e9*2016/1628*2016/1628SRA1/P*1356*00

Comunicación relativa a / *Communication concerning the*:

- homologación EU / *EU type-approval*(1)
~~- extensión de homologación / *extension of type approval*(1)~~
~~- denegación de homologación / *refusal of type approval*(1)~~
~~- retirada de homologación / *withdrawal of type approval*(1)~~

De un ~~tipo de motor~~ / familia de motores / *of an ~~engine type~~ / engine family* (1)

con respecto a las emisiones de gases y partículas contaminantes con arreglo al Reglamento (UE) 2016/1628, modificado en último lugar por el Reglamento (delegado) (1) 2018/989(de la Comisión) (1) (2) (del Parlamento Europeo y del Consejo) (1) / *with regard to gaseous and particulate pollutant emission pursuant to Regulation (EU) 2016/1628, as last amended by (Commission Delegated) (1) Regulation 2018/989 (1) (2) (of the European Parliament and of the Council) (1)*

Número de Homologación de tipo EU / EU *Type-Approval number*: e9*2016/1628*2016/1628SRA1/P*1356*00
Motivos de la extensión / *Reason for extension*: ---

SECCIÓN I / *SECTION I*

1.1. Marca (nombres comerciales del fabricante) / *Make (trade name(s) of manufacturer):*
ULTIMATRON FRANCE

1.2. Denominaciones comerciales (si procede) / *Commercial name(s) (if applicable):* Not applicable

1.3. Razón social y dirección del fabricante / *Company name and address of manufacturer*:
286 Rue Charles Gide 34670
Baillargues, France

1.4. En su caso, nombre y dirección de su representante autorizado / *Name and address of manufacturer's authorised representative (if any)*:
TUV-WORLD ECC CERTIFICATION SERVICE SL
PASEO DE LA CASTELLANA, NUM. 114 PLANTA 6, PUERTA 6 28046 Madrid Spain

1.5. Nombre y direcciones de las plantas de montaje/fabricación / *Name/s) and address(es) of assembly/manufacture plant(s)*:
ULTIMATRON FRANCE
286 Rue Charles Gide 34670 Baillargues, France

1.6. Designación del ~~tipo de motor /~~ familia de motores ~~/ FT~~ (1) / ~~*Engine type designation*~~*/engine family designation~~*~~FT (1)~~*: DK164F/P

1.6.1. Variantes / *Variants*: DK164F/P, 164F/P, DK145i, *164F#%/P-&€

1.7. Categoría y subcategoría del ~~tipo de motor~~ / familia de motores (1) (4) / *Category and sub-category of the ~~engine type~~/engine family (1) (4)*: NRS-vr-1a

1.8. Categoría de período de durabilidad de las emisiones / *Emissions durability period category*:
~~No procede~~/~~*Not applicable /*~~ Cat 1 /~~ Cat 2/ Cat 3~~ (1)

1.9. Fase de emisiones / *Emissions stage*: V / ~~SPE~~

1.10. Motor para quitanieves (5) / *Engine for snow throwers (5)*:~~ Sí/*Yes* /~~ No/*No* (1)

(1) Táchese lo que no proceda / *Delete where not applicable*
(2) Tal como se define en el Anexo I sección4.2 / *As defined in Annex I, section 4.2*
(3) Indíquese "n.a." cuando las pruebas sean realizadas por las propias autoridades competentes para la concesión de la homologación / *Fill in "n.a." where the test are carried out by the approval authority itself*
(4) Tal como se define en el Anexo I sección 4.2 / *As defnied in Annex I, section 4.2*

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SECCIÓN II / *SECTION II*

1. Servicio técnico responsable de realizar los ensayos / *Technical service responsible for carrying out the test(s)*: IDIADA

2. Fechas d elos informes de ensayos / *Date(s) of the test report(s)*: 13.10.2020

3. Números de los informes de ensayo / *Number(s) of the test report(s)*: CN20090790

SECCIÓN III / *SECTION III*

El abajo firmante certifica que la descripción del fabricante, que figura en la ficha de características adjunta, ~~del tipo de motor~~ / de la familia de motores ([1]) que se ha indicado anteriormente, del que se han presentado como prototipos una o varias muestras representativas seleccionadas por la autoridad de homologación, es exacta y que los resultados de los ensayos adjuntos son aplicables ~~al tipo de motor~~ / a la familia de motores ([1]) / *The undersigned hereby certifies the accuracy of the manufacturer's description in the attached information document of the ~~engine type~~/engine family ([1]) described above, for which one or more representative samples, selected by the approval authority, have been submitted as prototypes and that the attached test results apply to the ~~engine type~~/engine family ([1])*.

1. ~~El tipo de motor~~ / La familia de motores ([1]) cumple / ~~no cumple~~ ([1]) los requisitos establecidos en el Reglamento (UE) 2016/1628 / *The ~~engine type~~ / engine family ([1]) meets/~~does not meet ([4])~~ the requirements laid down in Regulation (EU) 2016/1628*.

2. Se concede / ~~extiende / deniega / retira~~ ([1]) la homologación / *The approval is granted ~~/ extended / refused / withdrawn ([4])~~.*

3. Se concede la homologación con arreglo al artículo 35 del Reglamento (UE) 2016/1628, de modo que la homologación solo es válida hasta el dd.mm.aaaa ([3]). / *The approval is granted in accordance with Article 35 of Regulation (EU) 2016/1628 and the validity of the approval is thus limited to dd/mm/yyyy ([3]):* No procede/*Not applicable*

([1]) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*
([2]) Potencia no corregida con arreglo a la sección 2.4 del anexo I / *Uncorrected power measured in accordance with Section 2.4 of Annex I*

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4. Restricciones de validez ([3]) ([6]) / *Restrictions to validity ([3]) ([6])*: No procede/*Not applicable*

5. Exenciones aplicadas ([3]) ([6]) / *Exemptions applied ([3]) ([6])*: No procede/*Not applicable*

Lugar / *Place* : Madrid

Fecha / *Date* : Ver firma electrónica / *See electronic signature*.

Firma / *Signature*:
EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL.
Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012

Anexos / *Attachments*:
Expediente de homologación / *Information package*.

Informes de ensayos / *Test report(s)*.
Cuando proceda, el nombre de las personas autorizadas a firmar los certificados de conformidad, muestras de sus firmas e indicación del cargo en la empresa / *Where applicable, the name(s) and specimen(s) of the signature(s) of the person(s) authorised to sign statement of conformity and a statement of their position in the company*.

En su caso, un ejemplar cumplimentado de una declaración de conformidad / *Where applicable, a completed specimen of a statement of conformity*.

Nota / *NB*:
Si este modelo se utiliza para la homologación de tipo UE de un motor como exención para nuevas tecnologías o nuevos conceptos, con arreglo al artículo 35, apartado 4, del Reglamento (UE) 2016/1628, el encabezamiento del certificado estará redactado así: «CERTIFICADO DE HOMOLOGACIÓN DE TIPO UE PROVISIONAL, VÁLIDO ÚNICAMENTE EN EL TERRITORIO DE… ([7])» / *If this model is used for EU type-approval of an engine as an exemption for new technologies or new concepts, pursuant to Article 35(4) of Regulation (EU) 2016/1628, the heading of the certificate shall read «PROVISIONAL EU TYPE-APPROVAL CERTIFICATE VALID ONLY ON THE TERRITORY OF…([7])»*.

([1]) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*
([2]) Potencia no corregida con arreglo a la sección 2.4 del anexo I / *Uncorrected power measured in accordance with Section 2.4 of Annex I*

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Adenda / *Addendum*

Número de homologación de tipo UE / *EU type-approval number*: e9*2016/1628*2016/1628SRA1/P*1356*00

PARTE A: CARACTERÍSTICAS ~~DEL TIPO DE MOTOR~~ / DE LA FAMILIA DE MOTORES ([1])
PART A: CHARACTERISTICS OF THE ~~ENGINE TYPE~~ / ENGINE FAMILY ([1])

2. Parámetros comunes de diseño ~~del tipo de motor~~ / de la familia de motores ([1])
Common design parameters of the ~~engine type~~ /engine family ([1])

2.1. Ciclo de combustión / *Combustion cycle*: ciclo de cuatro tiempos/*four stroke cycle* / ~~dos tiempos/*two stroke cycle* /~~ rotativo/*rotary* / ~~otros/*other*……(describir/*describe*)~~ ([1])

2.2. Tipo de encendido / *Ignition type*: ~~encendido por compresión / *compression ignition* /~~ encendido por chispa/*spark ignition* ([1])

2.3.1. Posición de los cilindros en el bloque / *Postion of the cylinders in the block*: ~~en V/*V* / en línea/*in-line* / radial/*radial* /~~ otros(solo)/*others(single)* ([1])

2.6. Principal medio refrigerante / *Main cooling medium*: aire/*air* /~~ agua/*water* / aceite/*oil* ([1])~~

2.7. Método de aspiración del aire / *Method of air aspiration*: atmosférico/*naturally aspirated* / ~~sobrealimentación/*pressure charged* / sobrealimentación con sistema de refrigeración del aire de admisión/*pressure charged with charge cooler* ([1])~~

2.8.1. Tipos de combustible / *Fuel type(s)*:~~ diésel (para máquinas móviles no de carretera)/*Diesel (non-road gas-oil)* / Etanol para motores específicos de encendido por compresión (ED95)/*ethanol for dedicated compression ignition engines (ED95)* /~~ gasolina (E10)/*petrol (E10)* / ~~etanol (E85)/*ethanol (E85)* / gas natural/*natural gas* / biometano/*biomethane* / gas licuado de petróleo (GLP)/*liquid petroleum gas (LPG)* ([1])~~

2.8.1.1. Subtipo de combustible (solo gas natural / biometano) / *Sub fuel type (natural gas / biomethane only)*:~~ combustible universal: de alto poder calorífico (gas H) y de bajo poder calorífico (gas~~

([1]) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*
([2]) Potencia no corregida con arreglo a la sección 2.4 del anexo I / *Uncorrected power measured in accordance with Section 2.4 of Annex I*

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~~L)/*universal fuel: high calorific fuel (H-gas) and low calorific fuel (L-gas)* / combustible restringido: de alto poder calorífico (gas H)/*restricted fuel: high calorific fuel (H-gas)* / combustible restringido: de bajo poder calorífico (gas L/*restricted fuel: low calorific fuel (L-gas)* / combustible específico (GNL)/*Fuel specific (LNG)*~~

2.8.2. Alimentación de combustible / *fuelling arrangement*: solo combustible líquido/*liquid-fuel only* / ~~solo combustible gaseoso/*gaseous-fuel only* / combustible dual tipo 1A/*dual-fuel type 1A* / combustible dual tipo 1B/*dual-fuel type 1B* / combustible dual tipo 2A/*dual-fuel type 2A* / combustible dual tipo 2B/*dual-fuel type 2B* / combustible dual tipo 3B/*dual-fuel type 3B* (1)~~

2.8.3. Lista de otros combustibles que el motor puede utilizar declarados por el fabricante de conformidad con el punto 1 del anexo I del Reglamento Delegado (UE) 2018/989 (indicar la referencia a la norma o especificación reconocidas) / *List of additional fuels compatible with use by the engine declared by the manufacturer in accordance with point 1 of Annex I to Delegated Regulation (EU) 2018/989 (provide reference to recognised standard or specification)*: No procede/*Not applicable*

2.8.4. Lubricante añadido al combustible / *Lubricant added to fuel*: ~~sí~~/no / ~~*yes*~~/*no* (1)

2.8.5. Tipo de alimentación de combustible / *Fuel supply type*: ~~bomba, inyector y línea (de alta presión)/*pump (high pressure) line and injector* / bomba en línea o de distribución/*in-line pump or distributor pump* / inyector unitario/*unit injector* / raíl común/*Common Rail* /~~ carburador/*carburettor* ~~/ inyección en el orificio de admisión/*port injector* / inyección directa/*direct injector* / mezclador/*mixing unit* / otros (especificar)/*others (specify)* (1)~~

2.9. Sistemas de gestión del motor/*Engine management systems*: estrategia de control mecánica / ~~electrónica~~ */ mechanical /~~ *electronic* ~~control strategy* (1)

