

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
BORGWARNER LUXEMBOURG AUTOMOTIVE SYSTEMS S.A.	08/14/2023

RECEIVING PARTY DATA

Name:	BORGWARNER LUXEMBOURG OPERATIONS SARL
Street Address:	274, AVENUE DE LUXEMBOURG
City:	HAUTCHARAGE
State/Country:	LUXEMBOURG
Postal Code:	L-4940

PROPERTY NUMBERS Total: 36

Property Type	Number
Application Number:	17642018
Application Number:	17999436
Application Number:	17800007
Application Number:	17797518
Application Number:	17774643
Application Number:	17617148
Application Number:	17633149
Application Number:	17286570
Application Number:	17275488
Application Number:	17265052
Application Number:	17047440
Application Number:	16955410
Application Number:	16764058
Application Number:	16439810
Application Number:	16310519
Application Number:	16300343
Application Number:	15751336
Application Number:	15420795
Application Number:	15112931
Application Number:	14780080

PATENT

Property Type	Number
Application Number:	14044925
Application Number:	13996628
Application Number:	13940651
Application Number:	13648383
Application Number:	13639203
Application Number:	13521234
Application Number:	13069862
Application Number:	12607431
Application Number:	12599543
Application Number:	12231064
Application Number:	12231051
Application Number:	12156788
Application Number:	11825711
Application Number:	11592026
Application Number:	11264467
Application Number:	11264445

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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NAME OF SUBMITTER: BIRGITTA LAMBERT

SIGNATURE: /Birgitta Lambert/

DATE SIGNED: 08/14/2023

Total Attachments: 17

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**INTELLECTUAL PROPERTY
ASSIGNMENT AGREEMENT**

by and between

BORGWARNER LUXEMBOURG AUTOMOTIVE SYSTEMS S.A.

and

BORGWARNER LUXEMBOURG OPERATIONS S.À.R.L.

Dated as of 1 June, 2023

This INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT (“IP Assignment”), dated as of 1 June, 2023 (“Effective Date”), is made by between BorgWarner Luxembourg Automotive Systems S.A., a Luxembourg société anonyme (“Assignor”), in favor of BorgWarner Luxembourg Operations S.à.r.l., a Luxembourg société à responsabilité limitée (“Assignee”). The Assignor and Assignee collectively referred to in this IP Assignment as the “Parties”.

[REDACTED]

[REDACTED]

WHEREAS, Assignee wishes to acquire all of Assignor’s right, title and interest in and to the Acquired Rights (as defined herein), and Assignor wishes to assign such right, title and interest in and to such Acquired Rights to Assignee;

NOW, THEREFORE, in consideration of the promises and mutual covenants set forth in the Separation Agreement and herein, and other good and valuable consideration, the Parties hereby agree as follows:

1. Assignment. Assignor hereby conveys, transfers, and assigns to Assignee, and Assignee hereby accepts, all of Assignor’s right, title, and interest in and to the following assets and rights of Assignor, subject to existing encumbrances and to the extent that such assets and rights are owned by Assignor or exist as of the Effective Date (collectively, the “Acquired Rights”):

a. the patents, utility models, and applications of the foregoing set forth on Schedule 1 hereto and all issuances, divisions, continuations, continuations-in-part, reissues, extensions, reexaminations, and renewals thereof (“Patents”);

[REDACTED]

c. any and all claims and causes of action with respect to any of the foregoing, whether accruing before, on, or after the date hereof, including all rights to and claims for damages, restitution, and injunctive and other legal and equitable relief for past, present, and future infringement, dilution, misappropriation, violation, misuse, breach, or default, with the right but no obligation to sue for such legal and equitable relief and to collect, or otherwise recover, any such damages.

[REDACTED]

3. Recordation and Further Actions. Assignor hereby authorizes the Commissioner for Patents and the Commissioner for Trademarks in the United States Patent and Trademark Office, the Register of Copyrights in the United States Copyright Office, and the officials of corresponding entities or agencies in any applicable jurisdictions anywhere in the world to record and register this IP Assignment upon request by Assignee. Assignor covenants and agrees that, at any time and from time to time upon the request of Assignee, Assignor shall provide any further necessary documentation and do all further acts reasonably requested by Assignee or necessary to confirm and perfect title in and to the Acquired Rights in Assignee, its successors and assigns.



5. Counterparts. This IP Assignment may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed one and the same agreement. A signed copy of this IP Assignment delivered by facsimile, e-mail, or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this IP Assignment.

6. Successors and Assigns. This IP Assignment shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.

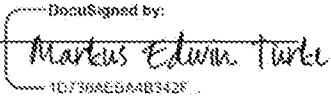
7. Governing Law. This IP Assignment and any disputes relating to, arising out of or resulting from this IP Assignment, including to its execution, performance, or enforcement, shall be governed by, and construed and enforced in accordance with, the Laws of the State of Delaware, regardless of the Laws that might otherwise govern under applicable principles of conflicts of Laws thereof or of any other jurisdiction.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Parties have caused this IP Assignment to be executed by their duly authorized representatives as of the Effective Date.

