 rather than on the meaning of the claim terms within the context of the patent.”). As the
11 court explained in Markman, “[extrinsic] evidence may be helpful to explain scientific
12 principles, the meaning of technical terms, and terms of art that appear in the patent and
13 prosecution history.” Id. at 980. However, the court generally views extrinsic evidence as
14 less reliable than the patent and its prosecution history in determining how to read claim
15 terms, even if its consideration is within the court’s sound discretion. See Phillips, 415 F.3d
16 at 1318-19.

17 B. Construction of Disputed Terms and Phrases

18 As previously noted, the parties seek construction of five disputed terms and/or
19 phrases: (1) the “cylindrical gear portion”; (2) the “eccentric weight portion”; (3) “integral”;
20 (4) the “insert-receiving area”; and (5) “connected to.” The court addresses each of these
21 terms and/or phrases in turn below.

22 1. “cylindrical gear portion”

23 This phrase appears in asserted claims 1, 6, 11 and 16. The phrase also appears in
24 unasserted claims 19, 21 and 27. At the hearing, the parties stipulated to the following
25 construction of the phrase “cylindrical gear portion”: **“the ‘gear portion’ of the**
26 **counterweight is a substantially cylindrical portion and has a rear face, a front face,**
27 **and a plurality of gear teeth around its perimeter.”** Because the court finds that the
28 parties’ proposed construction is supported by the claim language and the specification, the

1 court hereby adopts it.

2 2. “eccentric weight portion”

3 This phrase appears in asserted claims 1, 3, 6, 11 and 16. The phrase also appears
4 in unasserted claims 19, 21, 26 and 27. APE contends that “eccentric weight portion”
5 should be construed to mean “that portion of the counterweight that contributes to the
6 eccentric moment of the counterweight. The portion is part of the whole counterweight, but
7 need not be a separate component piece or part.” Bay contends that “eccentric weight
8 portion” should be construed to mean “the portion of the counterweight that extends
9 forward from the front face of the gear portion as defined in the specification.”

10 To begin its analysis, the court first turns to the claims themselves. The phrase
11 “eccentric weight portion” is first introduced in claim 1, which provides: “A vibratory
12 assembly for imparting a vibratory force to a pile, comprising: . . . a counterweight . . .
13 having a cylindrical gear portion and an eccentric weight portion integral with said
14 cylindrical gear portion, said eccentric weight portion having at least one insert-receiving
15 area formed therein, said counterweight made of a first metal; a solid insert member
16 securely positioned in one of said at least one insert-receiving areas said solid insert
17 member being made of a second metal . . .” Claim 2 provides that the first metal is steel
18 and the second metal is tungsten. Claim 3 provides that the insert-receiving area is a bore
19 in the eccentric weight portion and the solid insert is a tungsten rod. As to the other claims
20 in which the phrase appears, e.g., claims 6-9, 11-13 and 16-19, the relevant language is
21 substantially similar to the language in claims 1-3 insofar as those claims indicate that the
22 counterweight is comprised of an “eccentric weight portion” and a “cylindrical gear portion”;
23 the “eccentric weight portion” has at least one “insert-receiving area”; at least one solid
24 insert is inserted into an “insert-receiving area”; the counterweight is made of steel; and the
25 solid insert is a tungsten rod.¹

26
27
28 ¹ The court notes that the phrase “eccentric weight portion” also appears in claims 21,
26 and 27. These claims concern the method of making a counterweight assembly of a
vibratory device. In general, these claims indicate that the “eccentric weight portion” is a
portion of the counterweight having at least one “insert-receiving area” and that at least one
solid insert is inserted in an “insert-receiving area.”

1 Based on the court's review of the claim language, two things are evident. First, the
2 term "eccentric weight portion" is meant to have the same meaning in each claim, since
3 there is no indication that the phrase is to be given a specific definition in any one claim
4 versus another, and no indication that the phrase has been particularly defined, or referred
5 to in a materially different way, in any specific claim. Second, the claim language does not
6 define the phrase, but rather describes that the "eccentric weight portion" is a portion of the
7 counterweight with at least one insert-receiving area therein adapted for receiving at least
8 one solid tungsten rod. Accordingly, the court must turn to the specification for added
9 insight.