2.10. Dispositivos diversos / *Miscellaneous devices*: ~~sí~~/no / ~~*yes*~~/*no* (1)

2.10.1. Recirculación de gases de escape (EGR) / *Exhaust gas recirculation (EGR)*:~~ sí~~/no /~~ *yes*~~/*no* (1)

2.10.2. Inyección de agua / *Water injection*:~~ sí~~/no /~~ *yes*~~/*no* (1)

(1) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*

(2) Potencia no corregida con arreglo a la sección 2.4 del anexo I / *Uncorrected power measured in accordance with Section 2.4 of Annex I*

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2.10.3. Inyección de aire / *Air injection*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.10.4. Otros (especificar) / *Others (specify)*: N/A

2.11. Sistema de postratamiento del gas de escape / *Exhaust after-treatment system*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.1. Catalizador de oxidación / *Oxidation catalyst*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.2. Sistema de reducción de NO_x con reducción selectiva de NO_x (adición de agente reductor) / *$DeNO_x$ system with selective reduction of NO_x (addition of reducing agent)*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.3. Otros sistemas de reducción de NO_x / *Other $DeNO_x$ systems*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.4. Catalizador de tres vías que combina la oxidación y la reducción de NO_x / *Three-way catalyst combining oxidation and NO_x reduction*: ~~sí~~/no /~~*yes*~~*/no* ([1])

2.11.5. Sistema de postratamiento de partículas con regeneración pasiva / *Particulate after-treatment system with passive regeneration*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.6. Sistema de postratamiento de partículas con regeneración activa / *Particulate after-treatment system with active regeneration*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.7. Otros sistemas de postratamiento de partículas / *Other particulate after-treatment systems*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.8. Otros dispositivos de postratamiento (especificar) / *Other after-treatment devices (specify)*: ~~sí~~/no / ~~*yes*~~*/no* ([1])

2.11.9. Otros dispositivos o características que influyen fuertemente en las emisiones (especificar) / *Other devices or features that have a strong influence on emissions (specify)*: Not applicable

([1]) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*

([2]) Potencia no corregida con arreglo a la sección 2.4 del anexo I / *Uncorrected power measured in accordance with Section 2.4 of Annex I*

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3. Características esenciales de los tipos motores / *Essential characteristics of the engine type(s)*:

Elemento nº / *Item number*	Descripción / *Item description*	Motor de referencia/tipo de motor / *Parent engine/Engine type*	Tipo de motor dentro de la familia (si procede) / *Engine types within the family (if applicable)*	
3.1.1.	Designación del tipo de motor / *Engine type designation*:	DK164F/P	164F/P, DK145i, *164F#%/P-&€	**---**
3.1.2.	La designación del tipo de motor figura en la marca del motor / *Engine type show non engine mark*: sí/no / *yes/no* (1)	Yes	Yes	---
3.1.3.	Localización de las marcas reglamentarias del fabricante / *Location of the manufacturer's statutory marking*:	Crankcase and/or Shroud and/or Fuel tank	Crankcase and/or Shroud and/or Fuel tank	---
3.2.1.	Régimen nominal declarado / *Declared rated speed* (rpm):	4600	4600	---
3.2.1.2.	Potencia neta nominal declarada / *Declared rated net power* (kW):	3.5	3.5	---
3.2.2.	Régimen de potencia máxima / *Maximum power speed* (rpm):	4600	4600	---
3.2.2.2.	Potencia neta máxima / *Maximum net power* (kW):	3.5	3.5	---
3.2.3.	Régimen de par máximo declarado / *Declared maximum torque speed* (rpm):	2800	2800	---
3.2.3.2.	Par máximo declarado / *Declared maximum torque* (Nm):	8.5	8.5	---
3.6.3.	Número de cilindros / *Number of cylinders*:	1	1	---
3.6.4.	Cilindrada del motor / *Engine displacement* (cm^3)	145	145	---
3.8.5.	Dispositivo para reciclar los gases del cárter / *Device for recycling crankcase gases*: sí/no / *yes/no* (1)	No	No	---
3.11.3.12.	Reactivo consumible / *Consumable reagent*: sí/no / *yes/no* (1)	---	---	---
3.11.3.12.1.	Tipo y concentración del reactivo necesario para la acción catalítica / *Type and concentration of reagent needed for catalytic action*:	---	---	---
3.11.3.13.	Sensor(es) de NO_x / *NO_x sensor(s)*: sí/no / *yes/no* (1)	---	---	---
3.11.3.14.	Sensor de oxígeno / *Oxygen sensor*: sí/no / *yes/no* (1)	---	---	---
3.11.4.7.	Catalizador disuelto en el carburante (FBC) / *Fuel borne catalyst (FBC)*: sí/no / *yes/no* (1)	---	---	---
Condiciones especiales que deberán respetarse en el montaje del motor en la máquina móvil no de carretera / Particular conditions to be respected in the installation of the engine on non-road mobile machinery				

(1) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*

(2) Potencia no corregida con arreglo a la sección 2.4 del anexo I / *Uncorrected power measured in accordance with Section 2.4 of Annex I*

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Elemento nº / *Item number*	Descripción / *Item description*	Motor de referencia/tipo de motor / *Parent engine/Engine type*	Tipo de motor dentro de la familia (si procede) / *Engine types within the family (if applicable)*	
3.8.1.1.	Depresión máxima admisible al 100 % del régimen del motor y al 100% de carga (kPa) con filtro de aire limpio / *Maximum allowable intake depression at 100% engine speed and at 100% load (kPa) with clean air cleaner*:	5	5	---
3.8.3.2.	Temperatura máxima de salida del aire de sobrealimentación al 100% de régimen y al 100% de carga / *Maximum charge air cooler outlet temperature at 100% speed and 100% load (ºC)*:	---	---	---
3.8.3.3.	Caída máxima admisible de presión en el refrigerador del aire de sobrealimentación al 100% del régimen del motor y al 100% de carga (kPa) (si procede) / *Maximum allowable pressure drop across charge cooler at 100% engine speed and at 100% load (kPa) (if applicable)*:	---	---	---
3.9.3.	Contrapresión máxima admisible al 100% del régimen del motor y al 100% de carga / *Maximum permissible exhaust gas backpressure at 100% engine speed and at 100% load (kPa)*:	6	6	---
3.9.3.1.	Lugar de medición / *Location of measurement*:	The first chamber of Muffler	The first chamber of Muffler	---
3.11.1.2.	Descenso máximo de la temperatura desde la salida de la turbina o el sistema de escape hasta el primer sistema de postratamiento de los gases de escape (ºC), si se declara / *Maximum temperature drop from exhaust system or turbine outlet to first exhaust after-treatment system (deg. C) if stated*:	---	---	---
3.11.1.2.1.	Condiciones de ensayo para las mediciones / *Test conditions for measurement*:	---	---	---

(1) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*

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PARTE B: RESULTADOS DE LOS ENSAYOS

PART B: TEST RESULTS

3.8. El fabricante tiene intención de utilizar la señal del par de la ECU para la vigilancia en servicio / *Manufacturer intends to use ECU torque signal for in-service monitoring*: ~~sí/~~no ~~/ yes/~~*no* ([1])

3.8.1. Par en el dinamómetro superior o igual a 0,93 x par de la ECU / *Dynamometer torque greater than or equal to 0,93 x ECU torque*: ~~sí/no / yes/no~~ ([1])

3.8.2. Factor de corrección del par de la ECU en caso de que el par en el dinamómetro sea inferior a 0,93 x par de la ECU / *ECU torque correction factor in case that dynamometer torque less than 0,93 x ECU torque*: No procede/*Not applicable*

11.1. Resultados de las emisiones en el ciclo / *Cycle emissions results(*g/kWh):

Emisiones / *Emissions*	CO (g/kWh)	HC (g/kWh)	NO_x (g/kWh)	HC + NO_x (g/kWh)	PM (g/kWh)	PN (g/kWh)	Ciclo ensayo / *Test cycle*
Resultado final del ensayo NRSC con DF / *NRSC final result with DF*	468.75	6.50	1.88	8.37	---	---	G2
Resultado final del ensayo NRTC con DF / *NRTC final result with DF*	---	---	---	---	---	---	---

11.2. Resultado relativo al CO_2 / *CO_2 result*: 884.43 g/kWh

([1]) En el caso de que haya varios prototipos, deberá indicarse para cada uno de ellos / *In case of several parent engines, to be indicated for each of them.*

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E - 43710 Santa Oliva (Tarragona),
Spain

Tel. +34 977 166000
Fax +34 977 166007
e-mail: idiada@idiada.com

INFORME Nº / *REPORT No.* CN20090790

RELACIONADO CON EL REGLAMENTO R(UE) 2016/1628 SOBRE LOS LÍMITES DE EMISIONES DE GASES Y PARTÍCULAS CONTAMINANTES Y A LA HOMOLOGACIÓN DE TIPO PARA LOS MOTORES DE COMBUSTIÓN INTERNA QUE SE INSTALEN EN LAS MÁQUINAS MÓVILES NO DE CARRETERA /
RELATING TO REGULATION R(EU) 2016/1628 RELATING TO GASEOUS AND PARTICULATE POLLUTANT EMISSION LIMITS AND TYPE-APPROVAL FOR INTERNAL COMBUSTION ENGINES FOR NON-ROAD MOBILE MACHINERY

Solicitante / *Applicant*	:	ULTIMATRON FRANCE
Fabricante / *Manufacturer*	:	ULTIMATRON FRANCE 286 Rue Charles Gide 34670 Baillargues, France
Nombre comercial / *Trade name*	:	ULTIMATRON FRANCE
Tipo / *Type*	:	DK164F/P
Variantes / *Variants*	:	DK164F/P, 164F/P, DK145i, *164F#%/P-&€
Categoría / *Category*	:	NRS-vr-1a
Potencia / *Power*	:	3.5 kW
Lugar y fecha de emisión del informe / *Place and date of report issuing*	:	L'Albornar, Santa Oliva (Tarragona), 13.10.2020

CONCLUSIONES / *CONCLUSIONS*: El motor ensayado CUMPLE con los requerimientos técnicos de la *RELACIONADO* 2016/1628/UE implementado por el Reglamento 2018/989/UE. Las características están detalladas en la documentación técnica adjunta. / *The engine tested FULFILS the technical requirements of Regulation 2016/1628/EU implemented by regulation 2018/989/EU. The characteristics are detailed in the attached technical documentation.*

Realizado / *Performed by*:

Qiang(johnny) Li
INGENIERO DE HOMOLOGACIONES
HOMOLOGATION ENGINEER

Vº. Bº. / *Revised by*:

Josep Masip Gomez
JEFE DE DEPARTAMENTO
DEPARTMENT MANAGER

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ANEXO AL INFORME DE ENSAYO / *ANNEX TO THE TEST REPORT*

1. Información General / *General Information*

1.1.	Fabricante / *Manufacturer*	: ULTIMATRON FRANCE
1.2.	Nombre comercial / *Trade name*	: ULTIMATRON FRANCE
1.3.	Nombre y dirección del fabricante / *Company name and address of manufacturer*	: ULTIMATRON FRANCE 286 Rue Charles Gide 34670 Baillargues, France
1.4.	Número de referencia de documentos de información /*Information documents reference number*	: DK164F/P
1.5.	Tipo de informe de ensayo / *Test report type*	: Ensayo primario/~~Ensayo adicional/Ensayo suplementario~~ / *Primary test* / ~~*Additional test* / *Supplementary test*~~
1.5.1	Descripción del objetivo del ensayo/ *Description of the purpose of the test*	: G2+Cat 1

2. Información general del motor ensayado / *General information of test engine*

2.1.	Tipo del motor/ familia de motores / *Engine type designation/ Engine family designation/FT*	: DK164F/P
2.2.	Número de serie del motor / *Engine identification number*	: 2008000006
2.3.	Categoría y subcategoría del motor / *Engine Category and subcategory*	:

~~NRE-v-1/NRE-v-2/NRE-v-3/NRE-v-4/NRE-v-5/NRE-v-6/NRE-v-7/NRE-c-1/NRE-c-2/NRE-c-3/ NRE-c-4/NRE-c-5/NRE-c-6/NRE-c-7/NRG-v-1/NRG-c-1/NRSh-v-1a/NRSh-v-1b~~/NRS-vr-1a/ ~~NRS-vr-1b/NRS-vi-1a/NRS-vi-1b/NRS-v-2a/NRS-v-2b/NRS-v-3/IWP-v-1/IWP-v-2/IWP-v-3/IWP-v-4/IWP-c-1/IWP-c-2/IWP-c-3/IWP-c-4/IWA-v-1/IWA-v-2/IWA-v-3/IWA-v-4/IWA-c-1/IWA-c-2/IWA-c-3/IWA-c-4/RLL-v-1/ RLL-C-1/RLR-v-1/RLR-C-1/SMB-v-1/ATS-v-1~~

