United States District Court
District of Massachusetts

WBIP, LLC,	)	
Plaintiff,	)	
	)	
v.	)	**Civil Action No.**
	)	**11-10374-NMG**
KOHLER CO.,	)	
Defendant.	)	
	)	

MEMORANDUM & ORDER

GORTON, J.

On March 4, 2011, plaintiff WBIP, LLC ("WBIP") sued defendant Kohler Co. ("Kohler") for infringing two of its patents: U.S. Patent No. 7,314,044 ("the '044 patent"), entitled "Marine Emissions Control" and issued on January 1, 2008, and U.S. Patent No. 7,832,196 ("the '196 patent"), entitled "Electronic Emissions Control" and issued on November 16, 2010. Both patents are directed to marine power generators which include in their exhaust systems a catalyst component to reduce exhaust emissions. The complaint alleges that several models of Kohler's "Low Carbon Monoxide (CO) Gas Marine Generator" infringe those patents. WBIP seeks damages, costs and an injunction prohibiting further infringement. Kohler has denied the allegations and asserted a counterclaim for a declaration of non-infringement and invalidity of both patents.

The Court held a Markman hearing on July 12, 2012 at which

counsel offered arguments in support of their proposed claim construction of disputed terms. The following is the Court's ruling with respect to those terms.

I. Background

A. The Parties

Westerbeke Corporation ("Westerbeke") is a family-owned company, located in Taunton, Massachusetts, which manufactures engines and generators, especially for the marine market. It was founded in 1937 by John H. Westerbeke and inherited in 1976 by his son, Jack Westerbeke, who serves as the company's Chief Engineer and is a named inventor in the two patents-in-suit. The plaintiff in this case, WBIP, is an affiliated company which owns Westerbeke's intellectual property.

Kohler is a Wisconsin-based corporation best known for its plumbing products. It has a large power division, Kohler Power Systems, which manufactures generators, including marine generators.

B. The Technology

Marine power generators are devices which provide electrical power to boats and have two main components: an internal combustion engine and a generator.

A typical internal combustion engine has multiple cylinders in which air and fuel are mixed together and ignited with a spark. Expansion of the combusting fuel drives a piston which

turns a crankshaft. The "air/fuel ratio" of the engine reflects the amount of air and fuel mixed together in the combustion chamber. The air/fuel ratio is said to be "stoichiometric" when the amounts of air and fuel are balanced such that all of the air and all of the fuel are used up in combustion. The air/fuel ratio is "rich" when there is an excess of fuel, and "lean" when there is an excess of air. After combustion, engine exhaust is pushed out of the cylinders, travels through an exhaust system and is expelled.

The other major component of marine power generators is the electrical generator. Output from the engine powers the electrical generator, which then produces electricity for the boat. To properly power a typical generator, the engine must run at a generally constant speed, even as the load on the engine varies. In other words, when someone on the boat engages an electrical appliance, the engine must immediately compensate to maintain the engine speed and the generator frequency and voltage. Otherwise, the appliance may be damaged.

Because marine power generators are used on an enclosed boat, they present a risk of exposing boaters to carbon monoxide. To reduce that risk, the patents-in-suit teach that exhaust emissions can be controlled by including a catalyst in the engine's exhaust system. Chemical catalysts present their own risks, however because they run hot and may pose a fire hazard.

They also require certain air/fuel ratios to reduce hydrocarbons, carbon monoxide and nitrogen oxides simultaneously.

To manage those complications, the patent teaches that an electronic controller should be added to the generator 1) to control the air/fuel ratio of the engine and 2) "to govern engine speed with respect to a constant speed while maintaining the air/fuel ratio". Claim 1 of the '044 patent is illustrative and contains most of the disputed terms:

> A marine engine comprising:
>
> [1] an exhaust system including
>
> [a] a catalyst cooled by a flow of coolant, the catalyst arranged to intercept a flow of exhaust;
> [b] a coolant injector that injects coolant into the flow of exhaust at a point downstream of the catalyst; and
> [c] a sensor arranged to sense a characteristic of the flow of exhaust; and
>
> [2] an engine controller configured to control an air/fuel ratio of the engine as a function of the sensed exhaust flow characteristic;
>
> [3] wherein the engine controller is also configured to govern engine speed with respect to a constant speed while maintaining the air/fuel ratio.