10 The specification explains that the "vibratory assembly of the present invention . . .
11 generates substantially vertical vibratory forces by rotating at high speeds two
12 counterweights **40**. . . Each counterweight **40** has a gear portion **41** and an eccentric
13 weight portion **43** that is integral to the gear portion. The eccentric weight portion **43** has
14 dense, solid, metal inserts **45**² mounted therein to increase the mass of the eccentric
15 weight portion, and to position the center of gravity of the counterweight **40** radially outward
16 from its rotational axis." '964 Patent, col. 3, lines 39-51 (footnote added). The specification
17 further provides:

18 As best seen in FIGS. 3A and 3B, the gear portion **41** of the counterweight
19 **40** is substantially cylindrical and has a rear face **94**, a front face **96**,
20 and a plurality of gear teeth **98** around its perimeter. The eccentric weight
21 portion **43** of the counterweight **40**, which is formed integral with the gear
22 portion **41**, extends forward from the front face **96** of the gear portion.
23 The gear portion **41** has a weight distribution with less weight provided by
24 a top portion **102** and more weight provided by a bottom portion **104** as a
25 result of the eccentric weight portion **43** being connected thereto. In the
26 preferred embodiment, the eccentric weight portion **43** has a substantially
27 semi-cylindrical portion **100**, and the bottom portion **104** constitutes over
28 one-half of the area of gear portion. Accordingly, the counterweight **40** has
a large mass of material integral to and projecting from the bottom portion
104 of the gear portion **41**, thereby forming a counterweight having a center
of gravity located radially outward from the rotational axis of the gear
portion.

26 '964 Patent, col. 5, lines 17-36.

28 ² "The preferred solid insert **45** is a tungsten rod . . ." '964 Patent, col. 6, line 5. "A
tungsten rod is used as the preferred solid insert **45** because the metal is very dense and has
a melting point temperature far greater than temperatures experienced by the counterweight
40 during operation of the vibratory assembly **34**." '964 Patent, col. 6, lines 11-15.

1 As the specification describes, and figures 3A and 3B illustrate, the counterweight
2 has a top portion and a bottom portion. The bottom portion extends forward from the front
3 face of the gear portion and contains more weight than the top portion as a result of the
4 “eccentric weight portion,” which has at least one dense, solid, metal insert, i.e., tungsten
5 rod, mounted therein to increase the mass of the “eccentric weight portion.” The
6 specification teaches that the function of the “eccentric weight portion” is to create an
7 uneven weight distribution around the body of the gear such that the center of gravity is
8 located radially outward from the rotational axis of the gear portion, thereby allowing the
9 counterweight to generate substantial vibratory forces upon rotation.

10 After reviewing the claim language and the specification, the court declines to adopt
11 either party’s proposed construction of the phrase “eccentric weight portion.” Instead, the
12 court construes the phrase “eccentric weight portion” to mean: **“the bottom portion of the
13 counterweight, which extends forward from the front face of the gear portion,
14 containing more weight than the top portion due to its larger mass, including at least
15 one insert-receiving area formed therein to receive at least one solid tungsten rod.”**

16 3. “integral”

17 This term appears in asserted claims 1, 6 and 11. The term also appears in
18 unasserted claims 19, 21 and 27. APE contends that the term should be construed to
19 mean “composed of portions, parts, or pieces that together constitute the whole. The
20 portions act together to function as the counterweight.” Bay contends that the term should
21 be construed to mean “formed or cast of one-piece.”