3. Combustible de referencia utilizado para el ensayo / *Reference fuel(s) used for test (complete relevant subparagraph(s))*

3.1. Depresión en la entrada de aire / *Engine intake depression* : 5 kPa

3.2. Combustible para motores de ignición por chispa / *Liquid fuel for spark-ignition engines*

Marca / *Make*	: SINOPEC
Tipo / *Type*	: Petrol(E10)
Octanaje RON / *Octane number RON*	: 94.6
Octanaje MON / *Octane number MON*	: 85.2
Contenido de etanol / *Ethanol content (%)*	: 9.6

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Densidad a 15 ºC / *Density at 15 Deg.C(kg/m³)* : 746.2

3.3. Combustible para motores de ignición por compresión / *Liquid fuel for compression-ignition engines*

Marca / *Make*	: N/A
Tipo / *Type*	: N/A
Índice de cetano / *Cetane number*	: N/A
Contenido de Fame / *Fame content(%)*	: N/A
Densidad a 15 ºC / *Density at 15 Deg.C(kg/m³)*	: N/A

4. Lubricante / *Lubricant*

Marca / *Make(s)*	: Shell
Tipo / *Type(s)*	: SG
Viscosidad SAE / *SAE viscosity*	: 15W-40
Lubricante y combustible mezclados / *Lubricant and fuel are mixed*	: ~~yes~~ / no
Porcentaje de aceite en la mezcla / *Percentage of oil in mixture*	: N/A

El motor utiliza un aceite que cumple las prescripciones del fabricante del motor para su uso previsto. El fabricante utiliza lubricantes representativos de los disponibles comercialmente. /
The engine uses lubricating oil that meets the engine manufacturer's specifications for a particular engine and intended usage. Manufacturer uses engine lubricants representative of commercially available engine lubricants.

5. Velocidad del motor / *Engine speed*

5.1. Velocidad 100% (rpm) / *100% speed (rpm)* :4600

5.1.1. Velocidad del 100% determinada por / *100% speed determined by* : Declared rated speed / ~~Declared maximum test speed / Measured MTS~~

5.1.2. MTS ajustado si aplica (rpm) / *Adjusted MTS if applicable(rpm)* : N/A

5.2. Velocidad intermedia / *Intermediate speed* : N/A

5.2.1. Velocidad intermedia determinada por / *Intermediate speed determined by* : ~~Declared intermediate speed / Measured internediate speed / 60% of full speed/75% of full speed/85% of full speed/~~

5.3. Velocidad de ralentí / *Idle speed* :4100±200 rpm

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6. Potencia del motor */ Engine power*

6.1. Equipos accionados por el motor (si aplica)/ *Engine driven equipment (if applicable)*

NO PROCEDE /*NOT APPLICABLE*

6.1.1 Potencia absorbida a las velocidades indicadas por los elementos auxiliares necesarios para el funcionamiento del motor que no pueden ser incorporados para el ensayo (especificados por el fabricante) / *Power absorbed at indicated engine speeds by necessary auxiliaries for engine operation that cannot be fitted for the test(as specified by the manufacuter) to be stated in Table1:*

Tabla 1. Potencia absorbida por elementos auxiliares / *Table 1. Power absorbed by engine auxiliaries*

Tipo y detalles de identificación del element auxiliary / *Auxiliary type and identifying details*	Potencia absorbida por elemento auxiliar (kW) a la velocidad indicada del motor / *Power absorbed by engine auxiliary(kW) at indicated engine speed (complete relevant columns)*						
	Ralentí / *Idle*	63%	80%	91%	Intermedia / *Intermediate*	Potencia máxima / *Max. power*	100%
--	--	--	--	--	--	--	--
--		--	--	--	--	--	--
--		--	--	--	--	--	--
Total($P_{f,i}$)	--	--	--	--	--	--	--

6.1.2. Potencia absorbida a las velocidades indicadas por los elementos auxiliares relacionados con el funcionamiento de la maquinaria “non-road” que no pueden ser retirados para el ensayo (especificados por el fabricante)/ *Power absorbed at indicated engine speeds by auxiliaries linked with the operation of the non-road mobile machinery that cannot be removed for the test (as specified by the manufacuter) to be stated in Table2:*

Tabla 2. Potencia absorbida por elementos auxiliaries en máquinas móviles no de carretera / *Table 2. Power absorbed by non-road mobile machinery auxiliaries*

Tipo y detalles de identificación del element auxiliary / *Auxiliary type and identifying details*	Potencia absorbida por elemento auxiliar (kW) a la velocidad indicada del motor / *Power absorbed by engine auxiliary(kW) atindicated engine speed (complete relevant columns)*						
	Ralentí / *Idle*	63%	80%	91%	Intermedia / *Intermediate*	Potencia máxima / *Max. power*	100%
--	--	--	--	--	--	--	--
--		--	--	--	--	--	--
--		--	--	--	--	--	--
Total($P_{r,i}$)	--	--	--	--	--	--	--

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6.2. Potencia neta del motor / *Engine net power to be stated in Table 3:*

Tabla 3. Potencia neta del motor / *Table 3 Engine net power*

Condición / *Condition*	Potencia neta (kW) a la velocidad indicada del motor (columnas relevantes completas) / *Engine net power (kW) at indicated engine speed(complete relevant columns)*		
	Intermedia / *Intermediate*	Potencia máxima / *Max. power*	100 %
Potencia de referencia medida a la velocidad de ensayo especificada / *Reference power measured at specified test speed* ($P_{m,i}$)	--	--	3.85
Potencia auxiliary total de la Tabla 1 / *Total auxiliary power from Table 1* ($P_{f,i}$)	--	--	--
Potencia auxiliary total de la Tabla 2 /*Total auxiliary power from Table 2* ($P_{r,i}$)	--	--	--
Potencia neta del motor / *Engine net power* $Pi = P_{m,I} – P_{f,i} + P_{r,i}$	--	--	3.85

7. Condiciones del ensayo / *Test conditions*

7.1. f_a dentro del rango 0,93 a 1,07/ f_a *within range 0,93 to 1,07* : Yes/~~No~~

7.1.1. Si f_a no está dentro del rango, indicar la altura y la presión atmosférica seca del laboratorio de ensayo / *If f_a is not within specified range state altitude of test facility and dry atmospheric pressure*: ---

7.2. Rango de temperatura de la admisión /
Applicable intake air temperature range: 20 to 30/~~0 to 5(snow throwers only)/ 5 to 15(snowmobiles)/ 20 to 35(NRE greater than 560 kW only)~~

8. Información sobre el ensayo NRSC / *Information concerning the conduct of NRSC test*

8.1. Ciclo (marcar ciclo usado con una X) / *Cycle (mark cycle used with X) to be stated in Table 4:*

Tabla 4. Ciclo de ensayo NRSC / *Table 4. NRSC test cycle*

Ciclo / *Cycle*	C1	C2	D2	E2	E3	F	G1	G2	G3	H
Modo discreto / *Discrete mode*	--	--	--	--	--	--	--	X	--	--
RMC	--	--	--	--	--	--	--	--	N/A	--

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8.2. Configuración del dinamómetro (kW) / *Dynamometer setting (kW) to be stated in Table 5*:

Tabla 5. Ajuste del dinamómetro / *Table 5. Dynamometer setting*

% de carga en el punto o % de potencia nominal (según aplique) / *% Load at point or % of rated power (as applicable)*	Ajuste del dinamómetro (kW) a la velocidad indicada después del ajuste de potencia auxiliar[1] (columnas relevantes completas) / *Dynamometer setting (kW) at indicated engine speed after adjustment for auxiliary power [1] (complete relevant columns)*					
	Ralentí / *Idle*	63 %	80 %	91 %	Intermedia / *Intermediate*	100 %
0%	0	--	--	--	--	--
10%	--	--	--	--	--	0.39
25%	--	--	--	--	--	0.96
50%	--	--	--	--	--	1.93
75%	--	--	--	--	--	2.89
100%	--	--	--	--	--	3.85

El ajuste del dinamómetro se determinará mediante el procedimiento indicado en el punto 7.7.1.3. del Anexo VI del Reglamento Delegado (UE) 2018/989. La potencia auxiliary en ese punto se determinará mediante los valores totals mostrados en las Tablas 1 y 2 de este Apéndice. / *The dynamometer setting shall be determined using the procedure set out in point 7.7.1.3 of Annex VI to Delegated Regulation (EU) 2018/989. The auxiliary power in that point shall be determined using the total values set out in Tables 1 and 2 of this Appendix.*

8.3. Resultados de emisiones NRSC / *NRSC Emissions results*

8.3.1. Factor de deterioro / *Deterioration Factor (DF)* : Calculado/~~asignado~~ / *Calculated/~~assigned~~*

8.3.2. Valores DF y resultados de emisiones en peso / *DF values and the cycle weighted emissions results to be stated in Table 6*:
Nota: En el caso de que se ejecute un NRSC de modo discreto donde los factores K_{ru} o K_{rd} sean establecidos para modos individuales, una table mostrando cada modo y los K_{ru} o K_{rd} aplicados debe reemplazar la table mostrada. / *Note: In the event that a discrete mode NRSC is run where the K_{ru} or K_{rd} factors have been established for individual modes then a table showing each mode and the applied K_{ru} or K_{rd} should replace the shown table*

Tabla 6. Valores DF del ciclo NRSC y resultados de emisiones ponderadas / Table 6. NRSC cycle DF values and weighted emissions results

DF mult/~~add~~	CO	HC	NOx	HC+NOx	PM	PN
	1.00	1.00	1.07	1.02	N/A	N/A
Emisiones / *Emissions*	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	HC+NOx (g/kWh)	PM (g/kWh)	PN (#/kWh)
Resultado de ensayo con/sin regeneración / *Test result ~~with~~/without regeneration*	493.63	6.49	1.75	8.24	--	--
k_{ru}/k_{rd} mult/add	--	--	--	--	--	--
Resultado de ensayo con factores de ajuste de regeneración no frecuentes / *Test result with infrequent regeneration adjustment factors (IRAFs)*	--	--	--	--	--	--
Resultado final del ensayo con DF / *Final test result with DF*	468.75	6.50	1.88	8.37	--	--
Valor límite /*Limit Value*	610.00	--	--	10.00	--	--

8.3.3. Peso CO_2 / *Cycle weighted CO_2* (g/kWh) : 884.43

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8.3.4. Peso NH_3 / *Cycle weighted NH_3 (ppm)* : N/A

8.4. Puntos adicionales medidos en el área de control (si aplica) / *Additional control area test points (if applicable) to be stated in Table 7:*

Tabla 7. Puntos adicionales de ensayo del área de control / *Table 7. Additional control area test points*

Emisiones en punto de ensayo / *Emissions at test point*	Velocidad del motor / *Engine Speed*	Carga / *Load* (%)	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	HC+NOx (g/kWh)	PM (g/kWh)	PN (#/kWh)
Resultado ensayo 1 / *Test result 1*	--	--	--	--	--	--	--	--
Resultado ensayo 2 / *Test result 2*	--	--	--	--	--	--	--	--
Resultado ensayo 3 / *Test result 3*	--	--	--	--	--	--	--	--

8.5. Sistemas de muestreo usados para el ensayo NRSC / *Sampling systems used for the NRSC test* : HORIBA CVS-7100

8.5.1. Emisiones gaseosas / *Gaseous emissions* : HORIBA MEXA-7200D

8.5.2. Masa de partículas / PM : N/A

8.5.2.1. Método: simple/multi filtro / *Method: single/multiple filter* : N/A

8.5.3. Número de partículas / *Particle number* : N/A

9. Información sobre el ensayo NRTC (si aplica) /*Information concerning the conduct of the NRTC test (if applicable)*

NO PROCEDE /*NOT APPLICABLE*

9.1. Ciclo (marcar ciclo con una X) / *Cycle (mark cycle with X) to be stated in Table 8*:

Tabla 8. Ciclo de ensayo NRTC / *Table 8. NRTC test cycle*

NRTC	--
LSI-NRTC	--

9.1.1. Resultados de emisiones NRTC / *NRTC emissions results* : N/A

9.1.2. Factor de deterioro / *Deterioration Factor (DF)* : ~~Calculado/fijo / *Calculated/fixed*~~

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9.1.3. Valores DF y resultados de emisiones / *DF values and the emissions results to be stated in Table 9 or in Table 10, as applicable (NRTC or LSI-NRTC)*:

