

UNITED STATES DISTRICT COURT  
DISTRICT OF MINNESOTA

Medtronic, Inc. and Medtronic USA, Inc.,

Plaintiffs,

v.

Edwards Lifesciences Corp., Edwards  
Lifesciences, LLC, and Edwards Lifesciences  
(U.S.) Inc.,

Defendants.

Civil No. 11-1650 (JNE/JSM)  
ORDER

Edwards Lifesciences Corp., Edwards  
Lifesciences, LLC, and Edwards Lifesciences  
(U.S.) Inc.,

Counterclaimants,

v.

Medtronic, Inc., Medtronic USA, Inc., and  
Medtronic Vascular Inc.

Counterdefendants.

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**Order Regarding Additional Claim Construction Briefing**

In this action Plaintiffs Medtronic, Inc. and Medtronic USA, Inc. (collectively, “Medtronic”) accuse Defendants Edwards Lifesciences Corp., Edwards Lifesciences, LLC, and Edwards Lifesciences (U.S.) Inc. (collectively, “Edwards”) of infringement of U.S. Patent No. 7,468,073 (’073 patent), U.S. Patent No. 7,503,929 (’929 patent), U.S. Patent No. RE42,395 (’395 patent), and U.S. Patent No. 6,004,330 (’330 patent). As Counterclaimants, Edwards accuses Medtronic of infringement of the “McCarthy patents”: U.S. Patent No. 6, 749,630 (’630 patent), U.S. Patent No. 8,114,155 (’155 patent), and U.S. Patent No. 8,123,800 (’800 patent). On May 16, 2013 the Court issued an order regarding construction of patent claim terms that one

or both parties had proffered for construction. *See* Docket No. 102 (“Markman Order”).

Subsequently, both sides filed summary judgment motions seeking various rulings. The motions include requests for summary adjudication of non-infringement and/or invalidity of all the asserted patents other than the ’330 patent. The Court heard oral argument on the summary judgment motions on January 28, 2014. The parties’ submissions in connection with the summary judgment motions demonstrate that the Court needs to further consider certain claim construction matters. Accordingly, the parties may file a brief not exceeding 6,000 words by February 13, 2014 addressing the following items:

1. Potential revisions to constructions of terms in the McCarthy patent claims

For the McCarthy patent claims, the Markman Order construed the disputed phrase “generally arranged about an axis” as “generally arranged about an axis, the axis being an imaginary line that passes through the area centroid of the ring, in the direction of blood flow.” Docket No. 102, 46-52. During the claim construction proceedings, each side proffered a proposed construction of the disputed claim language.<sup>1</sup> In arguing against Edwards’s proposed construction, Medtronic contended that the construction’s reliance on “the direction of blood flow” would render the claims indefinite. *See* Docket No. 86, 12-22. The construction adopted by the Markman Order included a reference to the “direction of blood flow.”

Three additional terms construed by the Markman Order refer back to the “axis” as construed in connection with the phrase “generally arranged about an axis.” First, the Markman Order specified that the reference to “axially offset” across all the claims of the three McCarthy patents “means that a line drawn from one free end to the axis, with the line being perpendicular

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<sup>1</sup> **Medtronic’s construction:** “arranged about the line running perpendicular to, and through the center of, the reference plane within which a majority of the ring body lies”

**Edwards’s construction:** “generally arranged about the imaginary line through the center of the [ring/template] in the direction of the blood flow”

to the axis, will not intersect the axis at the same point at which a similar line drawn to the axis from the other free end intersects the axis.” Docket No. 102, 58-61. Second, for the “reference plane” in the phrase “a majority of which lies within a reference plane,” the Markman Order stated that the “reference plane is simply a plane that is perpendicular to the axis and that goes through a midpoint of the inner body.” *Id.* at 62-64. Third, the Order construed “annulus reference plane through a midpoint of the rigid body” as “a reference plane that passes through a cross-sectional midpoint of the rigid body and that is perpendicular to the axis.” *Id.* at 65-68.

Medtronic filed a summary judgment motion contending that the term “generally arranged about an axis”—as construed—along with the related terms “axially offset,” “reference plane,” and “annulus reference plane” render the claims invalid for failure to meet the definiteness requirement of the second paragraph of 35 U.S.C. § 112. Docket No. 299, 29-40. In considering the parties’ submissions in connection with Medtronic’s motion and reviewing the intrinsic evidence again, the Court finds that the Markman Order’s treatment of some of the terms in the McCarthy patent claims needs to be revisited for at least three reasons.

First, a potential issue with the approach taken by the Markman Order is the tying of “axially offset” and the two different terms using “reference plane” to the central axis referenced in the phrase “generally arranged about an axis.” Starting with the language of the claims for “axially offset,” a review of each of the three patents shows that the independent claims refer to different types of axial offsets for the ends of the ring. For example, some claims refer to the ends being axially offset “from each other,” *see* ’155 patent, Claim 11; ’800 patent, Claims 1 and 10, and others require the ends to be axially offset from a reference plane through a midpoint of the ring body in which a majority of the ring lies, *see* ’155 patent, Claim 21. Additional variations exist. *See* ’630 patent, Claim 1; ’155 patent, Claim 1; ’800 patent, Claims 21-22.