II. Analysis

A. Principles of Claim Construction

In analyzing a patent infringement action, a Court must 1) determine the meaning and scope of the patent claims asserted to be infringed and 2) compare the properly construed claims to the infringing device. Markman v. Westview Instruments, Inc., 52

F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). The first step, known as claim construction, is an issue of law for the court to decide. Id. at 979. The second step is determined by the finder of fact. Id.

The Court's responsibility in construing claims is to determine the meaning of claim terms as they would be understood by persons of ordinary skill in the relevant art. Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). The meaning of the terms are initially discerned from three sources of intrinsic evidence: 1) the claims themselves, 2) the specification and 3) the prosecution history of the patent. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996).

The claims themselves define the scope of the patented invention. See Philips, 415 F.3d at 1312. Claim terms are generally given their "ordinary and customary meaning", which is the meaning that a person skilled in the art would attribute to the claim term. See id. at 1312-13. Even if a particular term has an ordinary and customary meaning, however, a court may need to examine the patent as a whole to determine if that meaning controls. Id. at 1313 ("[A] person of ordinary skill in the art is deemed to read the claim term ... in the context of the entire patent...."); see also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (noting that a court cannot

construe the ordinary meaning of a term "in a vacuum"). Ultimately, the correct construction will be one that "stays true to the claim language and most naturally aligns with the patent's description of the invention...." Id. at 1316 (citation omitted).

> The patent specification is
>
> the single best guide to the meaning of a disputed term [because it may reveal] a special definition given to a claim term that differs from the meaning it would otherwise possess [or contain] an intentional disclaimer, or disavowal, of claim scope by the inventor.

Phillips v. AWK Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). The Court should also consult the prosecution history to see how the inventor and the Patent and Trademark Office ("PTO") understood the patent and to ensure the patentee does not argue in favor of an interpretation it has disclaimed. Id. at 1317.

In the rare event that analysis of the intrinsic evidence does not resolve an ambiguity in a disputed claim term, the Court may turn to extrinsic evidence, such as inventor and expert testimony, treatises and technical writings. Id. at 1314. Although extrinsic evidence may be helpful in construing claims, the intrinsic evidence is afforded the greatest weight in determining what a person of ordinary skill would have understood a claim to mean. Id. at 1324.

B. Disputed Terms

1. "govern [governing] engine speed with respect to a [selected] constant speed"

The term "govern [governing] engine speed with respect to a [selected] constant speed" was disputed in the parties' briefs, but, at the Markman hearing, the parties informed the Court that they had agreed upon the following construction:

> control [controlling] engine speed so as to keep the engine speed at a set point, recognizing that there may be fluctuations around that set point during regular operation.

The Court will construe it accordingly.

2. "maintaining [maintains] the [an] air/fuel ratio"

In the '044 patent, the second and third limitations of Claim 1 recite as follows:

> [2] an engine controller configured to control an air/fuel ratio of the engine as a function of the sensed exhaust flow characteristic;
>
> [3] wherein the engine controller is also configured to govern engine speed with respect to a constant speed while maintaining the air/fuel ratio.

The fifth limitation of Claim 12 recites "governing engine speed with respect to a constant speed while maintaining the air/fuel ratio". Finally, dependent claim 6 teaches "the marine engine of claim 1, wherein the engine controller maintains the air/fuel ratio at a stoichiometric level".

In the '196 patent, each independent claim involves

> governing engine speed with respect to a selected constant speed while maintaining an air/fuel ratio of the

engine and driving a variable load on the engine. Several dependent claims teach the method of the independent claims "wherein the air/fuel ratio is stoichiometric", and others teach "wherein the air/fuel ratio is slightly lean".

The parties dispute the meaning of the term "maintaining [maintains] the [an] air/fuel ratio". WBIP initially contended it means "keeping [keeps] the air/fuel ratio around a desired value", whereas Kohler initially asserted it means "keeping [keeps] the air/fuel ratio at a constant value".

At the Markman hearing, the parties discovered more common ground than previously acknowledged and, after further consideration, have revised their proposed constructions as follows:

> WBIP: keeping [keeps] the air/fuel ratio at a target value, recognizing that there may be fluctuations around that target value during regular operation.
>
> Kohler: keeping [keeps] the air/fuel ratio at a fixed target value, recognizing that there may be fluctuations around that target value during regular operation.