Tabla 9. Valores DF y resultados de emisiones para NRTC / *Table 9. DF values and the emissions results for NRTC*

DF mult/add	CO	HC	NOx	HC+NOx	PM	PN
	--	--	--	--	--	--
Emisiones / *Emissions*	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	HC+NOx (g/kWh)	PM (g/kWh)	PN (#/kWh)
Arranque en frío / Cold start	--	--	--	--	--	--
Arranque en caliente con/sin regeneración / *Hot start test result with/ without regeneration*	--	--	--	--	--	--
Resultado ponderado del ensayo / *Weighted test result*	--	--	--	--	--	--
k_{ru}/k_{rd} mult/add	--	--	--	--	--	--
Resultado ponderado del ensayo con IRAF / *Weighted test result with IRAFs*	--	--	--	--	--	--
Resultado final con DF / *Final test result with DF*	--	--	--	--	--	--

9.1.4. CO_2 del ciclo caliente / *Hot cycle* CO_2 (g/kWh) : N/A

9.1.5. Peso de NH_3 / *Cycle weighted* NH_3 (ppm) : N/A

9.1.6. Ciclo de trabajo para el test de arranque en caliente (kWh)/ *Cycle work for hot start test* (kWh) : N/A

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9.1.7. Ciclo de CO_2 para ciclo caliente / *Cycle CO_2 for hot start test* (g): N/A

Tabla 10. Valores DF y resultados de emisiones para NRTC-LSI / Table 10. DF values and the emissions results for NRTC-LSI

DF mult/add	CO	HC	NOx	HC+NOx	PM	PN
	--	--	--	--	--	--
Emisiones / *Emissions*	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	HC+NOx (g/kWh)	PM (g/kWh)	PN (#/kWh)
Resultado de ensayo con/sin regeneración / *Test result with/without regeneration*	--	--	--	--	--	--
k_{ru}/k_{rd} mult/add	--	--	--	--	--	--
Resultado del ensayo con IRAF / *Test result with IRAFs*	--	--	--	--	--	--
Resultado final con DF / *Final test result with DF*	--	--	--	--	--	--

9.2. CO_2 del ciclo / *Cycle CO_2* (g/kWh) : N/A

9.3. NH_3 del ciclo/ *Cycle NH_3* (ppm) : N/A

9.3.1. Trabajo del ciclo / *Cycle work* (kWh) : N/A

9.3.2. Peso de CO_2 / *Cycle CO_2* (g) : N/A

9.4. Sistema de muestreo para el ensayo NRTC / *Sampling system used for the NRTC test* : N/A

9.5. Emisiones gasesoas/ *Gaseous emissions* : N/A

9.6. Masa de partículas / *PM* : N/A

9.6.1. Método / *Method* : ~~Filtro simple/múltiple / *Single/multiple filter*~~

9.7. Número de partículas / *Particle number* : N/A

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10. RESULTADOS FINALES DE EMISIONES / *FINAL EMISSIONS RESULTS*

10.1. Resultados del ciclo de emisiones / *Cycle emissions results to be stated in Table 11.*

Tabla 11. Resultados de emisiones finales / *Table 11. Final emissions results*

Emisiones / Emissions	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	HC+NOx (g/kWh)	PM (g/kWh)	PN (#/kWh)	Test Cycle (1)
Resultado final de NRSC con DF / *NRSC final result with DF* (2).	468.75	6.50	1.88	8.37	--	--	G2
Resultado final de NRTC con DF / *NRTC Final test result with DF* (3)	--	--	--	--	--	--	--

10.2. Resultado CO_2 / *CO_2 result* (4) : 884.43 g/kWh

Notas explicatorias del Apéndice 1 / *Explanatory notes to Appendix 1:*
(Los marcadores, notas a pie de página y notas explicativas no se incluirán en el informe de ensayo) / *(Footnote markers, footnotes and explanatory notes not to be stated on the test report)*
(1) Para NRSC, el ciclo indicado en el punto 9.1; para NRTC, el ciclo indicado en el punto 10.1. / *For NRSC note the cycle indicated in point 9.1; for NRTC note cycle indicated in point 10.1.*
(2) Copiar los resultados de la Tabla 9.3.2. / *Copy the results from Table 9.3.2.*
(3) Copiar los resultados de la table 10.2.2. o 10.3.6., según aplique. / *Copy the results from Table 10.2.2 or 10.3.6, as applicable*
(4) Para un tipo o familia de motores que se haya ensayado tanto en NRTC como en NRSC, indicar los valores de emisiones de CO2 en ciclo caliente de NRTC anotados en el punto 10.3. o de NRTC-LSI anotados en el punto 10.4. Para un motor ensayado únicamente en NRSC indicar los valores de emisiones de CO2 anotados en ese ciclo a partir del punto 9.3.3. / *For an engine type or engine family that is tested on both the NRTC and NRSC, indicate the hot cycle CO2 emissions values from the NRTC noted in point 10.3 or the NRTC-LSI noted in point 10.4. For an engine only tested on an NRSC indicate the CO2 emissions values given in that cycle from point 9.3.3.*

Lugar del ensayo / *Test place* : Nanjing Depurate Catalyst Co., Ltd. (Nanjing, China)
Fecha del ensayo / *Test date* : 02.09.2020 a/to 14.09.2020

Qiang(johnny) Li
INGENIERO DE HOMOLOGACIONES
HOMOLOGATION ENGINEER

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DOCUMENTACIÓN TÉCNICA /
TECHNICAL DOCUMENTATION

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INFORMATION DOCUMENT

Relating to type-approval and referring to measures against the emission of gaseous and particulate pollutants from internal combustion engine to be installed in non –road mobile machinery

According to Regulation (EU) 2016/1628

Part A :

1. GENERAL INFORMATION

1.1	Make (trade name(s) of manufacturer)	:	ULTIMATRON FRANCE
1.2	Commercial name(s) (if applicable)	:	Not applicable
1.3	Company name and address of manufacturer	:	286 Rue Charles Gide 34670 Baillargues, France
1.4	Name and address of manufacturer's authorised representative (if any)	:	TUV-WORLD ECC CERTIFICATION SERVICE SL PASEO DE LA CASTELLANA, NUM. 114 PLANTA 6, PUERTA 6 28046 Madrid Spain
1.5	Name(s) and address(es) of assembly/manufacture plant(s)	:	ULTIMATRON FRANCE 286 Rue Charles Gide 34670 Baillargues, France
1.6	~~Engine type designation/~~engine family designation~~/FT~~	:	DK164F/P
1.6.1	Variant(s)		DK164F/P, 164F/P, DK145i, *164F#%/P-&€ The designations details refer to Appendix-1.
1.7	Category and sub-category of the engine type~~/engine family~~	:	NRS-vr-1a
1.8	Emissions durability period category	:	Cat 1
1.9	Emissions stage	:	V
1.10	In case of NRS <19 kW only, engine family consisting exclusively of engine types for snow throwers	:	No
1.11	Reference power is	:	Maximum net power

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1.12	Primary NRSC test cycle	:	G2
1.12.1	In case of variable speed IWP category only, Additional propulsion test cycle	:	Not applied
1.12.2	In case of IWP category only, additional auxiliary NRSC test cycle	:	Not applied
1.13	Transient test cycle	:	Not applicable
1.14	Restrictions on use (if applicable)	:	Not applicable

Part B

2. COMMON DESIGN PARAMETERS OF ENGINE FAMILY(1)

2.1	Combustion Cycle	:	Four stroke cycle
2.2	Ignition Type	:	Spark ignition
2.3	**Configuration of the cylinders**		
2.3.1	Position of the cylinders in the block	:	Single
2.3.2	Bore centre to centre dimension (mm)	:	Not applicable
2.4.	**Combustion chamber type/design**		
2.4.1	Open chamber/divided chamber/ other(specify)	:	Refer to drawing No. DK164F/P-02
2.4.2	Valve and porting configuration	:	Refer to drawing No. DK164F/P-02
2.4.3	Number of valves per cylinder	:	2
2.5	Range of individual cylinder displacement (cm^3)	:	See 3.6.4. Part C
2.6	Main Cooling medium	:	Air
2.7	Method of air aspiration	:	Naturally aspirated
2.8.	**Fuel**		
2.8.1	Fuel Type	:	Petrol (E10)
2.8.1.1	Sub Fuel type (Natural gas/Biomethane only)	:	Not applicable
2.8.2	Fuelling arrangement	:	Liquid-fuel only

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2.8.3.	List of additional fuels, fuel mixtures or emulsions suitable for use by the engine, as declared by the manufacturer in accordance with point 1.2.3 of Annex I to Delegated Regulation (EU) 2018/989 (provide reference to recognised standard or specification)	:	N/A
2.8.4	Lubricant added to fuel	:	No
2.8.4.1	Specification	:	Not applicable
2.8.4.2	Ratio of fuel to oil	:	Not applicable
2.8.5	Fuel supply type: Pump (high pressure) line and injector/in-line pump or distributor pump/Unit injector/Common rail/Carburetor)/port injector/direct injector/Mixing unit/other(specify)	:	Carburetor
2.9	Engine management systems	:	Mechanical
2.10	**Miscellaneous devices**		
2.10.1	Exhaust gas recirculation	:	No (if yes, complete section 3.10.1. and provide a schematic diagram of the location and order of the devices)
2.10.2	Water injection	:	No (if yes, complete section 3.10.2. and provide a schematic diagram of the location and order of the devices)
2.10.3	Air injection	:	No (if yes, complete section 3.10.3. and provide a schematic diagram of the location and order of the devices)
2.10.4.	Others: Yes/No (if yes, complete section 3.10.4 and provide a schematic diagram of the location and order of the devices)	:	No
2.11	Exhaust after-treatment system	:	No (if yes provide a schematic diagram of the location and order of the devices)
2.11.1	Oxidation catalyst	:	No (if yes, complete section 3.11.2.)
2.11.2	DeNOx system with selective reduction of NOx (addition of reducing agent)	:	No (if yes, complete section 3.11.3.)
2.11.3	Other DeNOx systems	:	No (if yes, complete section 3.11.3.)