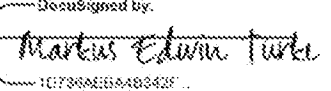
BorgWarner Luxembourg Automotive Systems S.A.

Assignor:

Name Markus Edwin Turke
Position Manager
Date 1 June, 2023
Signature 
10.F36A2E5A4B342F ..

BorgWarner Luxembourg Operations S.à.r.l.

Assignee:

Name Markus Edwin Turke
Position Manager
Date 1 June, 2023
Signature 
10.F36A2E5A4B342F ..

SCHEDULE 1

ASSIGNED PATENTS AND PATENT APPLICATIONS

DKT No.	Title	Country	App No.	App Date	Patent No.
DP-325132	Method Of Operating A Water Injection System	PCT - (Patent Cooperation Treaty)	PCT/EP2022/084669	12/6/2022	
DP-325141	Spray Direction Controlled Di-Cng H2 Injector	PCT - (Patent Cooperation Treaty)	PCT/EP2022/084240	12/2/2022	
DP-325176	Fuel Injector Suitable For Gaseous Fuel	PCT - (Patent Cooperation Treaty)	PCT/EP2022/083935	11/30/2022	
DP-325140	Spray Cap For Gas Injector	PCT - (Patent Cooperation Treaty)	PCT/EP2022/076522	9/23/2022	
DP-325094	Simplified Mold For Solenoid Asm Overmolding	PCT - (Patent Cooperation Treaty)	PCT/EP2022/050161	1/5/2022	
DP-324969-1	Control Of Dual Scr Doser	PCT - (Patent Cooperation Treaty)	PCT/EP2020/079507	10/20/2020	
DP-324969-2	Control Of Dual Scr Doser	PCT - (Patent Cooperation Treaty)	PCT/EP2020/078315	10/8/2020	
DP-324806	Mixture Adaptation Index (Mai) To Optimize Cold Restart Performance And Emissions Of A Gasoline Engine Usina Rotary Valve In The Cooling Circuit	CHIN - (China P.R.)	201980068490.X	10/15/2019	
DP-322784	Self-Regulated Single Piston Pump With A Combined Flow Regulation And Pressure Damper	CHIN - (China P.R.)	201780037877.X	5/4/2017	201780037877.X
DP-320258	Enhanced Iclc Using Minimum Delivery Pulse	CHIN - (China P.R.)	201310295634.X	7/15/2013	201310295634.X
DP-320258	Enhanced Iclc Using Minimum Delivery Pulse	KORS - (Republic of Korea)	2013-0082418	7/12/2013	10-2001978
DP-324993	Method Of Determining Engine Torque	USA - (United States)	17/999/436	5/21/2021	
DP-325020	Method Of Controlling Fuel Injection After Cranking	USA - (United States)	17/800007	2/18/2021	
DP-325014	Increased Pressure Resistance Of Penetration Weld	USA - (United States)	17/797518	2/6/2021	
DP-324887	Vapor Canister And Evaporative Emissions Control System For A Vehicle	USA - (United States)	17/774643	11/4/2020	
DP-324924	Determination Of Opening Charactersitics Of A Fuel Injector	USA - (United States)	17/642018	8/26/2020	
DP-324930	Method Of Determining Fuel Evaporation From An Engine Oil Sump	USA - (United States)	17/633149	9/30/2020	

DKT No.	Title	Country	App No.	App Date	Patent No.
DP-324949	Method Of Determining Acceleration Of A Crankshaft	USA - (United States)	17/617148	10/1/2020	
DP-324806	Method Of Controlling Engine Cold Restart	USA - (United States)	17/286570	10/15/2019	11261810
DP-324751	Pole Piece Retention And Insertion Method	USA - (United States)	17/275488	9/10/2019	
DP-324704	Fuel Injector	USA - (United States)	17/265052	7/19/2019	
DP-324652	Method Of Controlling A Fuel Injector	USA - (United States)	17/047440	4/12/2019	11352971
DP-323784	High Pressure Fuel Pump	USA - (United States)	16/955410	12/12/2018	11365710
DP-324179	Injector	USA - (United States)	16/764058	11/13/2018	11260406
DP-324684	Method To Determine The Use Of A Block Heater	USA - (United States)	16/439810	6/13/2019	10731543
DP-322810	Method Of Controlling A Solenoid Actuated Fuel Injector	USA - (United States)	16/310519	6/16/2017	10704487
DP-322784	Fuel Pump	USA - (United States)	16/300343	5/4/2017	10648437
DP-322117	Fuel Rail For Injection System	USA - (United States)	15/751336	7/28/2016	10539108
DP-322348	Method And Apparatus For Leak Detection	USA - (United States)	15/420795	1/31/2017	10215659
DP-321259	Method Of Controlling A Multi Selective Catalytic Reduction System	USA - (United States)	15/112931	1/20/2015	11389768
DP-320916	Method Of Controlling Ammonia Levels In Catalytic Units	USA - (United States)	14/780080	3/25/2014	10940436
DP-320440	Method Of Operating An Internal Combustion Engine	USA - (United States)	14/044925	10/3/2013	10054071
DP-319362	Method Of Controlling An Internal Combustion Engine	USA - (United States)	13/996628	12/6/2011	9650983
DP-320258	Fuel Injection Control In An Internal Combustion Engine	USA - (United States)	13/940651	7/12/2013	9863357
DP-319413	Method Of Fuel Quality Determination	USA - (United States)	13/648383	10/10/2012	9046048
DP-319224	Injection Control Method	USA - (United States)	13/639203	4/8/2011	8820150
DP-319153	Compression-Ignition Engine With Exhaust System	USA - (United States)	13/521234	1/13/2011	8943804
DP-319331	System And Method For Controlling An Injection Time Of A Fuel Injector Based On Closing Electrical Decay	USA - (United States)	13/069862	3/23/2011	8656890
DP-318314	Method For Controlling A Scr Catalyst	USA - (United States)	12/607431	10/28/2009	8387368
DP-317159	Internal Combustion Engine System	USA - (United States)	12/599543	7/24/2008	8381513