The current proposals are thus identical except that Kohler would require a "fixed target value", meaning that the target value remains consistent during operation, whereas WBIP would require simply "a target value", meaning that the controller can change the target value during operation.

In support of its more limited construction, Kohler notes that "maintain" means "to keep in an existing state". Changing

the target value during operation, Kohler argues, is altering the air/fuel ratio rather than maintaining it. The purported "target" value would be entirely random if it could be changed, whether intentionally or not, during operation.

Kohler adds that the specification and prosecution history support its construction. Notably, the patent provides only two examples of what it means to maintain the air/fuel ratio and, in both instances, a fixed target is applied:

> In one embodiment, controller 24 provides controls the air fuel ratio of the engine 12 to correspond to a 1.0 stoichiometric ratio. In other embodiments, the air fuel ratio of the engine 12 is slightly lean.

'044 patent, 3:8-13; '196 patent 3:38-42. Moreover, during prosecution, the patentee argued that

> governing engine speed with respect to a constant speed and maintaining a certain air/fuel ratio of the engine together require a compound control scheme that is neither trivial or obvious.

(emphasis added).

WBIP responds that Kohler's proposal is unduly restrictive. Adding the word "fixed", it argues, would violate the general rule that "the words 'a' or 'an' in a patent claim carry the meaning of 'one or more.'" 01 Communique Lab., Inc. v. LogMeIn, Inc., No. 2011-1403, 2012 WL 3089367, at *4 (Fed. Cir. July 31, 2012). The Federal Circuit has found that

> [t]he exceptions to this rule are extremely limited: a patentee must evince a clear intent to limit "a" or "an" to "one". The subsequent use of definite articles "the" or "said" in a claim to refer back to the same claim term

> does not change the general plural rule, but simply reinvokes that non-singular meaning. An exception to the general rule arises only where the language of the claims themselves, the specification, or the prosecution history necessitate a departure from the rule.

Id. (internal citation and quotation omitted).

Here, WBIP points out, the claims in the '196 patents all recite "maintaining an air/fuel ratio" and the claims in the '044 patent recite "controlling an air/fuel ratio" and then refer back to maintaining the air/fuel ratio with the definite article "the". Thus, WBIP argues, the claim teaches the use of "one or more" target air/fuel ratios during operation. WBIP adds that, unlike engine speed, the claims do not require that the air/fuel ratio be maintained with respect to a "constant".

The Court agrees with WBIP and will adopt its proposed construction. The patent indeed discloses only two examples (also taught in dependent claims) which both require that the air/fuel ratio be maintained with respect to a fixed target. Confining the claims to those embodiments, however, is unwarranted. Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). The use of "an", and the absence of a requirement in the claims that the air/fuel ratio be maintained with respect to a "constant", indicate that more than one target ratio may be applied, and

maintained, during operation. Random or arbitrary variations would not, as Kohler contends, be covered by the claims insofar as the adopted construction requires that the air/fuel ratio be kept at "a target value". A "target" is a predetermined goal or objective and thus is neither random nor arbitrary.

Accordingly, the Court will construe "maintaining [maintains] the [an] air/fuel ratio" to mean "keeping [keeps] the air/fuel ratio at a target value, recognizing that there may be fluctuations around that target value during regular operation."

3. "sense/sensing a characteristic of the flow of exhaust" / "monitoring a first exhaust variable"

In the '044 patent, the term "sense a characteristic of the flow of exhaust" appears in Claim 1 and the term "sensing a characteristic of the flow of exhaust" appears in Claim 12. In the '196 patent, the term "monitoring a first exhaust variable" appears in each independent claim.

Plaintiff contends those terms should be construed to mean "sense/sensing [monitoring] the level of a substance in the exhaust flow", whereas defendant contends they mean "sense/sensing [monitoring] the quantity of a substance in the exhaust flow" (emphasis supplied). Thus, the parties dispute only whether the terms involve sensing/monitoring the level of a substance (WBIP's position) or the quantity of a substance (Kohler's position) in the exhaust flow.