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2.11.4	Three-way catalyst combining oxidation and NOx reduction	:	No (if yes, complete section 3.11.3.)
2.11.5	Particulate trap with passive regeneration	:	No (if yes, complete section 3.11.4.)
2.11.5.1.	Wall-flow/non-wall-flow	:	Not applicable
2.11.6	Particulate trap with active regeneration	:	No (if yes, complete section 3.11.4.)
2.11.6.1.	Wall-flow/non-wall-flow	:	Not applicable
2.11.7	Other particulate traps	:	No (if yes, complete section 3.11.4.)
2.11.8	Other after-treatment devices (specify)	:	No (if yes, complete section 3.11.5.)
2.11.9.	Other devices or features that have a strong influence on emissions (if yes, complete section 3.11.7.)	:	~~Yes~~/No

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Part C

3 ESSENTIAL CHARACTERISTICS OF THE ENGINE TYPE(S)

Item Number	Item Description	Test	Installation	Homologation	Parent engine/engine type	Engine types within the engine family (if applicable)			Explanatory notes (not included in document)
						Type 2	Type 3	Type 4	
3.1	**Engine Identification**								
3.1.1	Engine type designation			X	DK164F/P	164F/P, DK145i, *164F#%/P-&€			
3.1.2	Engine type designation shown on engine marking: yes/no			X	Yes	Yes			
3.1.3	Location of the statutory marking			X	Crankcase and/or Shroud and/or Fuel tank	Crankcase and/or Shroud and/or Fuel tank			
3.1.4	Method of attachment of the statutory marking			X	Engrave and/or Paste	Engrave and/or Paste			
3.1.5	Drawings of the location of the engine identification number (complete example with dimensions)			X	Refer to drawing No. DK164F/P-01	Refer to drawing No. DK164F/P-01			
3.2	**Performance Parameters**								
3.2.1	Declared rated speed (rpm)	X			4600	4600			
3.2.1.1	Fuel delivery/stroke (mm3) for diesel engine, fuel flow (g/h) for other engines, at rated net power			X	1320	1320			
3.2.1.2	Declared rated net power (kW)	X			3.5	3.5			
3.2.2	Maximum power speed(rpm)			X	4600	4600			If differ from rated speed
3.2.2.1	Fuel delivery/stroke (mm3) for diesel engine, fuel flow (g/h) for other engines, at maximum net power			X	1320	1320			
3.2.2.2	Maximum net power (kW)	X		X	3.5	3.5			If different from rated speed

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3.2.3	Declared maximum torque speed (rpm)	X			2800	2800			If applicable
3.2.3.1	Fuel delivery/stroke (mm3) for diesel engine, fuel flow (g/h) for other engines, at maximum torque speed			X	963	963			
3.2.3.2	Declared maximum torque (Nm)	X			8.5	8.5			If applicable
3.2.4	Declared 100% test speed	X			4600	4600			If applicable
3.2.5	Declared Intermediate test speed	X			Not applicable	Not applicable			If applicable
3.2.6	Idle speed (rpm)	X			4100±200	4100±200			If applicable
3.2.7	Maximum no load speed (rpm)	X			4150	4150			If applicable
3.2.8	Declared minimum torque (Nm)	X			0	0			If applicable
3.3	**Run-in procedure**								Optional at choice of manufacturer
3.3.1	Run in time	X			4h	4h			
3.3.2	Run in cycle	X			G2	G2			
3.4	**Engine test**								
3.4.1	Specific fixture required: Yes/No	X			No	No			For NRSh only
3.4.1.1	Engine fixture for test bench and power transmission shaft system to the dyno rotating system description, photograph and/or drawing	X			Not applicable	Not applicable			
3.4.2	Exhaust mixing chamber permitted by manufacturer: Yes/No	X			No	No			For NR only
3.4.2.1	exhaust mixing chamber description, photograph and/or drawing	X			Not applicable	Not applicable			If applicable
3.4.3	Manufacturers chosen NRSC: RMC/Discrete mode	X			Discrete mode	Discrete mode			
3.4.4	Additional NRSC: E2/D2/C1	X			Not applicable	Not applicable			Only where additional cycles are declared in entries

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									1.12.1. or 1.12.2. of Part A
3.4.5	Number of pre-conditioning cycles prior to transient test	X			Not applicable	Not applicable			If applicable, minimum 1.0
3.4.6.	Pre-conditioning for RMC NRSC: Steady-state operation/RMC	X			Not applicable	Not applicable			If applicable, minimum 0.5
3.4.6.1.	In case of RMC, number of pre-conditioning RMC prior to RMC NRSC test	X			Not applicable	Not applicable			
3.5	**Lubrication system**								
3.5.1	*Lubricant temperature*								If applicable
3.5.1.1	Minimum (deg. C)	X			-5	-5			
3.5.1.2	Maximum (deg. C)	X			150	150			
3.6	**Combustion Cylinder**								
3.6.1	Bore(mm)			X	64	64			
3.6.2	Stroke(mm)			X	45	45			
3.6.3	Number of cylinders			X	1	1			
3.6.4	Engine displacement(cm^3):			X	145	145			
3.6.5	Swept volume per cylinder as % of parent engine:			X	100%	100%			If engine family
3.6.6	Volumetric compression ratio			X	8.5:1	8.5:1			Specify tolerance
3.6.7	Combustion system description			X	Not applicable	Not applicable			
3.6.8	Drawings of combustion chamber and piston crown			X	Refer to drawing No. DK164F/P-02 & No. DK164F/P-03	Refer to drawing No. DK164F/P-02 & No. DK164F/P-03			
3.6.9	Minimum cross sectional area of inlet and outlet ports (mm^2)			X	Inlet: 320 Outlet: 228	Inlet: 320 Outlet: 228			
3.6.10	*Valve timing*								
3.6.10.1	Maximum lift and angles of opening and closing in relation to dead centre or equivalent data			X	Refer to drawing No. DK164F/P-05	Refer to drawing No. DK164F/P-05			
3.6.10.2	Reference and/or setting range			X	Refer to drawing No. DK164F/P-05	Refer to drawing No. DK164F/P-05			
3.6.10.3	Variable valve timing system: Yes/No			X	No	No			If applicable and where

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									intake and/or exhaust
3.6.10.3.1	Type: continuous/(on/off)			X	Not applicable	Not applicable			
3.6.10.3.2	Cam phase shift angle			X	Not applicable	Not applicable			
3.6.11	*Porting configuration*								2-stroke only, if applicable
3.6.11.1	position, size and number			X	Not applicable	Not applicable			
3.7	**Cooling system**								Complete relevant section
3.7.1	*Liquid cooling*								
3.7.1.1	Nature of liquid			X	Not applicable	Not applicable			
3.7.1.2	Circulating pumps: Yes/No			X	No	No			
3.7.1.2.1	type(s)			X	Not applicable	Not applicable			
3.7.1.2.2	Drive ratio(s)			X	Not applicable	Not applicable			If applicable
3.7.1.3	Minimum coolant temperature at outlet (deg. C)	X			Not applicable	Not applicable			
3.7.1.4	Maximum coolant temperature at outlet (deg. C)	X			Not applicable	Not applicable			
3.7.2	*Air cooling*								
3.7.2.1	fan: Yes/No			X	Yes	Yes			
3.7.2.1.1	type(s)			X	Not applicable	Not applicable			
3.7.2.1.2	Drive ratio(s)			X	1:1	1:1			If applicab
3.7.2.2	Maximum temperature at reference point (deg. C)			X	250	250			
3.7.2.2.1	Reference point location			X	Spark plug washer	Spark plug washer			
3.8	**Aspiration**								
3.8.1	Maximum allowable intake depression at 100% engine speed and at 100% load (kPa)	X	X		5	5			
3.8.1.1	With clean air cleaner	X	X		5	5			
3.8.1.2	With dirty air cleaner	X	X		5	5			
3.8.1	Location, of measurement	X	X		Thermal baffle	Thermal baffle			

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.3									
3.8.2	Pressure charger(s): Yes/No			X	No	No			
3.8.2 .1	Type(s)			X	Not applicable	Not applicable			
3.8.2 .2	Description and schematic diagram of the system (e.g. maximum charge pressure, waste gate, VGT, Twin turbo, etc.)			X	Not applicable	Not applicable			
3.8.3	Charge air cooler: Yes/No	X	X		No	No			
3.8.3 .1	Type: air-air/air-water/other(specify)		X		Not applicable	Not applicable			
3.8.3 .2	Maximum charge air cooler outlet temperature at 100% speed and 100% load (deg. C)	X	X		Not applicable	Not applicable			
3.8.3 .3.	Maximum allowable pressure drop across charge cooler at 100% engine speed and at 100% load (kPa):	X	X		Not applicable	Not applicable			
3.8.4	Intake throttle valve: Yes/No			X	No	No			
3.8.5	Device for recycling crankcase gases: Yes/No			X	No	No			
3.8.5 .1	If yes, description and drawings				Not applicable	Not applicable			
3.8.5 .2	If no, compliance with paragraph 6.10 of Annex VI to Commission Delegated Regulation (EU) (EU) 2018/989 on technical and general requirements: Yes/No	X			Not applicable	Not applicable			
3.8.6	*Inlet path*								*2-stroke NRS NRSh c*
3.8.6 .1	Description of inlet path, (with drawings, photographs and/or part numbers)			X	Refer to drawing No. DK164F/P-08	Refer to drawing No. DK164F/P-08			
3.8.7 .	*Air filter*			X					*2-stroke, NRS and NRSh only*
3.8.7 .1	Type			X	164F	164F			
3.8.8 .	*Intake air-silencer*				Not applicable	Not applicable			*2-stroke, NRS and NRSh only*
3.8.8	Type			X	Not applicable	Not applicable			

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.1									
3.9	**Exhaust system**								
3.9.1	Description of the exhaust system (with drawings, photos and/or part numbers as required)			X	Refer to drawing No. DK164F/P-04	Refer to drawing No. DK164F/P-04			*2-stroke, NRS and NRSh only*
3.9.2	Maximum exhaust temperature (deg. C)	X			327	327			
3.9.3	Maximum permissible exhaust backpressure at 100% engine speed and at 100% load (kPa)	X	X		6	6			Note(2)
3.9.3.1	Location of measurement	X	X		The first chamber of Muffler	The first chamber of Muffler			
3.9.4	Exhaust backpressure at loading level specified by manufacturer for variable restriction after-treatment at start of test (kPa)	X			Not applicable	Not applicable			
3.9.4.1	Location and speed/load conditions	X			Not applicable	Not applicable			
3.9.5	Exhaust throttle valve: Yes/No			X	No	No			
3.10	**Miscellaneous devices**								
3.10.1	*Exhaust gas recirculation*								
3.10.1.1.	Characteristics: cooled/uncooled, high pressure/low pressure/other (specify):			X	Not applicable	Not applicable			
3.10.2	*Water injection*				Not applicable	Not applicable			
3.10.2.1	Operation principle			X	Not applicable	Not applicable			
3.10.3.	Air injection				Not applicable	Not applicable			
3.10.3.1.	Operation principle:			X	Not applicable	Not applicable			
3.10.4.	Other(s)				Not applicable	Not applicable			
3.10.4.1.	Type(s):			X	Not applicable	Not applicable			
3.11	**Exhaust after-treatment system**								
3.11.1	*Location*		X		Not applicable	Not applicable			
3.11.1.1	Place(s) and maximum/minimum distance(s) from engine to first after-treatment device		X		Not applicable	Not applicable			
3.11.1.2	Maximum temperature drop from exhaust or	X	X		Not applicable	Not applicable			

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	turbine outlet to first after-treatment device (deg. C) if stated								
3.11.1.2.1	Test conditions for measurement	X	X		Not applicable	Not applicable			
3.11.1.3.	Minimum temperature at inlet to first after-treatment device (deg. C), if stated:	X	X		Not applicable	Not applicable			
3.11.1.3.1.	Test conditions for measurement:	X	X						
3.11.2	*Oxidation catalyst*				Not applicable	Not applicable			
3.11.2.1	Number of catalytic converters and elements			X	Not applicable	Not applicable			
3.11.2.2	Dimensions and volume of the catalytic converter(s)			X	Not applicable	Not applicable			
3.11.2.3	Total charge of precious metals			X	Not applicable	Not applicable			
3.11.2.4	Relative concentration of each compound			X	Not applicable	Not applicable			
3.11.2.5	Substrate (structure and material)			X	Not applicable	Not applicable			
3.11.2.6	Cell density			X	Not applicable	Not applicable			
3.11.2.7	Type of casing for the catalytic converter(s)			X	Not applicable	Not applicable			
3.11.3	*Catalytic exhaust gas after treatment system for NOx or three way catalyst*								
3.11.3.1	Type			X	Not applicable	Not applicable			
3.11.3.2	Number of catalytic converters and elements			X	Not applicable	Not applicable			
3.11.3.3	Type of catalytic action			X	Not applicable	Not applicable			
3.11.3.4	Dimensions and volume of the catalytic converter(s)			X	Not applicable	Not applicable			
3.11.3.5	Total charge of precious metals(mg)			X	Not applicable	Not applicable			
3.11.3.6	Relative concentration of each compound			X	Not applicable	Not applicable			
3.11.3.7	Substrate (structure and material)			X	Not applicable	Not applicable			
3.11.3.8	Cell density			X	Not applicable	Not applicable			
3.11.3.9	Type of casing for the catalytic converter(s)			X	Not applicable	Not applicable			
3.11.3.10	Method of regeneration	X		X	Not applicable	Not applicable			If applicable

