



TECHNICAL DATA

**UL260/ UL350
UL390/ UL520
AERO ENGINES**

Preface

Thank you for considering / choosing ULPower Aero engines.

The document will provide you with basic information on engine dimensions, weight ...

If any passages of the Manual are not completely understood or in case of questions, please contact the manufacturer or an authorised dealer.

We hope you will have much pleasure and satisfaction flying your aircraft powered by a ULPower engine.

Remarks

The figures in this Technical Data document show the typical construction. They may not represent in full detail or the exact shape of the parts which have the same or similar function.

Specifications are given in the SI metric system with the USA equivalent in parenthesis. Where precise accuracy is not required, some conversions are rounded off for easier use.

In addition to this Technical Data document, please refer to the following:

- Installation Manual
- Operating Manual
- Maintenance Manual
- Illustrated Parts Catalogue

Modifications

The information and components/system descriptions contained in this Technical Document are correct at the time of publication. ULPower, however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on its products previously manufactured.

ULPower reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation.

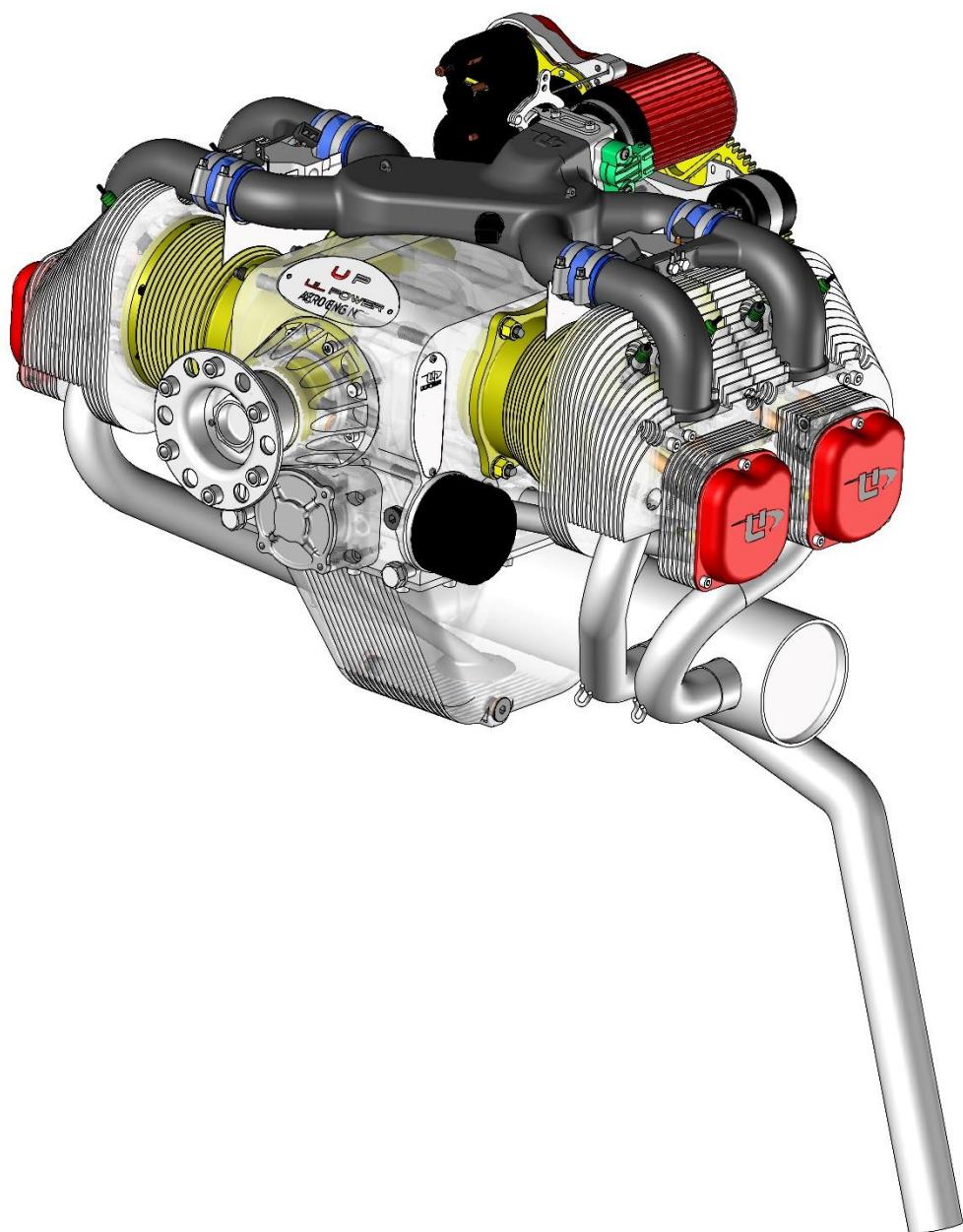
Please contact your dealer or check the manufacturers website (<http://www.ULPower.com>) for any updates or changes concerning the engine and its manuals.