WBIP's position derives support from the claim language and

specification. In the '044 patent, dependent claim 15 teaches "[t]he method of claim 12, wherein the first exhaust flow characteristic is oxygen level", not oxygen quantity. In the specification, the abstract section provides that a sensor is arranged "to sense a characteristic of the flow of exhaust, such as oxygen or carbon monoxide level." The summary section provides that the claimed method includes

> sensing a characteristic of the flow of exhaust (such as oxygen level), and controlling an air/fuel ratio of the engine as a function of the sensed exhaust flow characteristic. In some embodiments the method also includes monitoring a second exhaust flow characteristic, such as carbon monoxide level, downstream of the catalyst and providing a warning to an operator when the second exhaust flow characteristic reaches a threshold level.

'044 patent, 2:19-26 (emphasis added). Thus, the patent continually describes oxygen or carbon monoxide level, rather than quantity, as the exhaust flow characteristic to sense. In fact, "quantity" is never mentioned in either patent.

Kohler apparently agrees that the word "level", which is defined in the Merriam-Webster dictionary as "the magnitude of a quantity considered in relation to an arbitrary reference value; magnitude, intensity", comports with the claim language. It contends, however, that it was compelled to propose an alternative word, i.e., "quantity", because WBIP insinuated in its infringement contentions that the "level" of a substance in the exhaust flow refers to sensing not only the relative quantity of the substance in the exhaust but also to a specific indication

of whether the quantity of the substance is above or below a certain threshold level.

The Court finds use of the word "quantity" to be unduly restrictive. According to the Merriam-Webster dictionary, "quantity" means "an indefinite amount or number", "a determinate or estimated amount" or "total amount or number". Construing the characteristic to be the quantity of a substance would exclude the patent's first disclosed embodiment, a narrow-band oxygen sensor, which is also claimed in dependent Claim 3 of the '044 patent. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (stating that a construction which would cause a preferred embodiment to fall outside of the scope of the patent claims is strongly disfavored). Such sensors make a proportional assessment by determining, for example, the quantity of oxygen or carbon monoxide in the exhaust relative to that in the atmosphere. An output voltage corresponding to that proportional assessment is then reported to the controller. Thus, the quantity of the oxygen or carbon monoxide is not the only "characteristic" sensed. Rather, it is the level, i.e., the quantity in relation to a control, which is sensed.

In any event, Kohler's objection essentially puts the cart before the horse. At this stage, the Court interprets the claim language in light of the intrinsic and extrinsic evidence. That analysis has led the Court to conclude that the terms

"sense/sensing a characteristic of the flow of exhaust" and "monitoring a first exhaust variable" mean "sense/sensing [monitoring] the level of a substance in the exhaust flow". At the appropriate juncture, Kohler may attempt to persuade the finder of fact that its allegedly infringing activity does not fall within the scope of those claims.

4. "controlling the air/fuel ratio of the engine as a function of the variable"

The term "controlling the air/fuel ratio of the engine as a function of the variable" appears in Claims 1, 26 and 36 of the '196 patent. The parties agree that the dispute over this term is the same as that discussed in Subpart 3 above, i.e., whether the term "quantity" or "level" should be incorporated. For the same reasons discussed in that Subpart, the Court adopts plaintiff's proposed construction and construes the term to mean: "controlling the air/fuel ratio of the engine in response to the level of the substance in the exhaust flow".

5. "coolant injector" / "injects" / "injecting"

Claim 1 of the '044 patent recites "a coolant injector that injects coolant into the flow of exhaust at a point downstream of the catalyst", and Claim 12 recites "injecting coolant into the flow of exhaust at a point downstream of the catalyst". The independent claims of the '196 patent all recite "injecting liquid coolant into the exhaust". Throughout the patent specifications, the word "injecting" is continually used to

describe the process by which "coolant" enters the "exhaust stream" to cool the catalyst. See '044 patent, 3:1-5, 4:32-35, 6:32-36; '196 patent, 3:33-35, 4:60-63, 6:64-66.

WBIP contends that the terms "coolant injector", "injects" and "injecting" require no construction. Kohler argues, however, that 1) "injects" and "injecting" should be construed to mean "forces into" and "forcing", respectively, and 2) "coolant injector" should be construed to mean "a device that forces coolant into the exhaust flow".