DKT No.	Title	Country	App No.	App Date	Patent No.
DP-316723	System And Method For Outlet Temperature Control Of An Oxidation Catalyst	USA - (United States)	12/231064	8/28/2008	8490388
DP-316724	System And Method For Selective Catalytic Reduction Control	USA - (United States)	12/231051	8/28/2008	8596042
DP-316231	Method Of Operating A Compression Ignition Engine	USA - (United States)	12/156788	6/4/2008	7617812
DP-315609	Fuel Injector Control	USA - (United States)	11/825711	7/9/2007	8000876
DP-312188	Improved Damping For Dig Injector Using Decoupled Armature-Pintle Concept	USA - (United States)	11/592026	11/2/2006	7422166
DP-313175	A Method And Device For Engine Control In A Motor Vehicle	USA - (United States)	11/264467	11/1/2005	7269497
DP-313176	A Method And Device For Engine Control In A Motor Vehicle	USA - (United States)	11/264445	11/1/2005	7322346
DP-322810	Injector Opening Speed Control	KORS - (Republic of Korea)	10-2018-7036084	6/16/2017	10-2232607
DP-325020	Injection Pattern At Engine Start	INDI - (India)	202247052649	2/18/2021	
DP-324992	Inlet Metering Valve (Imv) Design For Fuel Pump	INDI - (India)	202247049187	2/2/2021	
DP-324969-2	Control Of Dual Scr Doser	INDI - (India)	202247035817	10/8/2020	
DP-324969-1	Control Of Dual Scr Doser	INDI - (India)	202247035816	10/20/2020	
DP-324993	Ecu Safety Monitoring Torque Estimator Based On Instantaneous Crankshaft Acceleration	CHIN - (China P.R.)	2.0218E+11	5/21/2021	
DP-325020	Injection Pattern At Engine Start	CHIN - (China P.R.)	202180014242.4	2/18/2021	
DP-325014	Increased Pressure Resistance Of Penetration Weld	CHIN - (China P.R.)	202180013000.3	2/6/2021	
DP-324992	Inlet Metering Valve (Imv) Design For Fuel Pump	CHIN - (China P.R.)	202180010830.0	2/2/2021	
DP-325021	Exhaust Catalyst Inertia Learning And Adaptation For Temperature Model Improvement	CHIN - (China P.R.)	202110233725.5	3/3/2021	
DP-324887	Evaporative Canister With Integrated Pump And Leak Detection	CHIN - (China P.R.)	202080091826.7	11/4/2020	
DP-324969-2	Control Of Dual Scr Doser	CHIN - (China P.R.)	202080081480.2	10/8/2020	
DP-324969-1	Control Of Dual Scr Doser	CHIN - (China P.R.)	202080081402.2	10/20/2020	

DKT No.	Title	Country	App No.	App Date	Patent No.
DP-324949	Method Of Determining Acceleration Of A Crankshaft	CHIN - (China P.R.)	202080071462.6	10/1/2020	
DP-324924	Gasoline Injector Opening Delay Determination With Knock Sensor	CHIN - (China P.R.)	202080063342.1	8/26/2020	
DP-324930	Multi-Zone Model For Fuel Deposit In Oil Sump And Boil-Off Estimation	CHIN - (China P.R.)	202080062542.5	9/30/2020	
DP-324179	Atomization Energy Enhanced Nozzle Tip Design Using Obstacles And Flow Guidance Channels In The Flow Path	INDI - (India)	202047020432	11/13/2018	379893
DP-324762	Re-Ignition & Glow-Ignition Detection Usin Crank Sensor Signal	CHIN - (China P.R.)	201980068507.1	10/15/2019	
DP-324784	Driving-Style-Adapted Emission Control	CHIN - (China P.R.)	201980068365.9	10/15/2019	
DP-324751	Solenoid Injector Pole Piece Retention	CHIN - (China P.R.)	201980059366.7	9/10/2019	201980059366.7
DP-324704	Statically Determined Injector Armature/Pintle Guide	CHIN - (China P.R.)	201980051212.3	7/19/2019	201980051212.3
DP-324652	Injector Pintle Closing Detection & Control	CHIN - (China P.R.)	201980025767.0	4/12/2019	201980025767.0
DP-323680	Low Temperature Partial Lnt Regeneration	INDI - (India)	201947046305	4/16/2018	356567
DP-323784	Pressure Regulating Valve For Gasoline High Pressure Fuel Pump	CHIN - (China P.R.)	201880082958.6	12/12/2018	201880082958.6
DP-324179	Atomization Energy Enhanced Nozzle Tip Design Using Obstacles And Flow Guidance Channels In The Flow Path	CHIN - (China P.R.)	201880073416.2	11/13/2018	201880073416.2
DP-323754	Fuel Injector Control Using Noise Signal	CHIN - (China P.R.)	201880061924.9	9/24/2018	
DP-322810	Injector Opening Speed Control	INDI - (India)	201847046977	6/16/2017	
DP-322784	Self-Regulated Single Piston Pump With A Combined Flow Regulation And Pressure Damper	INDI - (India)	201847046081	5/4/2017	385028
DP-324228	Nh3 And Nox Measurement With Nox Sensor During Lnt Regeneration	INDI - (India)	201844048006	12/19/2018	
DP-322810	Injector Opening Speed Control	CHIN - (China P.R.)	201780036738.5	6/16/2017	201780036738.5
DP-322686	Wraf Sensor Slow Response Learning	CHIN - (China P.R.)	201780032032.1	5/23/2017	201780032032.1