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3.11.3.10.1	Infrequent regeneration: Yes/No				Not applicable	Not applicable			If yes, complete section 3.11.6
3.11.3.11	Normal operating temperature range (deg. C)	X	X		Not applicable	Not applicable			
3.11.3.12	Consumable reagent: Yes/No			X	Not applicable	Not applicable			
3.11.3.12.1	Type and concentration of reagent needed for catalytic action			X	Not applicable	Not applicable			
3.11.3.12.2	Lowest concentration of the active ingredient present in the reagent that does not activate warning system (CD_{min}) (%vol)			X	Not applicable	Not applicable			
3.11.3.12.3	Normal operational temperature range of reagent		X		Not applicable	Not applicable			
3.11.3.12.4	International standard		X	X	Not applicable	Not applicable			If applicable
3.11.3.13	NOx sensor(s): Yes/No			X	Not applicable	Not applicable			
3.11.3.13.1	Type			X	Not applicable	Not applicable			
3.11.3.13.2	Location(s)			X	Not applicable	Not applicable			
3.11.3.14	Oxygen sensor(s): Yes/No			X	Not applicable	Not applicable			
3.11.3.14.1	Type			X	Not applicable	Not applicable			
3.11.3.14.2	Location(s)			X	Not applicable	Not applicable			
3.11.4.	*Particulate trap*				Not applicable	Not applicable			
3.11.4.1	Type of filtration: through flow/partial flow/wall flow/other (specify)			X	Not applicable	Not applicable			
3.11.4.2	Type			X	Not applicable	Not applicable			
3.11.4.3	Dimensions and capacity of the particulate trap			X	Not applicable	Not applicable			
3.11.4.4	Location place(s) and maximum and minimum distance(s) from engine		X		Not applicable	Not applicable			
3.11.4.5	Method or system of regeneration, description			X	Not applicable	Not applicable			

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	and/or drawing								
3.11.4.5.1	Infrequent regeneration: Yes/No			X	Not applicable	Not applicable			If yes, complete section 3.11.6.
3.11.4.5.2	Minimum exhaust gas temperature for initiating regeneration procedure (deg. C)			X	Not applicable	Not applicable			
3.11.4.6	Catalytic coating: Yes/No			X	Not applicable	Not applicable			
3.11.4.6.1.	Type of catalytic action:			X	Not applicable	Not applicable			
3.11.4.7	Fuel borne catalyst (FBC): Yes/No			X	Not applicable	Not applicable			
3.11.4.8	Normal operating temperature range (deg. C)			X	Not applicable	Not applicable			
3.11.4.9	Normal operating pressure range (kPa)			X	Not applicable	Not applicable			
3.11.4.10	Storage capacity soot/ash [g]			X	Not applicable	Not applicable			
3.11.5	*Other systems*								
3.11.5.1	Description and operation			X	Not applicable	Not applicable			
3.11.6	*Infrequent Regeneration*								
3.11.6.1	Number of cycles with regeneration			X	Not applicable	Not applicable			
3.11.6.2	Number of cycles without regeneration			X	Not applicable	Not applicable			
3.11.7.	Other device(s) or feature(s)								
3.11.7.1.	Type(s):			X	Not applicable	Not applicable			
3.12	**Fuel feed for diesel or, where applicable, dual fuel engines**								
3.12.1	*Feed pump*								
3.12.1.1	Pressure (kPa) or characteristic diagram			X	Not applicable	Not applicable			
3.12.2	*Injection system*								
3.12.2.1	Pump								
3.12.2.1.1	Type(s)			X	Not applicable	Not applicable			
3.12.2.1.2	Rated pump speed (rpm)			X	Not applicable	Not applicable			

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3.12.2.1.3	mm^3 per stroke or cycle at full injection at rated pump speed			X	Not applicable	Not applicable			Specify tolerance
3.12.2.1.4	Torque peak pump speed (rpm)			X	Not applicable	Not applicable			
3.12.2.1.5	mm^3 per stroke or cycle at full injection at torque peak pump speed			X	Not applicable	Not applicable			Specify tolerance
3.12.2.1.6	Characteristic diagram			X	Not applicable	Not applicable			As alternative to entries 3.12.2.1.1 to 3.12.2.1.5
3.12.2.1.7	Method used: on engine/on pump bench			X	Not applicable	Not applicable			
3.12.2.2	*Injection timing*								
3.12.2.2.1	Injection timing curve			X	Not applicable	Not applicable			Specify tolerance, if applicable
3.12.2.2.2	Static Timing			X	Not applicable	Not applicable			Specify tolerance
3.12.2.3	*Injection piping*								
3.12.2.3.1	Length(s) (mm)			X	Not applicable	Not applicable			
3.12.2.3.2	Internal diameter (mm)			X	Not applicable	Not applicable			
3.12.2.4	Common rail: Yes/No			X	Not applicable	Not applicable			
3.12.2.4.1.	Type			X	Not applicable	Not applicable			
3.12.3	*Injector(s)*								
3.12.3.1	Type(s)			X	Not applicable	Not applicable			
3.12.3.2	Opening pressure (kPa)			X	Not applicable	Not applicable			Specify tolerance
3.12.4	*Electronic control unit (ECU): Yes/No*			X	Not applicable	Not applicable			
3.12.4.1	Type(s)			X	Not applicable	Not applicable			
3.12.4.2	Software calibration number(s)			X	Not applicable	Not applicable			
3.12.4.3	Communication standard(s) for access to data stream information: ISO 27145 with ISO 15765-4 (CANbased)/ ISO 27145 with ISO 13400 (TCP/IPbased)/	X		X	Not applicable	Not applicable			

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	SAE J1939-73								
3.12.5	*Governor*								
3.12.5.1	Type(s)			X	Not applicable	Not applicable			
3.12.5.2	Speed at which cut-off starts under full load			X	Not applicable	Not applicable			Specify range, if applicable
3.12.5.3	Maximum no-load speed			X	Not applicable	Not applicable			Specify range, if applicable
3.12.5.4	Idle speed			X	Not applicable	Not applicable			Specify range, if applicable
3.12.6	Cold-start system: Yes/No			X	Not applicable	Not applicable			
3.12.6.1	Type(s)			X	Not applicable	Not applicable			
3.12.6.2	Description			X	Not applicable	Not applicable			
3.12.7	*Fuel temperature at the inlet to the fuel injection pump*								
3.12.7.1	Minimum (deg. C)	X			Not applicable	Not applicable			
3.12.7.2	Maximum (deg. C)	X			Not applicable	Not applicable			
3.13	**Fuel feed for liquid fuel spark ignition engine**								
3.13.1	*Carburetor*				Refer to drawing No. DK164F/P-07	Refer to drawing No. DK164F/P-07			
3.13.1.1	Make(s)			X	YINBA SP	YINBA SP			
3.13.1.2	Type(s)			X	164F	164F			
3.13.2	*Port fuel injection*								
3.13.2.1	single-point / multi-point			X	Not applicable	Not applicable			
3.13.2.2	Type(s)			X	Not applicable	Not applicable			
3.13.3	*Direct injection*								
3.13.3.1	Type(s)			X	Not applicable	Not applicable			
3.13.4	*Fuel temperature at location specified by manufacturer*								
3.13.4.1	Location	X			Not applicable	Not applicable			
3.13.4.2	Minimum (deg. C)	X			Not applicable	Not applicable			

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3.13.4.3	Maximum (deg. C)	X			Not applicable	Not applicable			
3.14	**Fuel feed for gaseous fuel engines or where applicable, dual fuel engines (in the case of systems laid out in a different manner, supply equivalent information)**								
3.14.1	Fuel: LPG /NG-H/NG-L /NG-HL/ LNG/Fuel specific LNG	X		X	Not applicable	Not applicable			
3.14.2.	Pressure regulator(s) /vaporiser(s)								
3.14.2.1	Type(s)			X	Not applicable	Not applicable			
3.14.2.2	Number of pressure reduction stages			X	Not applicable	Not applicable			
3.14.2.3	Pressure in final stage minimum and maximum. (kPa)			X	Not applicable	Not applicable			
3.14.2.4	Number of main adjustment points			X	Not applicable	Not applicable			
3.14.2.5	Number of idle adjustment points			X	Not applicable	Not applicable			
3.14.3	Fuelling system: mixing unit/gas injection/liquid injection/direct injection			X	Not applicable	Not applicable			
3.14.3.1	*Mixture strength regulation*								
3.14.3.1.1.	System description and/or diagram and drawings			X	Not applicable	Not applicable			
3.14.4	*Mixing unit*								
3.14.4.1	Number			X	Not applicable	Not applicable			
3.14.4.2	Type(s)			X	Not applicable	Not applicable			
3.14.4.3	Location			X	Not applicable	Not applicable			
3.14.4.4	Adjustment possibilities			X	Not applicable	Not applicable			
3.14.5	*Inlet manifold injection*								
3.14.5.1	Injection: single-point/multi-point			X	Not applicable	Not applicable			
3.14.5.2	Injection: continuous/ simultaneously timed/ sequentially timed			X	Not applicable	Not applicable			
3.14.5.3	*Injection equipment*								

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3.14.5.3.1	Type(s)			X	Not applicable	Not applicable			
3.14.5.3.2	Adjustment possibilities			X	Not applicable	Not applicable			
3.14.5.4	*Supply pump*								If applicable
3.14.5.4.1	Type(s)			X	Not applicable	Not applicable			
3.14.5.5	*Injector(s)*								
3.14.5.5.1	Type(s)			X	Not applicable	Not applicable			
3.14.6	*Direct injection*								
3.14.6.1	Injection pump/pressure regulator			X	Not applicable	Not applicable			
3.14.6.1.1	Type(s)			X	Not applicable	Not applicable			
3.14.6.1.2	Injection timing (specify)			X	Not applicable	Not applicable			
3.14.6.2	*Injector(s)*								
3.14.6.2.1	Type(s)			X	Not applicable	Not applicable			
3.14.6.2.2	Opening pressure or characteristic diagram			X	Not applicable	Not applicable			
3.14.7	*Electronic Control Unit (ECU)*								
3.14.7.1	Type(s)			X	Not applicable	Not applicable			
3.14.7.2	Adjustment possibilities			X	Not applicable	Not applicable			
3.14.7.3	Software calibration number(s)			X	Not applicable	Not applicable			
3.14.8	*Approvals of engines for several fuel compositions*								
3.14.8.1	Self-adaptive feature: Yes/No	X	X	X	Not applicable	Not applicable			
3.14.8.2	Calibration for a specific gas composition: NG-H/NGL/NG-HL/ LNG/Fuel specific LNG	X	X	X	Not applicable	Not applicable			
3.14.8.3	Transformation for a specific gas composition: NGHT/NG-LT/ NG-HLT	X	X	X	Not applicable	Not applicable			
3.14.9	*Fuel temperature pressure regulator final stage*								
3.14.9.1	Minimum (deg. C)	X			Not applicable	Not applicable			
3.14.9.2	Maximum (deg. C)	X			Not applicable	Not applicable			

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3.15	**Ignition system**								
3.15.1	*Ignition coil(s)*								
3.15.1.1	Make(s)			X	LIHUA(LH) WUFU(WF) SANMU(SM) ZONGSHENDIANQI(ZSDQ) QIUJING(QJ) QINGCHENG(HQ)	LIHUA(LH) WUFU(WF) SANMU(SM) ZONGSHENDIANQI(ZSDQ) QIUJING(QJ) QINGCHENG(HQ)			
3.15.1.2	Type(s)			X	164F	164F			
3.15.1.3	Number			X	1	1			
3.15.2	*Spark plug(s)*								
3.15.2.1	Make(s)			X	TORCH NGK CHAMPIOM LG	TORCH NGK CHAMPIOM LG			
3.15.2.2	Type(s)			X	A5RTC A5TC	A5RTC A5TC			
3.15.2.3	Gap setting			X	0.7mm~0.8mm	0.7mm~0.8mm			
3.15.3	*Magneto*			X					
3.15.3.1	Type(s)			X	Not applicable	Not applicable			
3.15.4	Ignition timing control: Yes/No			X	Yes	Yes			
3.15.4.1	Static advance with respect to top dead centre (crank angle degrees)			X	30°±2°	30°±2°			
3.15.4.2	Advance curve or map			X	Refer to drawing No. DK164F/P-06	Refer to drawing No. DK164F/P-06			
3.15.4.3	Electronic control: Yes/No			X	No	No			

Explanatory notes to Appendix 3:

(Footnote markers, footnotes and explanatory notes not to be stated on the information document)

(1) As defined in Annex II to Commission Delegated Regulation (EU) 2018/989.

(2) Refer to section 2.4.13. in Annex IX (engine family definition).

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ULTIMATRON FRANCE
286 Rue Charles Gide 34670
Baillargues, France

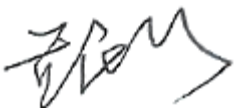
aration

According to test the fuel delivery with several carburetor models, we used the higher fuel delivery one to emission test. The following are the fuel delivery data. Please check.