Kohler contends that a construction of "injects" and "injecting" is necessary to clarify that coolant is not simply directed or introduced into the exhaust flow but rather is "forced" into the exhaust flow. The Merriam-Webster dictionary provides the following two meanings for "inject": 1) "to introduce into something forcefully" or "to force a fluid into (as for medical purposes)" and 2) "to introduce as an element or factor in or into some situation or subject". Kohler presumably believes it would be helpful to the jury to clarify that the claim term "inject" refers to the former. Kohler does not, however, track the dictionary definition but rather seeks to equate the verb "to inject" to the verb "to force".

In support, Kohler notes that the patent specifications use the term "inject" in ways that distinguish it from terms like "directed", such as noting that "water is directed through

cooling passages ... and is then injected into the exhaust stream...." '044 patent, 3:1-5; '196 patent, 3:31-33. Kohler has also submitted a declaration from its expert, Robert Brooks, who stated the following:

> From my review, the '044 and '196 patents use the terms "inject" and "injecting" to refer to methods of forcing a fluid directly into something else.
>
> For example, both patents refer to injecting air into an exhaust manifold.... It is my opinion that one of ordinary skill in the art, reviewing the patents at the time of the '196 patent filing, would have known that such "injecting" refers to the forcing of air under pressure directly into an exhaust manifold.

Brooks Decl. ¶ 27.

The Court is unconvinced. As WBIP argues, the concept of "injecting" and "forcing" may overlap but they are not identical. Nothing in the intrinsic evidence indicates that the claim term "inject" means "force", and the Court declines to credit Mr. Brooks' conclusory assertion. Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc) ("[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court."). Juxtaposing use of the verbs "inject" and "direct" in the specification is singularly unhelpful. The plain meaning of "inject" is, of course, different than "direct", and that difference can be readily appreciated by a lay juror without further edification. Accordingly, the Court declines to construe the terms "inject" or "injecting" and instead accords them their plain and ordinary meanings.

With respect to the term "coolant injector", however, no such plain and ordinary meaning is apparent and WBIP has not proposed one. The term suggests, as Kohler argued during the Markman hearing, some thing or device that "injects" coolant. WBIP contends, on the other hand, that the coolant injector is not a separate injection device but rather a function of the larger apparatus, i.e., a seawater pump which circulates water through the engine and expels it from an injection outlet. While that appears to be how the apparatus operates, the Court is left without any sense of the plain and ordinary meaning of the term "a coolant injector" and suspects the jury will be similarly befuddled.

Accordingly, the Court determines the term requires construction and will construe it to mean "a device", consistent with Kohler's proposal.

6. "cooled by a flow of coolant" / "flowing a flow of coolant ... to cool"

In the '044 patent, the method of Claim 1 involves "a catalyst cooled by a flow of coolant". Claim 12 similarly involves "flowing a flow of coolant through an exhaust system of the engine to cool a catalyst...."

WBIP contends the terms should be afforded their plain and ordinary meanings because they will be readily understandable to a jury.

Kohler initially responded that the terms "cooled by a flow

of coolant" and "flowing a flow of coolant ... to cool" should be construed to mean

> cooled/cooling by a flow of coolant to reduce sufficiently the operating temperature of the catalyst so as to have a significant impact on its performance.

That construction, it argued, clarifies the amount of cooling which is required by the claim language, i.e., while WBIP appears to take the position that any amount would suffice, the patent and prosecution history make clear that the claim language requires more than an insignificant level of cooling.

To support its position, Kohler refers to a passage in the prosecution history in which WBIP distinguishes a prior art reference ("Kato") based on the cooling limitation. In that reference, however, the coolant did not cool the catalyst because the catalyst was cantilevered away from the coolant flow. WBIP contended to the examiner:

> The coolant circulated through the guide plate and exhaust trap downstream ... of the catalyst passes is not said to have any cooling effect on the catalyst, nor would one of ordinary skill in the art of engine design presume that there would be any <u>appreciable</u> cooling of the catalyst, given the arrangement of exhaust passages.

Kohler asserts that this passage reveals that the cooling must be "appreciable" and that its proposed construction is necessary to clarify what is "appreciable". Kohler notes that the patent clarifies that 1) the purpose of cooling is "to reduce the operating temperature of the exhaust components" and 2) "higher catalyst temperatures provide more effective emissions

control", meaning that any "appreciable cooling" of the catalyst must lead to less effective emissions control and thus impact the performance of the catalyst in a significant way.