DKT No.	Title	Country	App No.	App Date	Patent No.
DP-321259	Feed-Forward Control Of A Multi-Scr System	INDI - (India)	201647028098	1/20/2015	389026
DP-321985	Dpf Efficiency Monitoring Algorithm Using Pm Sensor	INDI - (India)	201644004417	2/8/2016	
DP-321985	Dpf Efficiency Monitoring Algorithm Using Pm Sensor	CHIN - (China P.R.)	201610084711.0	2/14/2016	201610084711.0
DP-321259	Feed-Forward Control Of A Multi-Scr System	CHIN - (China P.R.)	201580005562.8	1/20/2015	201580005562.8
DP-320916	Nh3 Sensor Based Scr Control	CHIN - (China P.R.)	201480018465.8	3/25/2014	201480018465.8
DP-319659	Algorithm For Soot Sensor Signal Plausibility Diagnostic	CHIN - (China P.R.)	201280010002.8	2/17/2012	201280010002.8
DP-319369	Exhaust Temperature Predictor	CHIN - (China P.R.)	201180064332.0	1/7/2011	ZL201180064332.0
DP-319362	Gdi injector Low Pulse Learning	CHIN - (China P.R.)	201180062028.2	12/6/2011	201180062028.2
DP-319224	Injection Control Phasing Method	CHIN - (China P.R.)	201180018157.1	4/8/2011	ZL201180018157.1
DP-319225	Engine & Sensors Diagnosis And Drift Correction Method	CHIN - (China P.R.)	201180018156.7	4/8/2011	ZL201180018156.7
DP-318313	On-Board Vehicle Diagnostic Of An Oxidation Catalyst	CHIN - (China P.R.)	201080006757.1	2/5/2010	ZL201080006757.1
DP-324992	Inlet Metering Valve (Imv) Design For Fuel Pump	EPC - (European Patent Convention)	21775492.8	2/2/2021	
DP-324993	Ecu Safety Monitoring Torque Estimator Based On Instantaneous Crankshaft Acceleration	EPC - (European Patent Convention)	21729426.3	5/21/2021	
DP-325020	Injection Pattern At Engine Start	EPC - (European Patent Convention)	21708157.9	2/18/2021	
DP-325014	Increased Pressure Resistance Of Penetration Weld	EPC - (European Patent Convention)	21703920.5	2/6/2021	
DP-325019	Lubrication System Di-Cng Injectors – Dry Gas Wear	EPC - (European Patent Convention)	21174430.5	5/18/2021	
DP-324995	Ellipse Injection Hole Shape And Axis Orientation For Spray Tailoring For Side Mounting Injectors	EPC - (European Patent Convention)	21166845.4	4/2/2021	
DP-324935	Float Stops For Fuel Level Sensor	EPC - (European Patent Convention)	21150351.1	1/6/2021	
DP-324887	Evaporative Canister With Integrated Pump And Leak Detection	EPC - (European Patent Convention)	20800930.8	11/4/2020	
DP-324969-1	Control Of Dual Scr Doser	EPC - (European Patent Convention)	20796539.3	10/20/2020	
DP-324949	Method Of Determining Acceleration Of A	EPC - (European Patent Convention)	20789507.9	10/1/2020	