22 To begin its analysis, the court first turns to the claims themselves. The term
23 “integral” is first introduced in claim 1, which provides: “A vibratory assembly for imparting a
24 vibratory force to a pile, comprising: . . . a counterweight having a cylindrical gear portion
25 and an eccentric weight portion integral with said cylindrical gear portion . . .” Substantially
26 similar language appears in claims 6, 11, 19, 21 and 27.

27 Reviewing all the claims in which the term “integral” is used, it is apparent that the
28 term is meant to have the same meaning in each claim, since there is no indication that the

1 term is to be given a specific definition in any one claim versus another, and no indication
2 that the term has been particularly defined in any specific claim. The court, however, finds
3 that the usage of the term in claims 21, 23 and 27 provides illumination as to the meaning
4 of the term when read together with claims 16 and 19.

5 Claim 21 provides: "A method of making a counterweight assembly of a vibratory
6 device for imparting a vibratory force to a pile, comprising the steps of: forming with a first
7 metal a counterweight having a cylindrical gear portion and an eccentric weight portion
8 integral with the cylindrical gear portion . . ." Claim 23 provides: "The method of claim 21
9 wherein said step of forming the counterweight comprises casting the counterweight."

10 Claim 27 provides: "A method of making a counterweight assembly of a vibratory device for
11 imparting a vibratory force to a pile, comprising the steps of: casting with a first metal a
12 counterweight having a cylindrical gear portion and an eccentric weight portion integral with
13 the cylindrical gear portion . . ."

14 The court construes the language in unasserted claims 21, 23 and 27 as supporting
15 Bay's proposed construction insofar as these claims indicate that the counterweight is
16 made by forming or casting the "cylindrical gear portion" and "eccentric weight portion" with
17 one metal, i.e., the "cylindrical gear portion" and "eccentric weight portion" are "formed or
18 cast as one-piece." This conclusion is also supported by the language of claims 16 and 19.

19 However, claim 16 provides: "A counterweight assembly for use in a vibratory pile . .
20 . comprising: a cylindrical gear portion having a plurality of gear teeth around its
21 circumference, . . . an eccentric weight portion connected to said cylindrical gear portion at
22 a position radially outward of the axis of said cylindrical gear portion . . ." Claim 19, which
23 depends from claim 16, provides: "The counterweight assembly of claim 16 wherein said
24 eccentric weight portion is integral with said cylindrical gear portion, said first metal is cast
25 steel, and said second metal is a tungsten."

26 This language suggests that the term "integral" is not interchangeable with the
27 phrase "connected to" inasmuch as claim 19 would be superfluous if "integral" and
28 "connected to" meant the same thing. The doctrine of claim differentiation supports this

1 construction. That doctrine creates a presumption against constructions that would render
2 a claim meaningless in its entirety by making it identical in scope to another claim.
3 Sinorgchem Co., Shandong v. Int'l Trade Comm'n, 511 F.3d 1132, 1139 (Fed. Cir. 2007).
4 In other words, claim differentiation creates a presumption that each claim in a patent has a
5 different scope. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000).
6 Thus, the presence of the limitation "integral" in claim 19 gives rise to the presumption that
7 this limitation is not present in claim 16, which supports the determination that the meaning
8 of "integral" is not the same as "connected to." As discussed more fully below, because the
9 court construes the term "connected to" to mean "joined together, united or linked"
10 conveying the joining, uniting or linking together of two separate pieces or parts, the court
11 construes the claim language to support the conclusion that the term "integral" means
12 "formed or cast as one-piece." Nevertheless, because the claim language does not
13 specifically define the term "integral," the court examines the specification for added insight.

