## 505002392 07/13/2018

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5049140

SUBMISSION TYPE:		NEW ASSIGNMENT		
NATURE OF CONVEYANCE:		ASSIGNMENT		
CONVEYING PARTY	DATA			
		Name	Execution Date	
TIMOTHY C. ERNST			07/13/2018	
RECEIVING PARTY D	 )ATA			
Name:		CUMMINS INC.		
Street Address:	500 JACł	500 JACKSON STREET		
City:		COLUMBUS		
State/Country:	INDIANA	INDIANA		
Postal Code:	47201	47201		
PROPERTY NUMBER		Number		
Property Type Application Number:		6025485		
CORRESPONDENCE	DATA			
Fax Number:				
Fax Number: <i>Correspondence will</i>		the e-mail address first; if that is unsucce if that is unsuccessful it will be sent via		
Fax Number: <i>Correspondence will</i> <i>using a fax number, i</i>	if provided;	t <b>he e-mail address first; if that is unsucce</b> <i>if that is unsuccessful, it will be sent via</i> 12-832-5171		
Fax Number: <i>Correspondence will using a fax number, l</i> Phone:	i <b>f provided;</b> 31	if that is unsuccessful, it will be sent via		
Fax Number: Correspondence will	<b>if provided;</b> 31 jw	<i>if that is unsuccessful, it will be sent via</i> 12-832-5171	US Mail.	
Fax Number: <i>Correspondence will using a fax number, i</i> Phone: Email: Correspondent Name Address Line 1:	if provided; 31 jw a: JC	<i>if that is unsuccessful, it will be sent via</i> 12-832-5171 viggins@foley.com	US Mail.	
Fax Number: <i>Correspondence will using a fax number, i</i> Phone: Email: Correspondent Name	<b>if provided;</b> 31 31 jw <b>3:</b> JC 32	<i>if that is unsuccessful, it will be sent via</i> 12-832-5171 viggins@foley.com OSEPH F. JANAS/FOLEY & LARDNER LLF	US Mail.	
Fax Number: <i>Correspondence will using a fax number, i</i> Phone: Email: Correspondent Name Address Line 1:	<b>if provided;</b> 3 31 jw <b>32</b> 32 SI	<i>if that is unsuccessful, it will be sent via</i> 12-832-5171 viggins@foley.com OSEPH F. JANAS/FOLEY & LARDNER LLF 21 N. CLARK STREET	US Mail.	
Fax Number: <i>Correspondence will</i> <i>using a fax number, i</i> Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4:	if provided; 31 jw e: JC 32 SI C	<i>if that is unsuccessful, it will be sent via</i> 12-832-5171 viggins@foley.com OSEPH F. JANAS/FOLEY & LARDNER LLF 21 N. CLARK STREET UITE 2800	US Mail.	
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Fax Number: <i>Correspondence will</i> <i>using a fax number, i</i> Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET I NAME OF SUBMITTER SIGNATURE:	if provided; 31 jw e: JC 32 SI SI C NUMBER:	if that is unsuccessful, it will be sent via 12-832-5171 viggins@foley.com OSEPH F. JANAS/FOLEY & LARDNER LLF 21 N. CLARK STREET UITE 2800 HICAGO, ILLINOIS 60654 106389-5041 JOSEPH F. JANAS /Joseph F. Janas, Reg. No. 69,864/	US Mail.	
Fax Number: <i>Correspondence will</i> <i>using a fax number, i</i> Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET I NAME OF SUBMITTER SIGNATURE: DATE SIGNED:	if provided; 3 31 jw 2: JC 32 SI C NUMBER: R:	if that is unsuccessful, it will be sent via 12-832-5171 viggins@foley.com OSEPH F. JANAS/FOLEY & LARDNER LLF 21 N. CLARK STREET UITE 2800 CHICAGO, ILLINOIS 60654 106389-5041 JOSEPH F. JANAS /Joseph F. Janas, Reg. No. 69,864/ 07/13/2018	US Mail.	
Fax Number: <i>Correspondence will</i> <i>using a fax number, i</i> Phone: Email: Correspondent Name Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET I NAME OF SUBMITTEF SIGNATURE: DATE SIGNED: Total Attachments: 3	if provided; 3 31 jw 2: JC 32 SI C NUMBER: R: R:	if that is unsuccessful, it will be sent via 12-832-5171 viggins@foley.com OSEPH F. JANAS/FOLEY & LARDNER LLF 21 N. CLARK STREET UITE 2800 HICAGO, ILLINOIS 60654 106389-5041 JOSEPH F. JANAS /Joseph F. Janas, Reg. No. 69,864/ 07/13/2018 ignment#page1.tif	US Mail.	

## ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor (hereinafter referred to as "ASSIGNOR") has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto

Cummins Inc. 500 Jackson Street Columbus, IN 47201

(hereinafter referred to as "ASSIGNEE") its successors and assigns, the full and exclusive right, title and interest for the United States, its territories and possessions, and all foreign countries in and to this invention relating to

## SYSTEMS AND METHODS FOR WASTE HEAT RECOVERY FOR INTERNAL COMBUSTION ENGINES

as set forth in this United States Patent Application

check one [ ] executed concurrently herewith,
[ ] executed on
[ X ] Serial No. <u>16/025.485</u> Filed <u>7/2/2018</u>

as well as in and to (a) all improvements and modifications of the above-identified invention or inventions, (b) the above-identified application and all other applications for Letters Patent of the United States and countries foreign thereto for above-identified invention or inventions and all improvements and modifications thereof, (c) all Letters Patent which may issue from said applications in the United States and countries foreign thereto, (d) all divisions, continuations, reissues, and extensions of said applications and Letters Patent, and (e) the right to claim for any of said applications the full benefits and priority rights under the Patent Cooperation Treaty, the Paris Convention and any other international agreement; such right, title, and interest to be held and enjoyed by ASSIGNEE, its successors and assigns, to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by ASSIGNOR had this Assignment not been made.

ASSIGNOR HEREBY AUTHORIZES ASSIGNEE to file patent applications in any or all countries on the above-identified invention or inventions in the name of the undersigned or in the name of ASSIGNEE or otherwise as ASSIGNEE may deem advisable under the International Convention or otherwise.

ASSIGNOR HEREBY AUTHORIZES AND REQUESTS the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE as assignee of the entire interest, for the sole use and benefit of ASSIGNEE, its successors and assigns.

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ASSIGNOR HEREBY AGREES (a) to communicate to ASSIGNEE, its successors and assigns, or their representative or agents, all facts and information known or available to ASSIGNOR respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, opposition, revocation, extension, or infringement purposes or other legal, judicial, or administrative proceedings, whenever requested by ASSIGNEE; (b) to testify in person or by affidavit as required by ASSIGNEE, its successors and assigns, in any such proceeding in the United States or a country foreign thereto; (c) to execute and deliver, upon request by ASSIGNEE, all lawful papers including, but not limited to, original, divisional, continuation, and reissue applications; renewals, assignments, powers of attorney, oaths, affidavits, and declarations, depositions; and (d) to provide all reasonable assistance to ASSIGNEE, its successors and assigns, in obtaining and enforcing proper title in and protection for said invention or inventions, improvements, and modifications under the intellectual property laws of the United States and countries foreign thereto.

ASSIGNOR HEREBY REPRESENTS AND WARRANTS that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

ASSIGNOR HEREBY GRANTS to the law firm of Foley & Lardner LLP the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

ASSIGNOR UNDERSTANDS AND AGREES that the attorneys and agents of the law firm of Foley & Lardner LLP do not personally represent ASSIGNOR OR ASSIGNOR's legal interests, but instead represent the interests of ASSIGNEE; since said attorneys and agents cannot provide legal advice to ASSIGNOR with respect to this Assignment, ASSIGNOR acknowledges its right to seek its own independent legal counsel.

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Executed this 13 day of July, 2018	
	Timor 4A
:	TIMOTHY C. ERNST

State of County of 1 Where me, Tracy lea Jones Notary public Here insert Name and Title of the Officer (Notary Public) On Date

personally appeared <u>TIMOTHY C. ERNST</u> Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hany and official seal. Signature Signadexp[]EqlandfyEg Notary Public. State of Indiana Bartholomew County Commission # 708997 My Commission Expires January 04, 2026

Place Notary Seal Above

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**RECORDED: 07/13/2018**