DKT No.	Title	Country	App No.	App Date	Patent No.
	Crankshaft				
DP-324969-2	Control Of Dual Scr Doser	EPC - (European Patent Convention)	20789091.4	10/8/2020	
DP-324930	Method Of Determining Fuel Evaporation From An Engine Oil Sump	EPC - (European Patent Convention)	20785489.4	9/30/2020	
DP-324924	Gasoline Injector Opening Delay Determination With Knock Sensor	EPC - (European Patent Convention)	20761575.8	8/26/2020	
DP-324934	Noise Reduction Fuel Tube For Automotive Lift Pump	FRAN - (France)	20203442.7	10/22/2020	3812572
DP-324934	Noise Reduction Fuel Tube For Automotive Lift Pump	GBRI - (Great Britain)	20203442.7	10/22/2020	3812572
DP-324934	Noise Reduction Fuel Tube For Automotive Lift Pump	GERM - (Germany)	20203442.7	10/22/2020	3812572
DP-324784	Driving-Style-Adapted Emission Control	EPC - (European Patent Convention)	19787252.6	10/15/2019	
DP-324762	Re-Ignition & Glow-Ignition Detection Usin Crank Sensor Signal	EPC - (European Patent Convention)	19787251.8	10/15/2019	
DP-324806	Mixture Adaptation Index (Mai) To Optimize Cold Restart Performance And Emissions Of A Gasoline Engine Usina Rotary Valve In The Cooling Circuit	EPC - (European Patent Convention)	19787250.0	10/15/2019	
DP-324751	Solenoid Injector Pole Piece Retention	EPC - (European Patent Convention)	19766238.0	9/10/2019	
DP-324652	Injector Pintle Closing Detection & Control	EPC - (European Patent Convention)	19717881.7	4/12/2019	
DP-324684	Method For Detecting The Use Of Coolant Heater In An Automobile	FRAN - (France)	19178869.4	6/6/2019	3581787
DP-324684	Method For Detecting The Use Of Coolant Heater In An Automobile	GBRI - (Great Britain)	19178869.4	6/6/2019	3581787
DP-324684	Method For Detecting The Use Of Coolant Heater In An Automobile	GERM - (Germany)	19178869.4	6/6/2019	602019001272.1
DP-323784	Pressure Regulating Valve For Gasoline High Pressure Fuel Pump	EPC - (European Patent Convention)	18822324.2	12/12/2018	
DP-324179	Atomization Energy Enhanced Nozzle Tip Design Using Obstacles And Flow Guidance Channels In The Flow Path	EPC - (European Patent Convention)	18800947.6	11/13/2018	

DKT No.	Title	Country	App No.	App Date	Patent No.
DP-323680	Low Temperature Partial Lnt Regeneration	EPC - (European Patent Convention)	18716263.1	4/6/2018	
DP-324228	Nh3 And Nox Measurement With Nox Sensor During Lnt Regeneration	FRAN - (France)	18215680.2	12/21/2018	3502430
DP-324228	Nh3 And Nox Measurement With Nox Sensor During Lnt Regeneration	GBRI - (Great Britain)	18215680.2	12/21/2018	3502430
DP-324228	Nh3 And Nox Measurement With Nox Sensor During Lnt Regeneration	GERM - (Germany)	18215680.2	12/21/2018	602018012631.7
DP-322810	Injector Opening Speed Control	EPC - (European Patent Convention)	17733760.7	6/16/2017	
DP-322686	Wraf Sensor Slow Response Learning	GERM - (Germany)	17729403.0	5/23/2017	602017022800.1
DP-322784	Self-Regulated Single Piston Pump With A Combined Flow Regulation And Pressure Damper	FRAN - (France)	17723964.7	5/4/2017	3455486
DP-322784	Self-Regulated Single Piston Pump With A Combined Flow Regulation And Pressure Damper	GBRI - (Great Britain)	17723964.7	5/4/2017	3455486
DP-322784	Self-Regulated Single Piston Pump With A Combined Flow Regulation And Pressure Damper	GERM - (Germany)	17723964.7	5/4/2017	602017014448.7
DP-322693	Contact Less Switch For Injector Closed Loop Control	FRAN - (France)	17718943.8	4/25/2017	3449115
DP-322693	Contact Less Switch For Injector Closed Loop Control	GBRI - (Great Britain)	17718943.8	4/25/2017	3449115
DP-322693	Contact Less Switch For Injector Closed Loop Control	GERM - (Germany)	17718943.8	4/25/2017	3449115
DP-321994	Robust Active Compressor Bypass Valve Actuation Control For 2 Stage Turbo Systems	GERM - (Germany)	16168354.5	5/4/2016	602016008339.6
DP-321985	Dpf Efficiency Monitoring Algorithm Using Pm Sensor	FRAN - (France)	16152336.0	1/22/2016	3056698
DP-321985	Dpf Efficiency Monitoring Algorithm Using Pm Sensor	GBRI - (Great Britain)	16152336.0	1/22/2016	3056698
DP-321985	Dpf Efficiency Monitoring Algorithm Using Pm Sensor	GERM - (Germany)	16152336.0	1/22/2016	602016002062.9