At the Markman hearing, however, Kohler admitted that its initial construction was overblown and proposed an alternative construction, not fully formulated or drafted, which would involve specifying that the "cooling" must be "to an appreciable amount". Oddly, that alternative position was proposed even though Kohler stated in its opening brief when arguing in favor of its original construction that

> Including in the construction that the cooling must be "appreciable" will not necessarily resolve the parties' dispute; the dispute would then involve the meaning of the term "appreciable cooling" as it relates to the claimed catalyst.

Indeed, that is precisely the issue facing the Court. The Merriam-Webster's dictionary defines "appreciable" as "capable of being perceived or measured". Cooling to an "appreciable" amount would thus suggest that any amount of cooling suffices, an interpretation contrary to Kohler's original position.

The Court concludes that neither of Kohler's proposed constructions is warranted. They derive no support from the patent itself but rather add new limitations not otherwise present in the claims. The mention of "appreciable" cooling during prosecution does not limit the claims in the manner Kohler suggests but merely distinguishes a reference in which there was

no cooling effect on the catalyst. See Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004) ("Absent a clear disavowal in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.").

Accordingly, the Court declines to construe the terms and instead accords them their plain and ordinary meanings.

7. "the catalyst arranged to intercept a flow of exhaust" / "a catalyst positioned to intercept a flow of exhaust flowing along the exhaust system"

In the '044 patent, the first limitation of Claim 1 teaches "the catalyst arranged to intercept a flow of exhaust" and the first limitation of Claim 12 teaches "a catalyst positioned to intercept a flow of exhaust flowing along the exhaust system".

WBIP contends that those terms should be construed to mean that "the catalyst is positioned so that exhaust gases flow through it". Kohler proposes a construction only for the language "intercept a flow of exhaust" and argues that it should be construed to mean "stop, cease, or interrupt, a flow of exhaust."

In support of its construction, Kohler notes that the general purpose dictionary definition of the word "intercept" is "stop, cease or interrupt". For example, it notes, Webster's Third New International Dictionary defines "intercept" as "to stop or interrupt the progress or course of"; Merriam-Webster's

Collegiate Dictionary Tenth Edition defines the term as "to stop, seize, or interrupt in progress or course or before arrival"; and the American Heritage College Dictionary Fourth Edition defines the term as "to stop, deflect, or interrupt the progress or intended course of". Kohler asserts that WBIP's proposal ("the catalyst is positioned so that exhaust gases flow through it") is contrary to the plain meaning of "intercept". The references in the specification to the exhaust gases passing through the catalyst, Kohler contends, cannot support such a contradictory definition where the claim language itself is unambiguous.

WBIP emphasizes that its construction is supported by the patent specifications, which repeatedly teach that the exhaust gases should flow through the catalyst. See, e.g., '044 patent, 2:61-64 & '196 patent, 3:24-27 ("Engine 10 has an exhaust manifold that receives and combines exhaust gasses from each cylinder of the engine and directs the combined exhaust gasses through a catalyst contained within the manifold...."); '044 patent, 4:25-28 & '196 patent 1:23-24 (teaching that exhaust is directed through catalyst beds). Furthermore, WBIP notes that if the catalyst in fact stopped the exhaust flow, the engine would stall. It contends such a construction, which would render the design inoperable, should be heavily disfavored by the Court. Finally, WBIP disputes that "intercept" always means to stop or block something. In engineering and math, for example, a curve

on a graph "intercepts" an axis where it simply crosses that axis.

The Court will adopt WBIP's proposed construction which it deems to be how a person of skill in the art would understand the claim language. From the specification, it is clear that the catalyst "intercepts" a flow of exhaust in the sense that the catalyst is placed in the path of the exhaust flow and requires interaction before the exhaust flow may continue on. Positioning the catalyst in such a manner necessarily will "interrupt" or hinder the progress of that flow. Thus, the term "intercept" does not, as Kohler contends, unequivocally preclude WBIP's proposed construction but rather is consistent with it.

Accordingly, the Court will construe the terms "the catalyst arranged to intercept a flow of exhaust" and "a catalyst positioned to intercept a flow of exhaust flowing along the exhaust system" to mean "the catalyst is positioned so that exhaust gases flow through it".

8. "at least about six inches below the lowest edge of the catalyst"

Dependent Claim 39 of the '196 patent teaches:

> The method of claim 36 wherein injecting liquid coolant comprises injecting the liquid coolant *at least about six inches <u>below</u> the lowest edge of the catalyst*.