14 The specification states that "[t]he present invention . . . provides a method of
15 making a counterweight assembly adapted to rotatably fit in a vibratory assembly. The
16 counterweight assembly having a cylindrical gear portion and an integral eccentric weight
17 portion is cast with a first metal such as steel." '964 Patent, col. 2, lines 52-57. The
18 specification further states that "[t]he eccentric weight portion **43** of the counterweight **40** . .
19 . is formed integral with the gear portion **41**." '964 Patent, col. 5, lines 20-22. In addition,
20 the specification states: "In the preferred embodiment, the counterweight **40** is a one-piece
21 component that is cast with a predetermined metal, such as steel. . . . The bottom portion
22 **104** of the counterweight **40** is cast having insert receiving areas or bores **112** substantially
23 parallel to the center bore **106** and extending fully through the gear portion." '964 Patent,
24 col. 5, lines 50-53, 61-65. Finally, in discussing the prior art, the specification refers to "a
25 cast, one-piece, solid counterweight" as "having an eccentric weight portion integral with a
26 cylindrical gear portion." '964 Patent, col. 1, lines 45-48. Based on the foregoing, the court
27 finds that the specification also supports the conclusion that the term "integral" means
28 "formed or cast as one-piece."

1 Moreover, as Bay points out, the prosecution history also supports this conclusion.
2 During reexamination of the '964 Patent, the patentee represented to the PTO that claims
3 1, 6 and 11 "recite that the counterweight has 'a cylindrical gear portion and an eccentric
4 weight portion' and that these two components are 'integral' - i.e., they are simply
5 components of a 'one-piece' counterweight." Bay's Claim Construction Brief, Exh., C at 6.
6 Specifically, the patentee distinguished the claims of the '964 Patent from U.S. Patent No.
7 3,224,514 issued to Hornstein, with the statement that Hornstein did not disclose the
8 "requirement of the integral - i.e., one-piece - nature of the eccentric weight portion. Id.
9 The patentee further stated that "there is no 'integral' or 'one-piece' relationship when
10 Hornstein provides eccentric force" because "Hornstein teaches a system in which weights
11 may be added or removed in order to unbalance the rotating rotor." According to the
12 patentee, because a second metal [which may be made of a different material] must be
13 inserted into the rotor to render Hornstein's device capable of providing eccentric forces,
14 his "eccentric is not integrally formed." Id. With these statements, the patentee expressly
15 acknowledged, in order to distinguish his invention from prior art, that the "cylindrical gear
16 portion" and an "eccentric weight portion" are components of a one-piece counterweight.

17 In sum, for all the reasons stated above, the court concludes that Bay's proposed
18 construction of the term "integral" is most consistent with both the '964 Patent's language
19 and the prosecution history. The court therefore construes the term "integral" to mean:
20 **"formed or cast of one-piece."**

21 4. "insert-receiving area"

22 This phrase appears in asserted claims 1, 6, 11. The phrase also appears in
23 unasserted claims 21, 22, 24 and 27. APE contends that the phrase should be construed
24 to mean "a region of the eccentric weight portion that is capable of receiving an insert, as
25 opposed to receiving material being poured into the region." Bay contends that the phrase
26 should be construed to mean "an area shaped to receive the solid insert and extending fully
27 through either the gear portion or the eccentric weight portion. Both the gear portion
28 and the eccentric weight portion have an insert receiving area. This limitation defines insert

1 receiving area as the insert receiving area of the eccentric weight portion as opposed the
2 insert-receiving area of the gear portion.”

3 The court begins its analysis by first turning to the claims themselves. The phrase
4 “insert-receiving area” is first introduced in claim 1, which states: “A vibratory assembly for
5 imparting a vibratory force to a pile, comprising: . . . counterweight having a cylindrical gear
6 portion and an eccentric weight portion integral with said cylindrical gear portion, said
7 eccentric weight portion having at least one insert-receiving area formed therein, said
8 counterweight being made of a first metal; a solid insert member securely positioned in one
9 of said at least one insert-receiving areas said solid insert member being made of a second
10 metal . . .” Claim 2 provides that the first metal is steel and the second metal is tungsten.
11 The phrase “insert-receiving area” also appears in claims 6, 11, 16, 21, 22, 24 and 27.