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UL260



Engine description

General Description

- 4 stroke, 4 cylinder, horizontally opposed
- Electronic spark ignition (variable timing)
- Electronic multipoint fuel injection (pressure and temperature compensated)
- Electronic RPM limiter
- Direct propeller drive
- 5 bearing crankshaft with large thrust bearing (ball bearing type)
- Single central camshaft
- Push rods, Tappets and Over head valves
- Wet sump forced lubrication with integrated pressure regulator
- Ram air cooled cylinders and cylinder heads
- Integrated AC generator, external rectifier-regulator
- Electric starter
- Electric fuel pump and pressure regulator

Specifications

	UL260i	UL260iF	UL260iS(K)	UL260iSA
Displacement:		2592 cc		
Bore:		105,6 mm		
Stroke:		74 mm		
Compression Ratio:	8,16 : 1		9,1:1	
Firing order:		1 - 3 - 2 - 4		
Direction of Rotation:		Clockwise - Pilot's view - Tractor configuration		
Torque (ISA conditions):	217 Nm @ 2500 rpm		237Nm @ 2800 rpm	
Power rating (ISA conditions):	97 hp @ 3300 rpm (85 hp @ 2800 rpm)	100 hp @ 3100 rpm (92 hp @ 2800 rpm)	107 hp @ 3300 rpm (93 hp @ 2800 rpm)	
Basic standard engine weight:	60,1 kg (132,5 lb)			63,3 kg (139,5lb)
DC output:		30 Amp		
Oil capacity:		3 L (Min: 2,5L - Max3,5L)		4 L(Min: 3,25L - Max 4,25L)
Fuel:	<u>MOGAS</u> min. 95 octane rating <u>AVGAS</u> (100LL) <u>UL 91</u> (95 octa = 87MON = 91AKI)		<u>MOGAS</u> min. 98 octane rating <u>AVGAS</u> (100LL) <u>UL91</u> (98 Oct = 90MON = 94 AKI)	

Technical data

Description of basic standard engine

The basic standard engine consists of the following:

- Engine assembly
- Injectors and spark plugs
- Intake manifold, throttle and air filter
- Electric starter motor
- Integrated AC generator
- Exhaust system
- Cooling ducts for cylinders and cylinder heads
- Standard propeller flange l=55

Installed weight of standard engine

Dry weight of the basic standard engine from serial production: 60,1 kg (132,5 lb)

Following items are by default provided by ULPower and have the following weight:

▪ Ignition Coils & leads:	.....	3,0 kg (6,6 lb)
▪ ECU & wiring loom:	.....	1,6 kg (3,5 lb)
▪ Exhaust, bolts, springs & seals:	.....	3,6 kg (8 lb)
▪ Electric fuel pump:	.....	0,7 kg (1,6 lb)
▪ Fuel filters (pre-filter & fine filter):	.....	0,2 kg (0,4 lb)
▪ Oil/Air Separator & hoses:	.....	0,7 kg (1,5 lb)
▪ Rectifier Regulator:	.....	0,1 kg (0,2 lb)
▪ Rubber engine mounts:	.....	0,3 kg (0,7 lb)
▪ 3,0 L engine lubricating oil:	.....	2,6 kg (5,7 lb)
Possible fully operational engine weight: UL260i; UL260iS; UL260iF		72,9 kg (161 lb)

the UL260iSa engines (aerobatic version) are delivered with an inverted oil system, containing:

- | | |
|---------------------------------------|---|
| ▪ Gravity valve, | ▪ Gravity oil - air separator |
| ▪ Gravity oil pickup tube in the sump | ▪ Breather adaptor on top of the engine |