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DP-321764	Modular Integrated In Tank Brushless Pump And Controller Into Heavy Duty Filter Systems	FRAN - (France)	15774613.2	10/2/2015	3206773
DP-321764	Modular Integrated In Tank Brushless Pump And Controller Into Heavy Duty Filter Systems	GBRI - (Great Britain)	15774613.2	10/2/2015	3206773
DP-321764	Modular Integrated In Tank Brushless Pump And Controller Into Heavy Duty Filter Systems	GERM - (Germany)	15774613.2	10/2/2015	602015027239.0
DP-320916	Nh3 Sensor Based Scr Control	FRAN - (France)	14711996.0	3/25/2014	2978946
DP-320916	Nh3 Sensor Based Scr Control	GBRI - (Great Britain)	14711996.0	3/25/2014	2978946
DP-320916	Nh3 Sensor Based Scr Control	GERM - (Germany)	14711996.0	3/25/2014	602014009664.6
DP-321259	Feed-Forward Control Of A Multi-Scr System	GBRI - (Great Britain)	14152280.5	1/23/2014	2899379
DP-321259	Feed-Forward Control Of A Multi-Scr System	GERM - (Germany)	14152280.5	1/23/2014	602014036316.4
DP-320440	In-Cylinder Pressure Based Pilot Control	EPC - (European Patent Convention)	12189607.0	10/23/2012	
DP-320258	Enhanced Iclc Using Minimum Delivery Pulse	FRAN - (France)	12176387.4	7/13/2012	2685074
DP-320258	Enhanced Iclc Using Minimum Delivery Pulse	GBRI - (Great Britain)	12176387.4	7/13/2012	2685074
DP-320258	Enhanced Iclc Using Minimum Delivery Pulse	GERM - (Germany)	12176387.4	7/13/2012	602012045255.2
DP-320150	Lean Nox Trap Desulfation Control	GERM - (Germany)	12163298.8	4/5/2012	602012009260.2
DP-319362	Gdi Injector Low Pulse Learning	FRAN - (France)	11793766.4	12/6/2011	2655839
DP-319362	Gdi Injector Low Pulse Learning	GERM - (Germany)	11793766.4	12/6/2011	602011014143.0
DP-319224	Injection Control Phasing Method	FRAN - (France)	11715191.0	4/8/2011	2556232
DP-319224	Injection Control Phasing Method	GBRI - (Great Britain)	11715191.0	4/8/2011	2556232
DP-319224	Injection Control Phasing Method	GERM - (Germany)	11715191.0	4/8/2011	602011051040.1
DP-319225	Engine & Sensors Diagnosis And Drift Correction Method	GERM - (Germany)	11714521.9	4/8/2011	602011064203.0
DP-319153	Ultra Low Emission Diesel Concept With 3-Way Catalyst And Scr System	FRAN - (France)	11700916.7	1/13/2011	2524116
DP-319153	Ultra Low Emission Diesel Concept With 3-Way Catalyst And Scr System	GERM - (Germany)	11700916.7	1/13/2011	602011011275.9

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DP-319369	Exhaust Temperature Predictor	GERM - (Germany)	11700040.6	1/7/2011	602011038879.7
DP-317830	Droop Compensating Converter Setting	FRAN - (France)	11174004.9	7/14/2011	2546499
DP-317830	Droop Compensating Converter Setting	GBRI - (Great Britain)	11174004.9	7/14/2011	2546499
DP-317830	Droop Compensating Converter Setting	GERM - (Germany)	11174004.9	7/14/2011	602011066234.1
DP-318313	On-Board Vehicle Diagnostic Of An Oxidation Catalyst	GERM - (Germany)	10703452.2	2/5/2010	602010004327.4
DP-313173	Boost Pressure Control - Internal Combustion Engine With Vgt Turbocompressor	GERM - (Germany)	10180370.8	3/17/2005	502005014552.6
DP-319225	Engine & Sensors Diagnosis And Drift Correction Method	GERM - (Germany)	10159322.6	4/8/2010	602010022751.0
DP-318311	Method Of Regenerating An Exhaust After Treatment Device	GERM - (Germany)	09153751.4	2/26/2009	602009003380.8
DP-318154	Engine Control System And Method	FRAN - (France)	08168714.7	11/10/2008	2184472
DP-318154	Engine Control System And Method	GERM - (Germany)	08168714.7	11/10/2008	602008016410.1
DP-318314	Method For Controlling A Scr Catalyst	GERM - (Germany)	08167975.5	10/30/2008	602008035855.0
DP-316231	Method Of Operating A Compression Ignition Engine	GERM - (Germany)	08153393.7	3/27/2008	602008005518.3-08
DP-317159	Internal Combustion Engine System	GERM - (Germany)	07254103.0	10/17/2007	602007056341.0
DP-316724	System And Method For Selective Catalytic Reduction Control	GERM - (Germany)	07253090.0	7/31/2007	602007005125.8-08
DP-316723	System And Method For Outlet Temperature Control Of An Oxidation Catalyst	GERM - (Germany)	07253089.2	7/31/2007	2031217
DP-315609	Fuel Injector Control	FRAN - (France)	07252741.9	7/9/2007	1887205
DP-315609	Fuel Injector Control	GERM - (Germany)	07252741.9	7/9/2007	602007003526.0
DP-316429	In Line Pump For 2 Wheels Application With Self Priming Device	FRAN - (France)	07008390.2	4/25/2007	1985837
DP-316429	In Line Pump For 2 Wheels Application With Self Priming Device	GERM - (Germany)	07008390.2	4/25/2007	602007007895.4
DP-314786	Cng Fuel Quality Learn Function Integrated In Torque Based Ems Control Structure	GERM - (Germany)	06008041.3	4/19/2006	502006006441.3
DP-314446	Definition Of Execution Conditions For The Correction For Ashes Accumulation Algorithm	GERM - (Germany)	05257435.7	12/2/2005	602005020935.2