10:12-14 (emphasis added). The parties dispute the meaning of the word "below" in that claim. Kohler contends that it means "vertically under" the lowest edge of the catalyst, whereas WBIP

contends that it means "downstream of" the lowest edge of the catalyst.

According to Kohler, the term "below" would be readily understood by a jury as meaning "vertically under", given that the word is generally defined to mean "directly under" or "underneath". WBIP responds that its construction is warranted to reflect the disclosed purpose of the limitation, which is to prevent salt water from damaging the catalyst:

> In marine applications where the cooling seawater can have a high salt content, the water injection outlets in elbow are preferably at least about six inches (15 centimeters) below the lowest edge of the catalyst or the upper edge of any internal elbow baffles positioned to avoid salt water splash on the hot catalysts.

'044 patent, 4:35-40; '196 patent, 4:63-5:1. Given that purpose, WBIP submits that what is most important is the separation between the water injection outlets and the catalyst, i.e., the length of piping between them. A greater distance between the outlet and the lower edge of the catalyst provides more resistance to water back-flowing upward and "splashing" the catalyst. By contrast, WBIP contends, Kohler's proposed "vertical" dimension is an imprecise and somewhat arbitrary measurement because, for example, an exhaust pipe which is configured so that the exhaust travels 18 inches between the catalyst and injection point, but ends up only three inches "vertically" below the catalyst, would not be covered by Claim 39. Such a configuration, however, would provide greater

protection than six inches of directly vertical pipe.

Although plaintiff's functional explanation is logical, its proposed construction does not account for the terminology used in the claim. Where, as here, the word "below" is used as a preposition, it means, according to the Merriam-Webster dictionary, "lower in place, rank, or value than", "under" or "down river from". Admittedly, the third definition fits WBIP's proposal of "downstream". Nonetheless, the very fact that the relative positions are described using the word "below" rather than "downstream" is significant in the context of this patent and requires that the outlet must be at least the prescribed distance underneath the lowest edge of the catalyst.

Claim 36, unlike dependent Claim 39, involves "injecting liquid coolant into the exhaust downstream of the catalyst". (emphasis added). Thus, the independent claim actually uses the word "downstream", whereas the dependent claim uses the word "below". Presumably, the use of those different terms reflects a difference in their meaning and scope. See Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1382 (Fed. Cir. 2008) ("Our precedent instructs that different claim terms are presumed to have different meanings."). Moreover, the specification describes embodiments in which exhaust sensors are typically placed "downstream" of the catalyst but, by contrast, describes the salt water injection outlets as "below" the lowest

edge of the catalyst.

There is no indication that the words were intended to be used interchangeably, and the Court will not construe them as such. Thus, the Court concludes that the term "at least about six inches below the lowest edge of the catalyst" means "at least about six inches vertically under the lowest edge of the catalyst".

ORDER

In accordance with the foregoing,

1) "govern/governing engine speed with respect to a [selected] constant speed" means:

   "**control [controlling] engine speed so as to keep the engine speed at a set point, recognizing that there may be fluctuations around that set point during regular operation**";

2) "maintaining [maintains] the [an] air/fuel ratio" means:

   "**keeping [keeps] the air/fuel ratio at a target value, recognizing that there may be fluctuations around that target value during regular operation**";

3) "sense/sensing a characteristic of the flow of exhaust" and "monitoring a first exhaust variable" mean:

   "**sense/sensing [monitoring] the level of a substance in the exhaust flow**";

4) "controlling the air/fuel ratio of the engine as a function of the variable" means:

   "**controlling the air/fuel ratio of the engine in response to the level of the substance in the exhaust flow**";

5) "injects" and "injecting" are accorded their plain and

ordinary meaning;

6) "coolant injector" means **"a device"**;

7) "cooled by a flow of coolant" and "flowing a flow of coolant ... to cool" are accorded their plain and ordinary meaning;

8) "the catalyst arranged to intercept a flow of exhaust" and "a catalyst positioned to intercept a flow of exhaust flowing along the exhaust system" mean:

"the catalyst is positioned so that exhaust gases flow through it";

9) "at least about six inches below the lowest edge of the catalyst" means:

"at least about six inches vertically under the lowest edge of the catalyst".

So ordered.

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge

Dated August 14, 2012