* Additional weight for the Aerobic option: 3,2 kg (7,01 lb)

* Extra 1L Oil: 0,866 kg (1,89 lb)

*** Possible fully operational engine weight UL260iSA: 76,966 kg (167.9 lb)**

The total operational weight depends on the accessories installed .In addition to the installed standard engine, following items are necessary accessories:

- Oil cooler and connections (depend on type of installation)
- Tacho, temperature and pressure sensors, wiring (and gauges)

Engine views

Dimensions of basic engine with standard propeller flange l=55

	pos. (+)	neg. (-)	total Σ
max. dimension in x-axis	83 mm (3,26 inch)	470 mm (18,50 inch)	553 mm (21,77 inch)
max. dimension in y-axis	327,5 mm (12,87 inch)	327,5 mm (12,87 inch)	655 mm (25,75 inch)
max. dimension in z-axis	182 mm (7,16 inch)	290 mm (11,42 inch)	472 mm (18,58 inch)

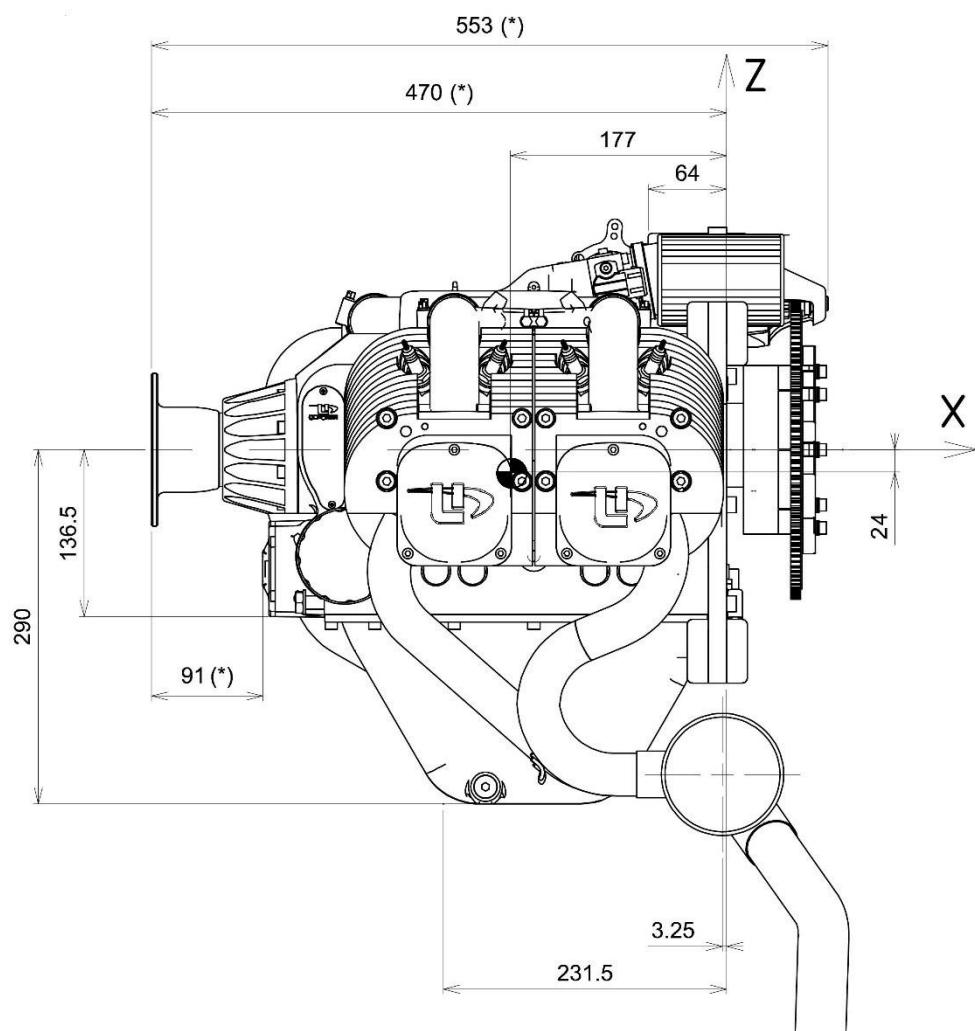
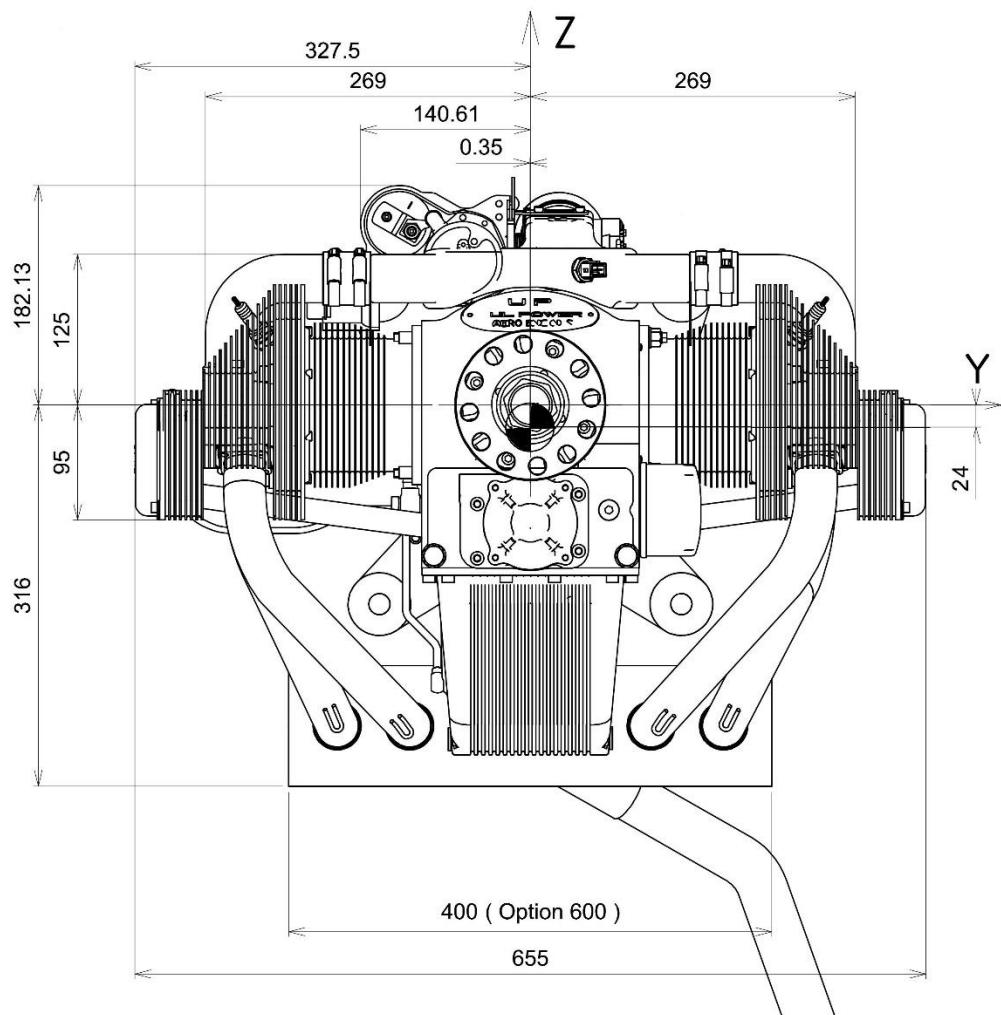