12 Reviewing all the claims in which the phrase “insert-receiving area” appears, the
13 court finds that, while the precise language of each claim differs, the language of claim 1 is
14 representative of the other claims, and that the phrase is meant to have the same meaning
15 in each claim, since there is no indication that the phrase is to be given a specific definition
16 in any one claim versus another, and no indication that the phrase has been particularly
17 defined, or referred to in a materially different way, in any specific claim. Accordingly,
18 because none of the claims specifically define the phrase, the court turns to the
19 specification for added insight.

20 The specification states that:

21 The bottom portion **104** of the counterweight **40** is cast having insert
22 receiving areas or bores **112** substantially parallel to the center bore **106**
23 and extending fully through the gear portion. In the preferred embodiment,
24 two insert receiving bores **112** are formed in the counterweight **40**, although
25 the number of bores can be varied. The insert receiving bores are shaped
26 **112** to receive the solid insert **45**, wherein the solid insert is manufactured
27 from a metal that has a density or specific gravity that is greater than the
28 density or specific gravity of the metal used to form the remainder of the
counterweight **40**. The preferred solid insert **45** is a tungsten rod . . .

‘964 Patent, col. 5, lines 61-68, col. 6, lines 1-5.

The essence of the dispute is whether the insert-receiving area extends through
both the gear portion and eccentric weight portion of the counterweight. After reviewing the

1 claim language and the specification, the court declines to adopt either party's proposed
2 construction of the phrase "insert-receiving area." Instead, the court construes the phrase
3 "insert-receiving area" to mean: **"a bore formed in the eccentric weight portion of the**
4 **counterweight, which extends fully through the gear portion and fully through the**
5 **eccentric weight portion of the counterweight, capable of receiving a solid tungsten**
6 **rod."**

7 5. "connected to"

8 This phrase appears in asserted claims 1, 6 and 11. APE contends that the phrase
9 should be construed to mean "joined together, united or linked. In this instance, the
10 eccentric weight portion is joined with the cylindrical gear portion at a point radially outward
11 of the axis of the cylindrical gear portion. 'Connected to' can mean that the two portions
12 are separate pieces joined together so long as that connection is at a position radially
13 outward of the axis." Bay contends that the phrase should be construed to mean "formed
14 of one-piece and specifically excludes bolting as the '964 patent teaches that prior art
15 having bolted counterweights are not sufficiently durable and the '964 patent does not
16 provide any other methods of "connected to" other than casting from one-piece."

17 The court begins its analysis by first turning to the claims themselves. The phrase
18 "connected to" is first introduced in claim 1, which provides: "A vibratory assembly for
19 imparting a vibratory force to a pile, comprising: . . . at least one driving means operatively
20 connected to said counterweight and adapted to rotate said counterweight about its
21 rotational axis." Substantially similar language appears in claims 6 and 11. Claim 16
22 provides: "A cylindrical gear portion having a plurality of gear teeth around its
23 circumference, said cylindrical gear portion being made of a first metal; an eccentric weight
24 portion connected to said cylindrical gear portion at a position radially outward of the axis of
25 said cylindrical gear portion . . ." While the phrase "connected to" does not appear in claim
26 19, the court nonetheless finds that the language of this claim illuminates the meaning of
27 this phrase. Claim 19, which depends from claim 16, provides: "The counterweight
28 assembly of claim 16 wherein said eccentric weight portion is integral with said cylindrical

1 gear portion, said first metal is cast steel, and said second metal is a tungsten.”

2 As discussed above, because claim 19 would be superfluous if the phrase
3 “connected to” meant the same thing as the term “integral,” and because the presence of
4 the limitation “integral” in claim 19 gives rise to a presumption that this limitation is not
5 present in claim 16, the court, as noted above, construes the phrase “connected to” have a
6 different meaning than the term “integral.” However, because the claim language does not
7 clearly define the phrase, the court turns to the specification for added insight.