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DP-312188	Improved Damping For Dig Injector Using Decoupled Armature-Pintle Concept	GERM - (Germany)	05256792.2	11/2/2005	1783356
DP-313176	A Method And Device For Engine Control In A Motor Vehicle	FRAN - (France)	05251628.3	3/17/2005	1672206
DP-313176	A Method And Device For Engine Control In A Motor Vehicle	GERM - (Germany)	05251628.3	3/17/2005	502005008782.8-08
DP-313173	Boost Pressure Control - Internal Combustion Engine With Vgt Turbocompressor	GERM - (Germany)	05251627.5	3/17/2005	1672203
DP-313175	A Method And Device For Engine Control In A Motor Vehicle	GERM - (Germany)	05251626.7	3/17/2005	502005009671.1
DP-313185	Modular Onboard Model Of Exhaust Line Thermal State	FRAN - (France)	05251227.4	3/1/2005	1698776
DP-313185	Modular Onboard Model Of Exhaust Line Thermal State	GERM - (Germany)	05251227.4	3/1/2005	602005024507.3-08
DP-314447	Model Based Throttle Control For Supercharged Internal Combustion Engines	GERM - (Germany)	05026065.2	11/30/2005	602005019757.5
DP-314448	Air System Adaptive Learn For An Internal Combustion Engine	GERM - (Germany)	05026064.5	11/30/2005	602005021375.9-08
DP-314083	Embedded Egr Rate Control Via Misfire Detection	FRAN - (France)	05017539.7	8/11/2005	1752641
DP-314083	Embedded Egr Rate Control Via Misfire Detection	GBRI - (Great Britain)	05017539.7	8/11/2005	1752641
DP-314083	Embedded Egr Rate Control Via Misfire Detection	GERM - (Germany)	05017539.7	8/11/2005	602005010856.4-08
DKT22086	Fuel Injector	GBRI - (Great Britain)	2216228.3	11/1/2022	
DKT22053	Integrate In One Bloc All The Functions Requested For The Pressure Regulation For A H2 Ice Engine	GBRI - (Great Britain)	2212554.6	8/30/2022	
DKT22022	Fuel Injector For Direct Injection Of Gaseous Fuel	GBRI - (Great Britain)	2208425.5	6/9/2022	
DP-325198	Method Of Operating A Hydrogen Internal Combustion Engine	GBRI - (Great Britain)	2207529.5	5/23/2022	
DP-325196	Method Of Controlling Fuel Injection	GBRI - (Great Britain)	2203930.9	3/21/2022	
DP-325165	Injector And Rail Assembly	GBRI - (Great Britain)	2203838.4	3/18/2022	

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DP-325132	Method Of Operating A Water Injection System	GBRI - (Great Britain)	2118229.0	12/16/2021	
DP-325141	Spray Direction Controlled Di-Cng H2 Injector	GBRI - (Great Britain)	2117833.0	12/9/2021	
DP-325176	Fuel Injector Suitable For Gaseous Fuel	GBRI - (Great Britain)	2117450.3	12/2/2021	
DP-325140	Spray Cap For Gas Injector	GBRI - (Great Britain)	2114063.7	9/30/2021	
DP-325094	Simplified Mold For Solenoid Asm Overmolding	GBRI - (Great Britain)	2100204.3	1/7/2021	
DP-325067	Label Triggers For Fls	GBRI - (Great Britain)	2100146.6	1/6/2021	
DP-325054	New Jet Pump Body Injected	GBRI - (Great Britain)	2016238.4	10/13/2020	
DP-324993	Ecu Safety Monitoring Torque Estimator Based On Instantaneous Crankshaft Acceleration	GBRI - (Great Britain)	2008805.0	6/10/2020	2595897
DP-325019	Lubrication System Di-Cng Injectors – Dry Gas Wear	GBRI - (Great Britain)	2007302.9	5/18/2020	
DP-324995	Ellipse Injection Hole Shape And Axis Orientation For Spray Tailoring For Side Mounting Injectors	GBRI - (Great Britain)	2005051.4	4/6/2020	2593892
DP-324994	Gasoline Injector Coil Housing Made Of Half-Shells	GBRI - (Great Britain)	2004299.0	3/25/2020	
DP-325021	Exhaust Catalyst Inertia Learning And Adaptation For Temperature Model Improvement	GBRI - (Great Britain)	2003114.2	3/4/2020	
DP-325014	Increased Pressure Resistance Of Penetration Weld	GBRI - (Great Britain)	2002428.7	2/21/2020	
DP-325020	Injection Pattern At Engine Start	GBRI - (Great Britain)	2002403.0	2/20/2020	2592238
DP-324975	Gdi Water/Fuel Emulsion Rail For Homogenous Mixture And Quick Response	GBRI - (Great Britain)	2001550.9	2/5/2020	2591999
DP-324992	Inlet Metering Valve (Imv) Design For Fuel Pump	GBRI - (Great Britain)	2001442.9	2/3/2020	
DP-324935	Float Stops For Fuel Level Sensor	GBRI - (Great Britain)	2000145.9	1/7/2020	2591085
DP-324956	Not Calibrated Relief Valve With Enhanced Stability	GBRI - (Great Britain)	1917706.2	12/4/2019	2596034
DP-324951	Water/Fuel Emulsion Rail For Homogeneous Mixture And Quick Response	GBRI - (Great Britain)	1917370.7	11/28/2019	2589364
DP-324969	Control Of Dual Scr	GBRI - (Great Britain)	1917136.2	11/25/2019	2589150