Figure 1

* dimensions for standard prop flange l=55, different prop flanges are available (see propeller flange document)



Centre of gravity of basic standard engine

centre of gravity in x-axis	-166 mm (-6,53 inch)
centre of gravity in y-axis	-5 mm (-0,2 inch)
centre of gravity in z-axis	-27,5 mm (-1,08 inch)

Figure 2

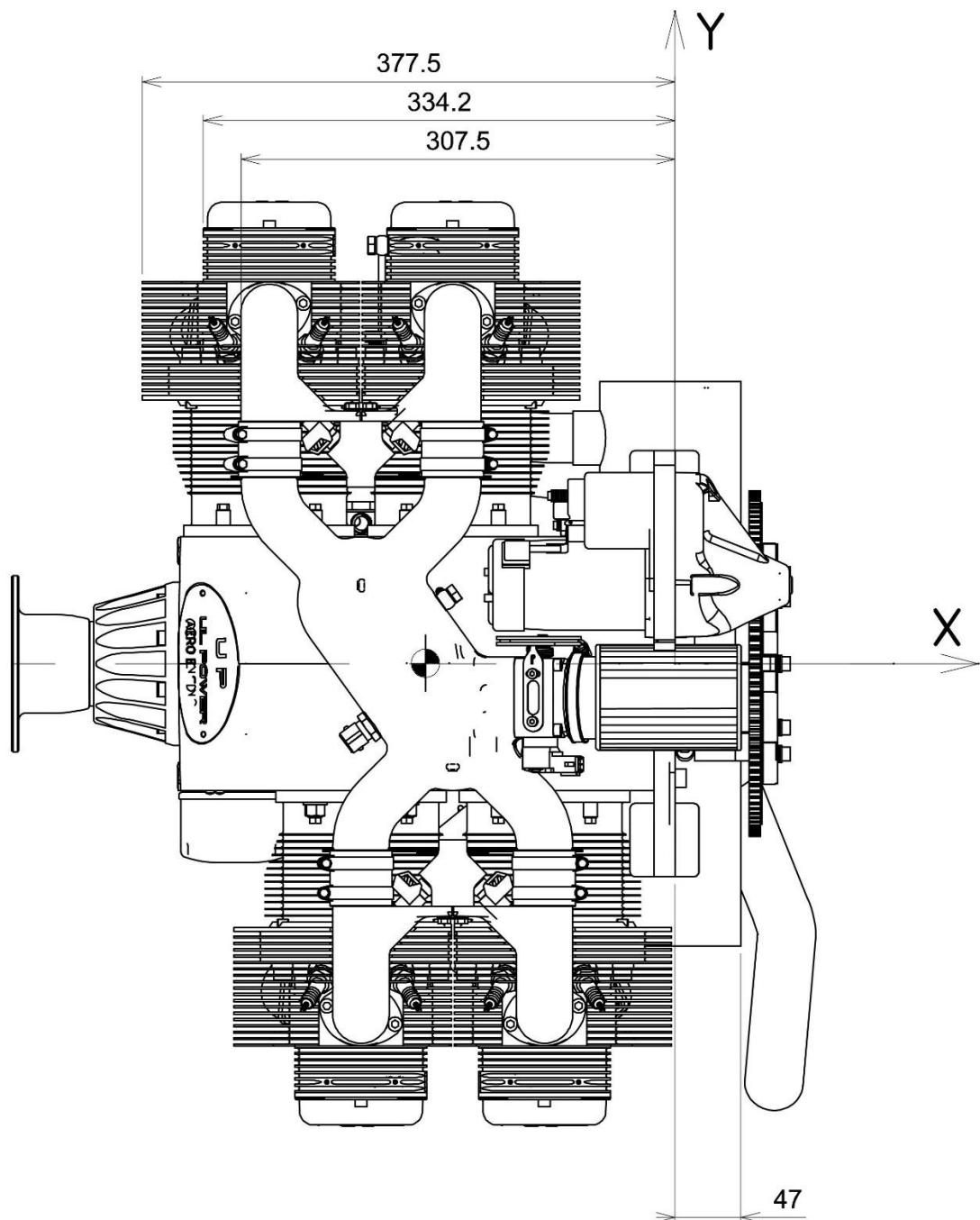


Figure 3

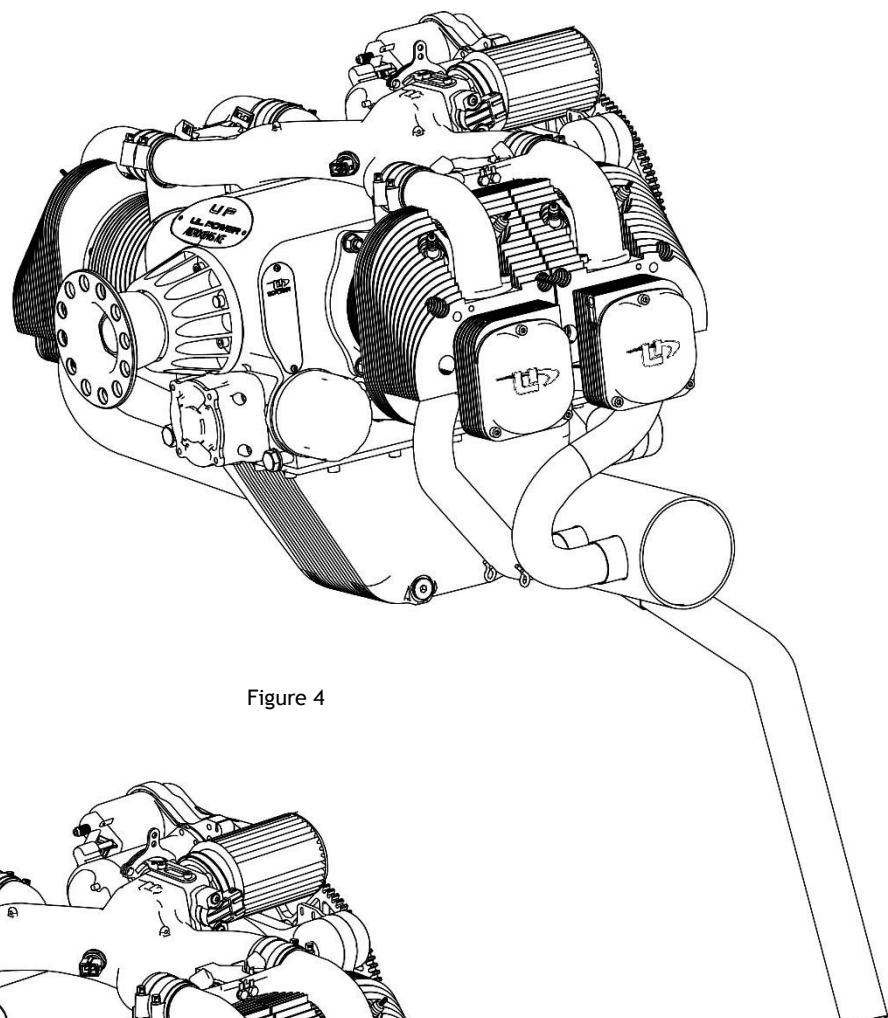


Figure 4

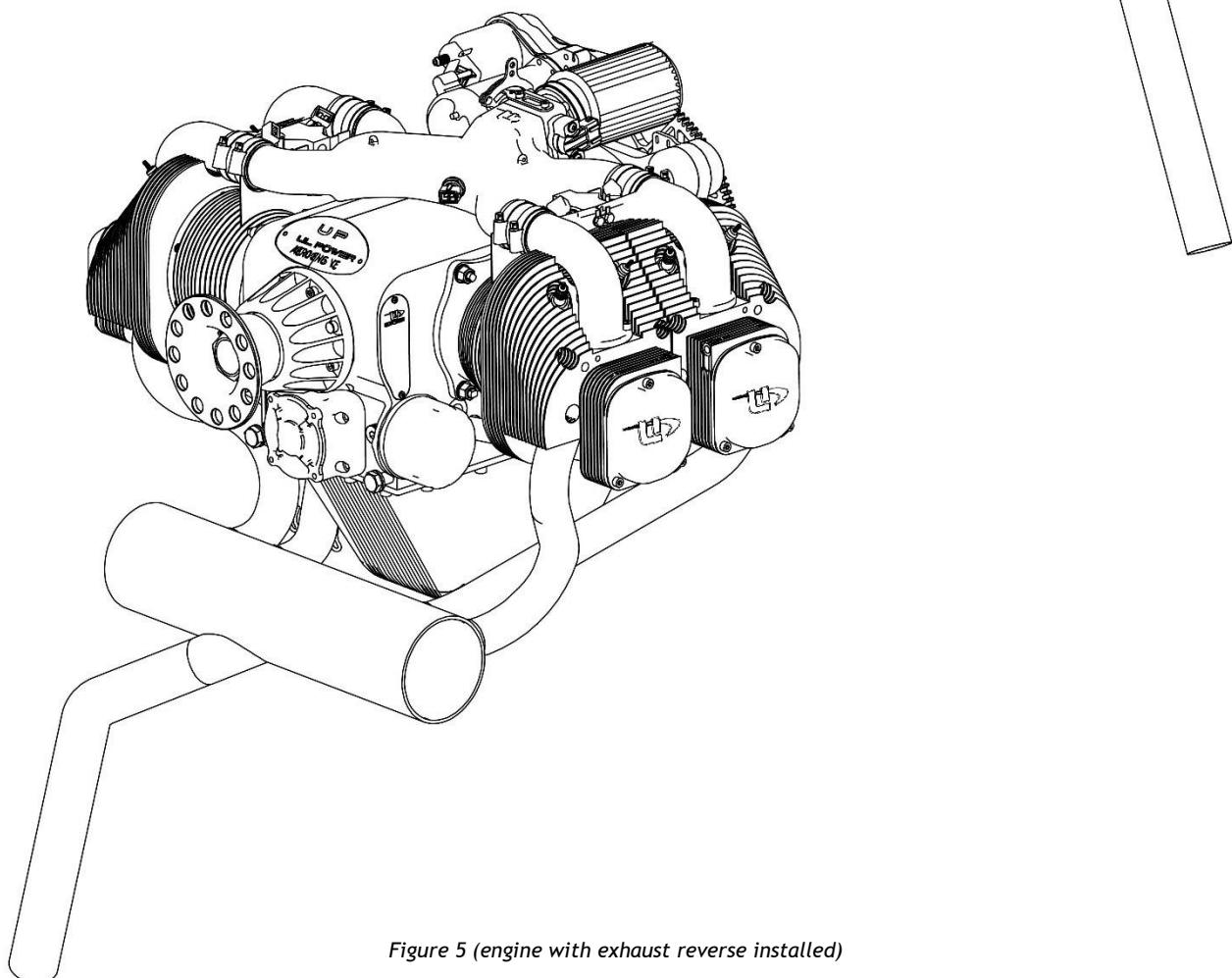


Figure 5 (engine with exhaust reverse installed)

Engine mounting position