Engine Model: DK164F/P

Carburetor Make/ Model	Max Torque	Fuel Flow (g/h)
YINBA/164F	8.5N.m/2800rpm	963
SP/164F		963

We conform that the design, raw material, manufacturing, assembling and quality control are completely identical and operating procedures are the same for all fuel carburetors.

Signature: 

Position: Compliance Manager

ULTIMATRON FRANCE

Date:24th Aug. 2020

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Declaration by manufacturer on compliance with Regulation (EU) 2016/1628

ULTIMATRON FRANCE Hereby declares that the following ~~engine type/~~engine family(1) complies in all respects with the requirements of Regulation (EU) 2016/1628 of the European Parliament and of the Council1, Commission Delegated Regulation (EU) 2018/989 on technical and general requirements2, Commission Delegated Regulation (EU) 2018/987 on monitoring of in-service engines 3 and Commission Implementing Regulation (EU) 2018/988 on administrative requirements4 and does not use any defeat strategy.
All emission control strategies comply, where applicable, with the requirements for Base Emission Control Strategy (BECS) and Auxiliary Emission Control Strategy (AECS) set-out in section 2 of Annex IV to Commission Delegated Regulation (EU) 2018/989 on technical and general requirements, and have been disclosed in accordance with that Annex and with Annex I of Commission Implementing Regulation (EU) 2018/988on administrative requirements.

1.1	Make (trade name(s) of manufacturer)	:	ULTIMATRON FRANCE
1.2	Commercial name(s) (if applicable)	:	Not applicable
1.3	Company name and address of manufacturer	:	ULTIMATRON FRANCE 286 Rue Charles Gide 34670 Baillargues, France
1.4	Name and address of manufacturer's authorised representative (if any)	:	TUV-WORLD ECC CERTIFICATION SERVICE SL PASEO DE LA CASTELLANA, NUM. 114 PLANTA 6, PUERTA 6 28046 Madrid Spain
1.6	~~Engine type designation/~~engine family designation~~/FT~~(1)	:	DK164F/P
1.6.1	Variant(s)		DK164F/P, 164F/P, DK145i, *164F#%/P-&€

(Place): Chongqing, China
Date: 24th Aug. 2020

Signature:

(or visual representation of an 'advanced electronic signature' according to Regulation (EU) No 910/2014, including data for verification): ……

(Footnote markers, footnotes and explanatory notes not to be stated on the manufacturer's declaration)

(1) Strike out the unused options, or only show the used option(s).

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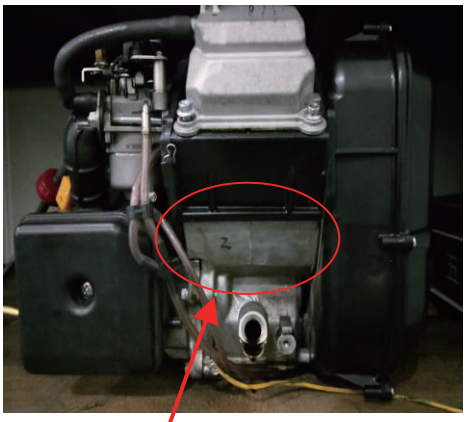
Drawings of DK164F/P



Trade mark or manufacturer: XXXXXXXX
Engine type: XXXXXXXX
Serial number: YY+MM XXXXXXXX
(Remark:YY--Year MM--Month(production date))
Approval number or make: e9XXXXXXXX

Remarks: this sample only shows the contents that need to be included on the engine marking, the actual layout may adjust according manufacturer's requirement.

Engine Type	Test engine
POSITION OF STATUTORY MARKING	
Drawing No.	DK164F/P-01

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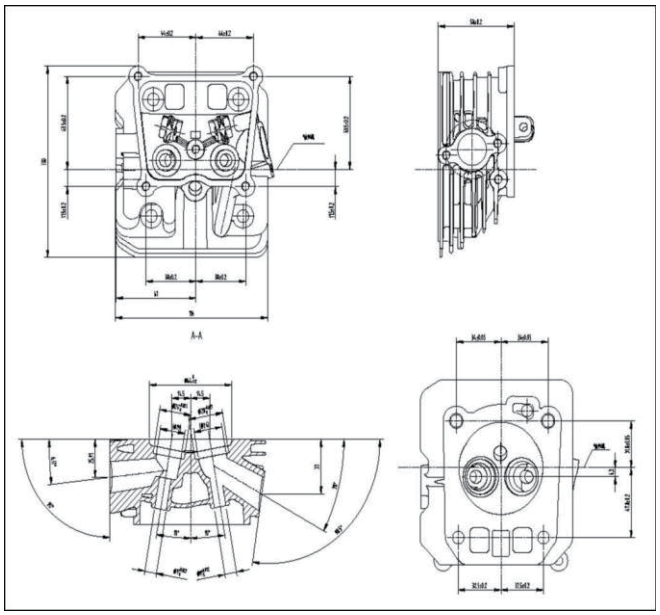
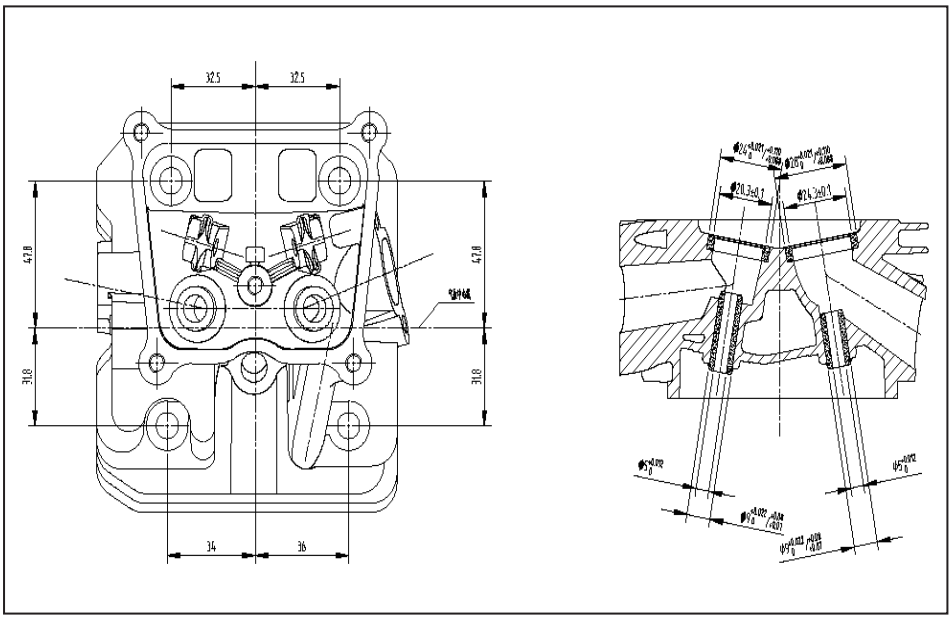
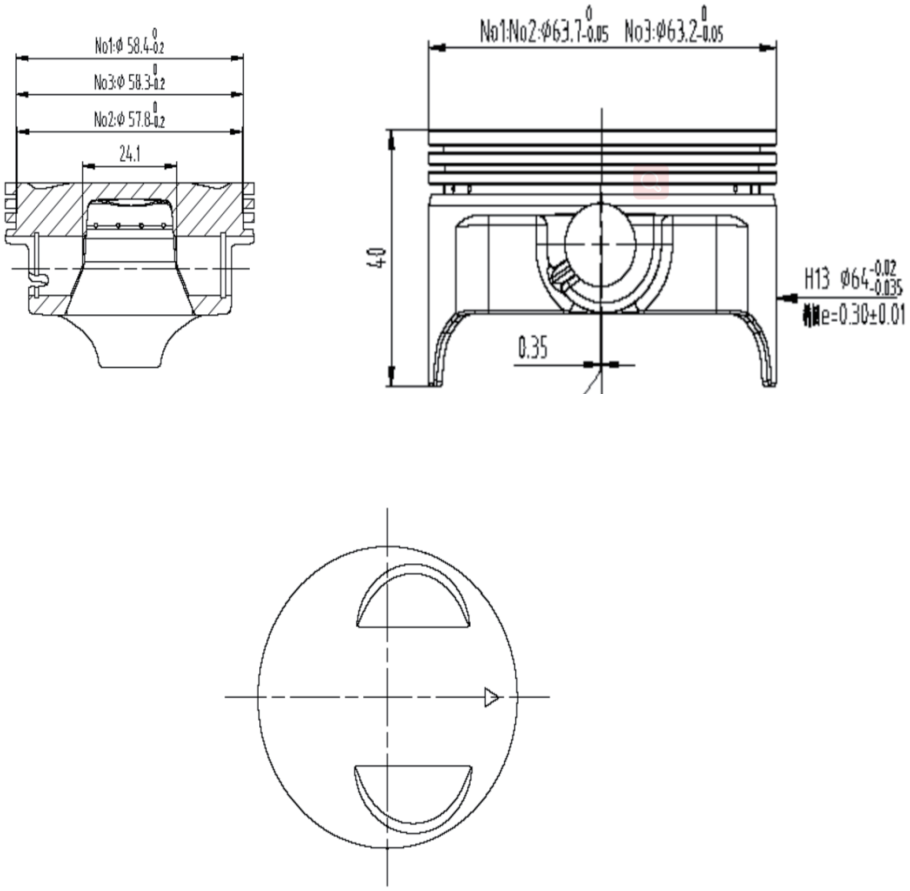




Engine Type	Test engine
CYLINDER HEAD	
Drawing No.	DK164F/P-02

IDIADA CN20090790



Engine Type	Test engine
PISTON	
DRAWING NO.	DK164F/P-03

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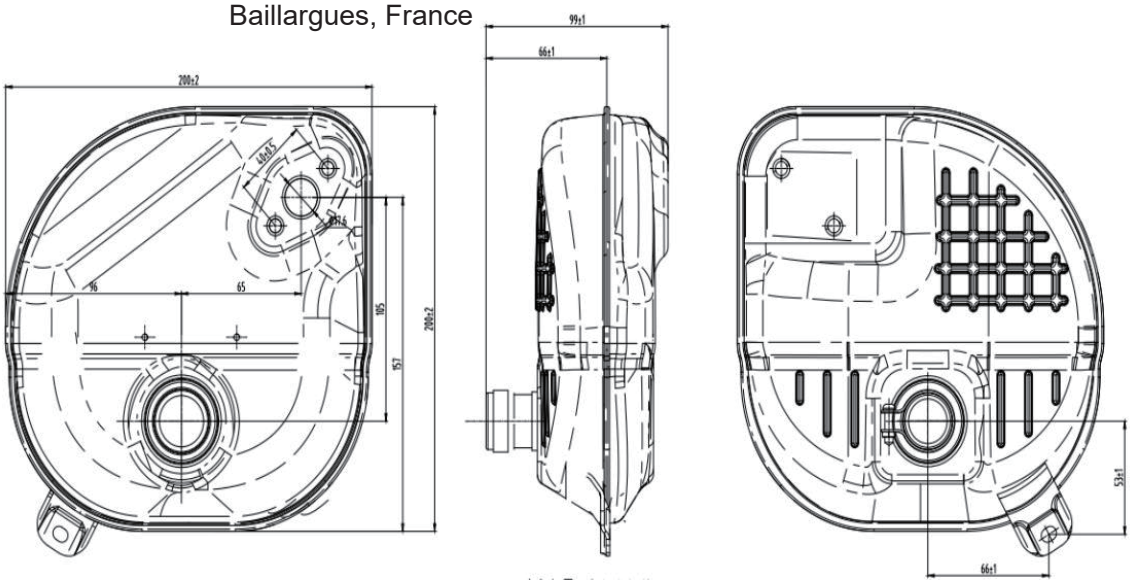
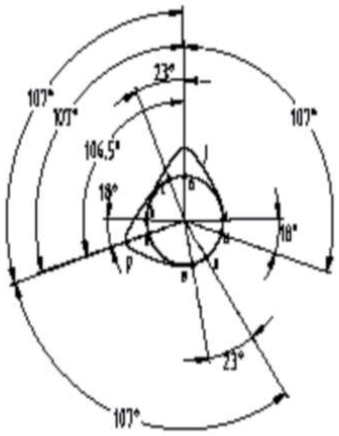
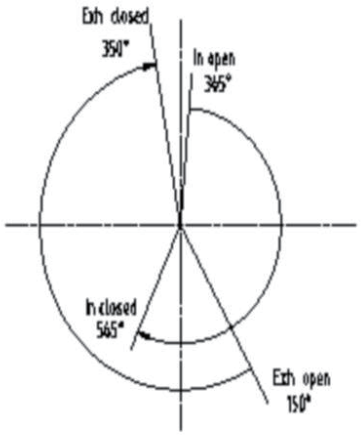
Baillargues, France