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	Doser				
DP-324969	Control Of Dual Scr Doser	GBRI - (Great Britain)	1917132.1	11/25/2019	
DP-324887	Evaporative Canister With Integrated Pump And Leak Detection	GBRI - (Great Britain)	1916085.2	11/5/2019	2588778
DP-324949	Engine Misfire Detection Algorithm Based On Instantaneous Crankshaft Acceleration	GBRI - (Great Britain)	1915408.7	10/24/2019	2588435
DP-324934	Noise Reduction Fuel Tube For Automotive Lift Pump	GBRI - (Great Britain)	1915240.4	10/22/2019	2588402
DP-324930	Multi-Zone Model For Fuel Deposit In Oil Sump And Boil-Off Estimation	GBRI - (Great Britain)	1914284.3	10/3/2019	
DP-324924	Gasoline Injector Opening Delay Determination With Knock Sensor	FRAN - (France)	1910017	9/11/2019	1910017
DP-324779	Effective Fuel Pump Decoupling - 3 Axis Decoupling	GBRI - (Great Britain)	1900951.3	1/23/2019	2580681
DP-324776	System For Nox- Reduction And Charge Cooling By Water Injection	GBRI - (Great Britain)	1818718.7	11/16/2018	
DP-324762	Re-Ignition & Glow- Ignition Detection Usin Crank Sensor Signal	GBRI - (Great Britain)	1817031.6	10/19/2018	2578156
DP-324784	Driving-Style-Adapted Emission Control	GBRI - (Great Britain)	1817030.8	10/19/2018	2578155
DP-324806	Mixture Adaptation Index (Mai) To Optimize Cold Restart Performance And Emissions Of A Gasoline Engine Usina Rotary Valve In The Cooling Circuit	GBRI - (Great Britain)	1817029.0	10/19/2018	2578154
DP-324751	Solenoid Injector Pole Piece Retention	GBRI - (Great Britain)	1814825.4	9/12/2018	2577072
DP-324728	Gdi Injector Armature Design Avoiding Manetic Sticking	GBRI - (Great Britain)	1814349.5	9/4/2018	2576884
DP-324704	Statically Determined Injeector Armature/Pinte Guide	GBRI - (Great Britain)	1812530.2	8/1/2018	2576008
DP-324683	Float Arm Integrated Resistor Card, Snap Fit For Float And Fixation Frame, For Fuel Delivery Module Application	GBRI - (Great Britain)	1807986.3	5/16/2018	2573781
DP-324652	Injector Pintle Closing Detection & Control	GBRI - (Great Britain)	1806143.2	4/15/2018	2576690

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DP-323784	Pressure Regulating Valve For Gasoline High Pressure Fuel Pump	GBRI - (Great Britain)	1721634.2	12/21/2017	2569793
DP-324228	Nh3 And Nox Measurement With Nox Sensor During Lnt Regeneration	GBRI - (Great Britain)	1721538.5	12/21/2017	2569602
DP-324180	Eccentric Pressure Regulator	GBRI - (Great Britain)	1716287.6	10/5/2017	2567424
DP-323754	Fuel Injector Control Using Noise Signal	GBRI - (Great Britain)	1715504.5	9/25/2017	2566736
DP-323680	Low Temperature Partial Lnt Regeneration	GBRI - (Great Britain)	1706113.6	4/18/2017	2561569
DP-323242	Detection Of The Injection Events By Means Of A Strain Gauge	GBRI - (Great Britain)	1702717.8	2/20/2017	2559798
DP-323118	Fuel Injector & Combustion Chamber Design For Cylinder-On-Demand (Cod) Technology	GBRI - (Great Britain)	1701537.1	1/31/2017	2559186
DP-323280	Adaptive On-Board Diagnostic Of A Slow Responding Boost Pressure Control System Of Internal Combustion Engines	GBRI - (Great Britain)	1700347.6	1/9/2017	2558604
DP-322691	Method Of Controlling A Fuel Injector	GBRI - (Great Britain)	1612992.6	7/27/2016	2552516
DP-322810	Injector Opening Speed Control	GBRI - (Great Britain)	1610548.8	6/17/2016	2551382
DP-322837	Fuel Cooled Controller For Electric Fuel Pump Application	GBRI - (Great Britain)	1610231.1	6/13/2016	2551336
DP-319943	Flow Metering And Valve Group Cooling For A Gaseous Injector	FRAN - (France)	1251020	2/3/2012	2986574
DP-325198	Method Of Operating A Hydrogen Internal Combustion Engine	PCT - (Patent Cooperation Treaty)			