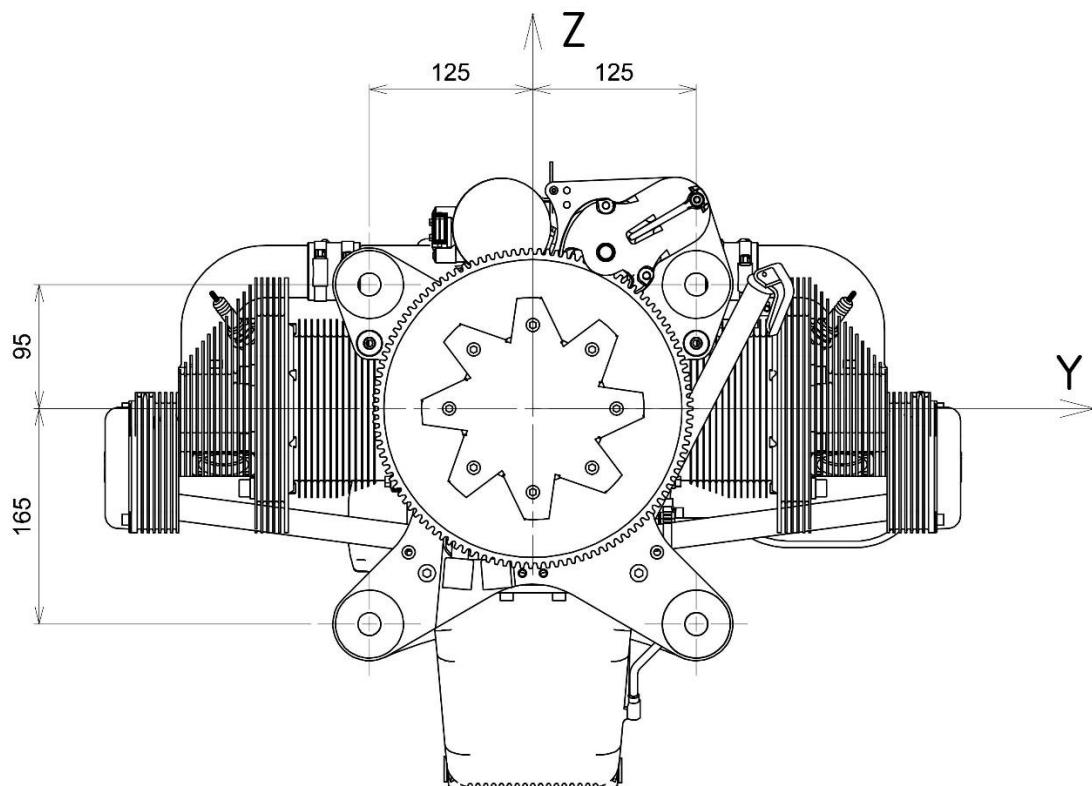


Figure 6: Mounting points

	Y-axis	Z-axis
attachment point 1	-125 mm	95 mm
attachment point 2	125 mm	95 mm
attachment point 3	-125 mm	165 mm
attachment point 4	125 mm	165 mm

As an option we can also provide a front engine mount plate.