Engine Type	Test engine
MUFFLER	
DRAWING NO.	DK164F/P-04

IDIADA CN20090790





Engine Type	Test engine
TIMING DIAGRAM	
DRAWING NO.	DK164F/P-05

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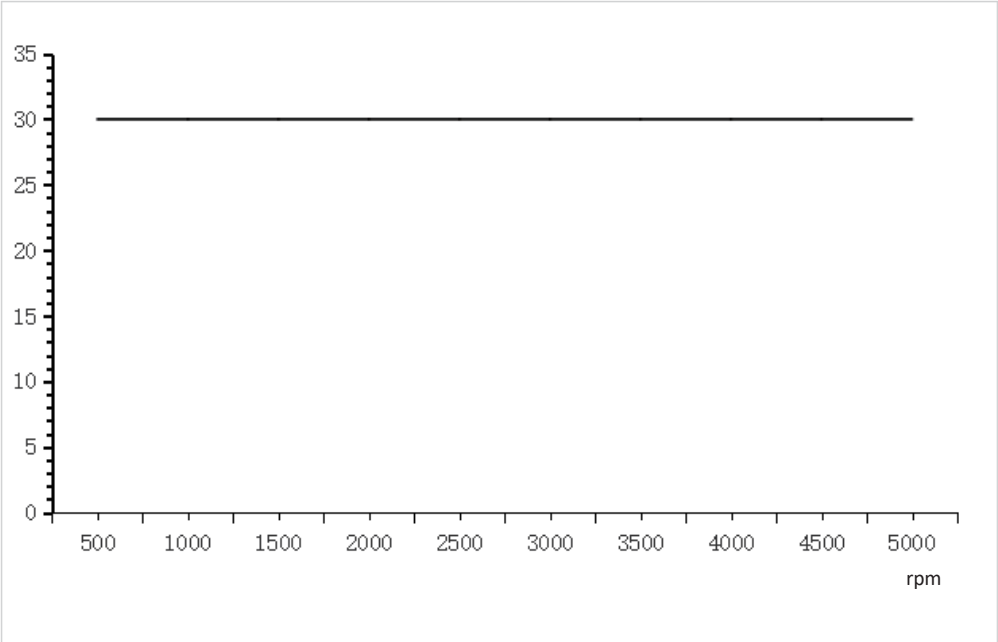
Advance curve or map(angle)



Engine Type	Test engine
IGNITION ADVANCE CURVE	
Drawing No.	DK164F/P-06

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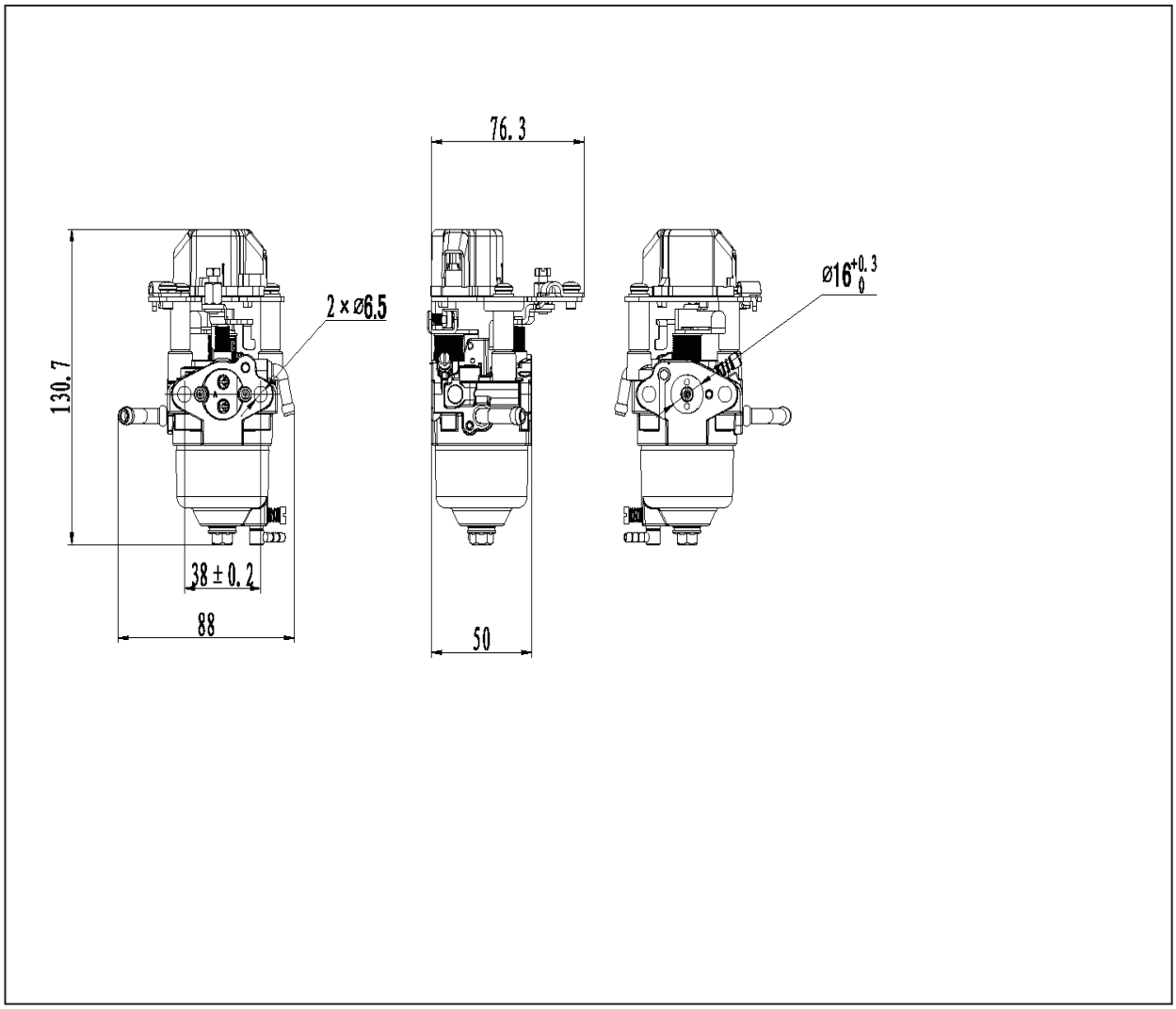
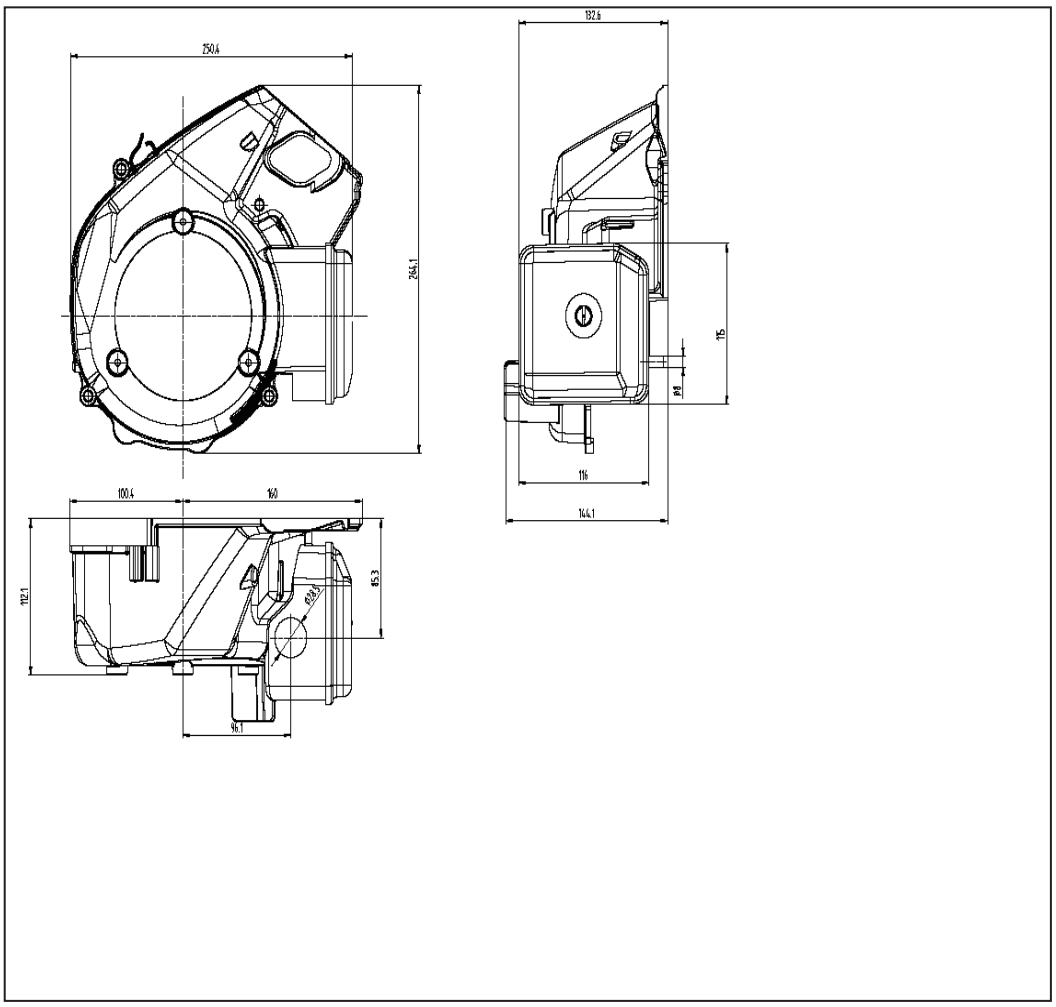


Engine Type	Test engine
Carburetor	
DRAWING NO.	DK164F/P-07

IDIADA CN20090790



Engine Type	Test engine
Air filter	
DRAWING NO.	DK164F/P-08

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Appendix-1

Engine naming rules

1.*164F#%/P-&€,

1.1.Prefix"*"refers to Series tag
No marked = Neutral
DK=DINKING
LL=LIANLONG

1.2. Postfix"#"refers to starting way
No marked = Recoil start
D=Electric start

1.3. Postfix"%"refers to structure
No marked = Basic
（1/2R）= Chain or Gear reduction
（1/2C）= Clutch
（1/2S）= Double output
（1/2CD）= Camshaft output

1.4. Postfix"&"refers to distinction
No marked = Basic
1= First improvement
2= Second improvement
3= Third improvement
...

1.5. Postfix"€"refers to style
No marked = Basic
VI= Generator power
A= A style
B= B style
C= C style
...

Signature:

Name：mo qixiong

Position：Chief Engineer

ULTIMATRON FRANCE

Date：August 24,2020

CN20090790

Manufacturer's statement on No Use of "Defeat Device"

The undersigned	:	Mr. Mo Qixiong / Technical Manager
Company name and address of the manufacturer	:	ULTIMATRON FRANCE 286 Rue Charles Gide 34670 Baillargues, France
Name and address of the manufacturer's representative (if any)	:	TUV-WORLD ECC CERTIFICATION SERVICE SL PASEO DE LA CASTELLANA, NUM. 114 PLANTA 6, PUERTA 6 28046 Madrid Spain

Hereby declares that the fuel tank and its accessory parts of the following engines:

Make (trade name of the manufacturer)	:	ULTIMATRON FRANCE
~~Engine type designation /~~ engine family designation ~~/ FT~~	:	DK164F/P
Variant(s)	:	DK164F/P, 164F/P, DK145i, *164F#%/P-&€
Version(s)	:	V
Commercial name(s) (if available)	:	Not applicable
Category, subcategory of the ~~engine type or~~ engine family	:	NRS-vr-1a

are not using any software or device that can be considered as "defeat device" which may impact the emission performance of the engines.

Place: Baillargues, France Date: 24th Aug. 2020

Signature:

IDIADA CN20090790