Thus the claims do not explicitly require that the axial offset necessarily be determined based on the axis about which the ring is “generally arranged.”

The specifications also do not lead to a requirement that the axial offset of the free ends be assessed against the central axis, although the specifications depict that method of evaluation. In particular, the specifications discuss measuring the distance between the free ends with reference to the central axis in connection with Figure 2 of the patents. *See* ’630 patent, 4:51-56; ’155 patent, 5:7-24; ’800 patent, 5:31-49. The summary of the invention for the ’155 and ’800 patents, however, states that the ring of “[t]he present invention” has a configuration “following a three-dimensional path such that the free ends are axially offset from an annulus reference plane through a midpoint of the ring body.” ’155 patent, 2:40-43; ’800 patent, 2:39-42. In other words, those specifications leave open the possibility of gauging the offset without regard to a specific central axis.

Second, the parties have focused in on, and extensively debated, the language of the “direction of blood flow” in the Markman Order’s construction of “generally arranged about an axis.” Medtronic’s position is that if the construction of “axis” refers to the “direction of blood flow,” the direction and orientation of the ring relative to it must be definitively and precisely pinned down in order to evaluate the “axially offset” and “reference planes” limitations. While that may turn out to be the case for some of the claims, given the variations in the axial offset limitation between claims and the additional guidance from other limitations of the claims, precision of the central axis may not be necessary for all the claims. Additionally, the references to, and depictions of, the “direction of blood flow” in the specifications show that the axis represents the overall or general direction of anticipated blood flow through the ring, i.e. a top-

down direction through the center of the ring. *See, e.g.*, '800 patent, Figs. 2, 7A-C, 8A, 8C; '800 patent, 5:24-30.

Third, the reference to the “area centroid of the ring” in the construction by the Markman Order of “axis” in the phrase “generally arranged about an axis” has created some confusion. The '155 and '800 patents state that the axis “passes through the area centroid of the ring when viewed in plan view” and also refer to the axis as lying “at the centroid of the ring.” '155 patent, 4:35-39, 5:1-2; '800 patent, 2:54-58, 5:24-25. Thus, the reference should either be to the “centroid of the ring” or to the “area centroid of the ring when viewed in plan view.”

Given that a relationship between the axial offset of the ends of the ring and the central axis around which the ring is “generally arranged” does not appear necessary for every claim, and in light of some of the other issues presented in connection with Medtronic’s summary judgment motion, the Court is considering the following tentative revisions:

1. **“generally arranged about an axis”** – the construction of this language would be revised to read “generally arranged about an imaginary line that passes through the centroid of the ring in the anticipated aggregate direction of blood flow through the ring.”
2. **“axially offset”** – Rather than requiring a specific way of measuring an offset against the axis about which the ring is generally arranged, “axially offset” just means “offset in the axial direction.”
3. **“a majority of which lies within a reference plane”** – This language does not require further construction or limitation.

For the term “annulus reference plane through a midpoint of the rigid body,” the Court finds that specifying a relationship to the central axis for the claims in which that language appears, i.e.

Claims 21 and 22 of the '800 patent, does appear necessary.<sup>2</sup> In particular, those claims lack the additional constraint that a majority of the ring lies in the same reference plane, which other claims relying on a reference plane include. The parties also agreed that the plane referenced in that limitation is perpendicular to the central axis. *See* Docket No. 102, 65-66. Consequently, the construction of “annulus reference plane through a midpoint of the rigid body” would not be modified.

The additional briefing is intended to give the parties a chance to provide input on these tentative revisions.

4. Claim construction positions on additional terms in the '073 patent and '929 patent

The issues on which Edwards moved for summary judgment include non-infringement and invalidity of the '073 patent, as well as invalidity of the '929 patent. The parties' arguments on these patents reflect a potential underlying disagreement about the construction of certain limitations in the claims at issue. Consequently, the Court requests that the parties provide their claim construction positions with support for the following claim terms:

'073 patent

- “coupled” in the phrase “releasably coupled to the valve body” – The parties should specifically address their positions on whether the term “coupled” reaches indirect coupling.
- “valve body” – The Markman Order already addressed this term and the inquiry at the present stage is a narrow one. The parties should address their positions, with specification support, on whether “valve body” is an “open” term. *See Lampi Corp. v. Am. Power Prods., Inc.*, 228 F.3d 1365, 1376 (Fed. Cir. 2000) (noting that relevant

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<sup>2</sup> Whether the specification of a relationship to the central axis enables the scope of those two claims to be adequately determined is a separate question and not addressed here.

language “must be interpreted in light of the specification to determine whether open or closed language is intended”) (internal quotation marks omitted).

'929 patent

- “the end of the tensioning component transitions the line to create tension within the line” – The parties should specifically address their positions on the meaning of “transitions the line” in the context of the quoted claim limitation.

Dated: February 3, 2014

s/Joan N. Ericksen  
JOAN N. ERICKSEN  
United States District Judge