8 The specification states that:

9 The counterweight **40** has a center bore **106** that extends fully through the
10 gear portion **41** and the eccentric weight portion **43** . . . The center bore
11 **106** has an inner diameter that is slightly larger than the outer diameter
12 of the shaft **82**, such that the center bore securely receives the shaft.
13 The eccentric weight portion **43** has two threaded bores **108** that
14 communicate with and are transversely oriented relative to the center
15 bore **106**. The threaded bores **108** are adapted to receive conventional
16 threaded lock fasteners to lock the shaft **82** within the center bore **106**,
17 thereby securely connecting the counterweight **40** to the shaft for rotation
18 with the shaft.

19 ‘964 Patent, col. 5, lines 37-50.

20 The specification further states: “At least one motor is operatively coupled to the
21 counterweight and is adapted to rotate the counterweight to cause the vibratory forces.”
22 ‘964 Patent, col. 2, lines 39-42. In addition, the specification states that: “When the drive
23 motor **42** is activated, the drive motor turns its shaft . . . causing the counterweight **40** to
24 rotate on the shaft **82** . . .” ‘964 Patent, col. 7, lines 25-31.

25 In this case, neither the claim language nor the specification expressly define or
26 describe the phrase “connected to.” Nor does the specification indicate explicitly or
27 implicitly that the patentee intended to import a novel or specialized meaning to the phrase
28 “connected to” or the term “connected.” Ordinarily, therefore, “connected” means
“conjoined; fastened or linked together.” Oxford English Dictionary (2d ed. 1989). In
addition, the specification indicates that the word coupled is used interchangeably with
“connected to” insofar as the specification uses coupled, rather than the phrase “connected
to” as used in the claim language, to describe the relationship between the drive motor and

1 the counterweight. The patent discloses no novel or specialized meaning of the word
2 “coupled.” Ordinarily, therefore, coupled means “tied, joined, linked, or associated
3 together in pairs.” Oxford English Dictionary (2d ed. 1989). Thus, while the word
4 “coupled” appears in the specification, not in the claims, the court finds that it is meant to
5 have the same meaning as “connected to.”

6 Moreover, as the specification describes, and figure 4 illustrates, the shaft and
7 counterweight are separate pieces or parts and the shaft is securely connected to the
8 counterweight by threaded lock fasteners for rotation with the shaft upon the activation of
9 the drive motor. The court construes this language to mean that “connected to” conveys
10 the joining, uniting or linking of two separate pieces or parts.

11 Finally, to the extent that Bay asks the court to construe the term “connected to” to
12 exclude bolting on the basis that the “ ‘964 patent teaches that prior art having bolted
13 counterweights are not sufficiently durable and the ‘964 patent does not provide any other
14 methods of “connected to” other than casting from one-piece[.]” the court declines to do so.
15 The court need not reach this issue to construe the phrase “connected to.”

16 Thus, the court declines to adopt either party’s proposed construction of the phrase
17 “connected to.” Instead, the court construes the phrase “connected to” to mean: **“joined
18 together, united or linked.”**

19 CONCLUSION

20 In accordance with the foregoing, and for the reasons discussed above, the court
21 construes the parties’ disputed terms and/ or phrases as follows:

- 22 1. “cylindrical gear portion” means: **“the ‘gear portion’ of the counterweight is
23 a substantially cylindrical portion and has a rear face, a front face, and a
24 plurality of gear teeth around its perimeter.”**
- 25 2. “eccentric weight portion” means: **“the bottom portion of the
26 counterweight, which extends forward from the front face of the gear
27 portion, containing more weight than the top portion due to its larger
28 mass, including at least one insert-receiving area therein adapted to**

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receive at least one solid tungsten rod.”

3. “integral” means: **“formed or cast of one-piece.”**

4. “insert-receiving area” means: **“a bore formed in the eccentric weight portion of the counterweight, which extends fully through the gear portion and fully through the eccentric weight portion of the counterweight, capable of receiving a solid tungsten rod.”**

5. “connected to” means: **“joined together, united or linked.”**

IT IS SO ORDERED.

Dated: June 12, 2009



PHYLLIS J. HAMILTON
United States District Judge