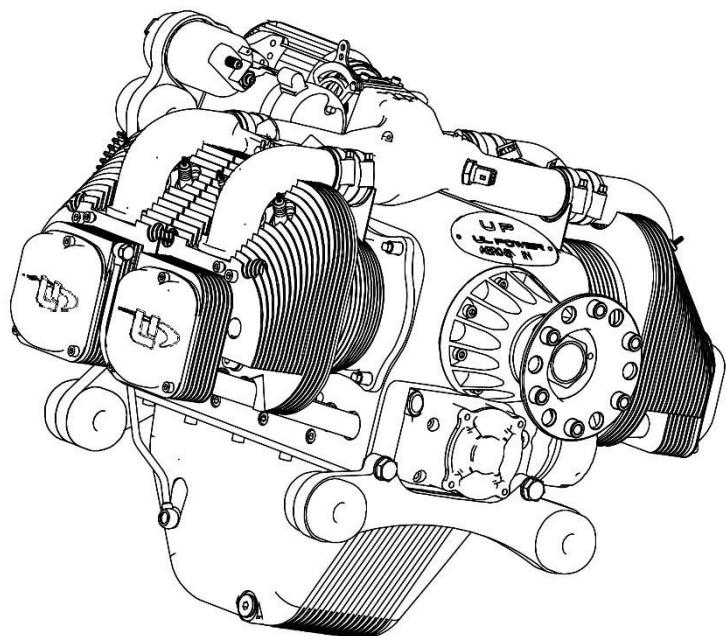


Figure 7

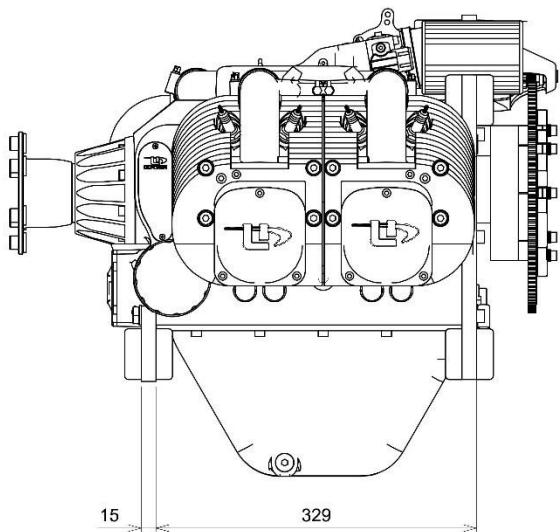


Figure 8

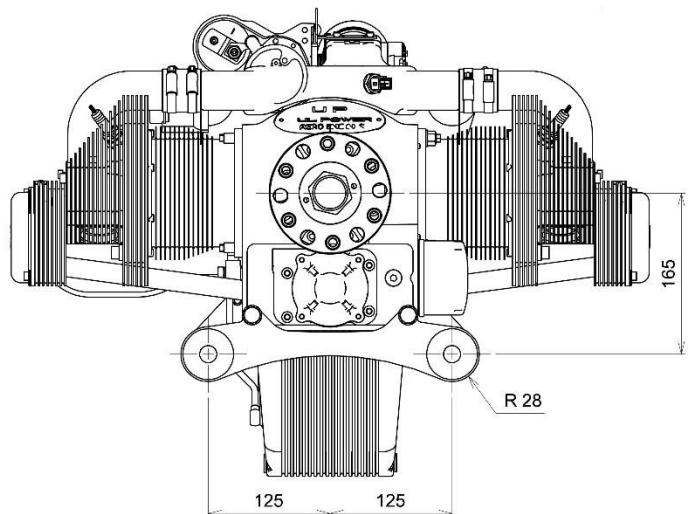


Figure 9

Engine views “Forced Cooling”

Optional we offer a “Forced Cooling” for all type UL260 engines.

Dimensions: see below

Extra weight: 11Kg

An oil cooler is integrated in the system.

Front Engine Mount plate is installed. Engine fixing points are the 4 lower points.

A muffler or 4 in one exhaust can be installed.

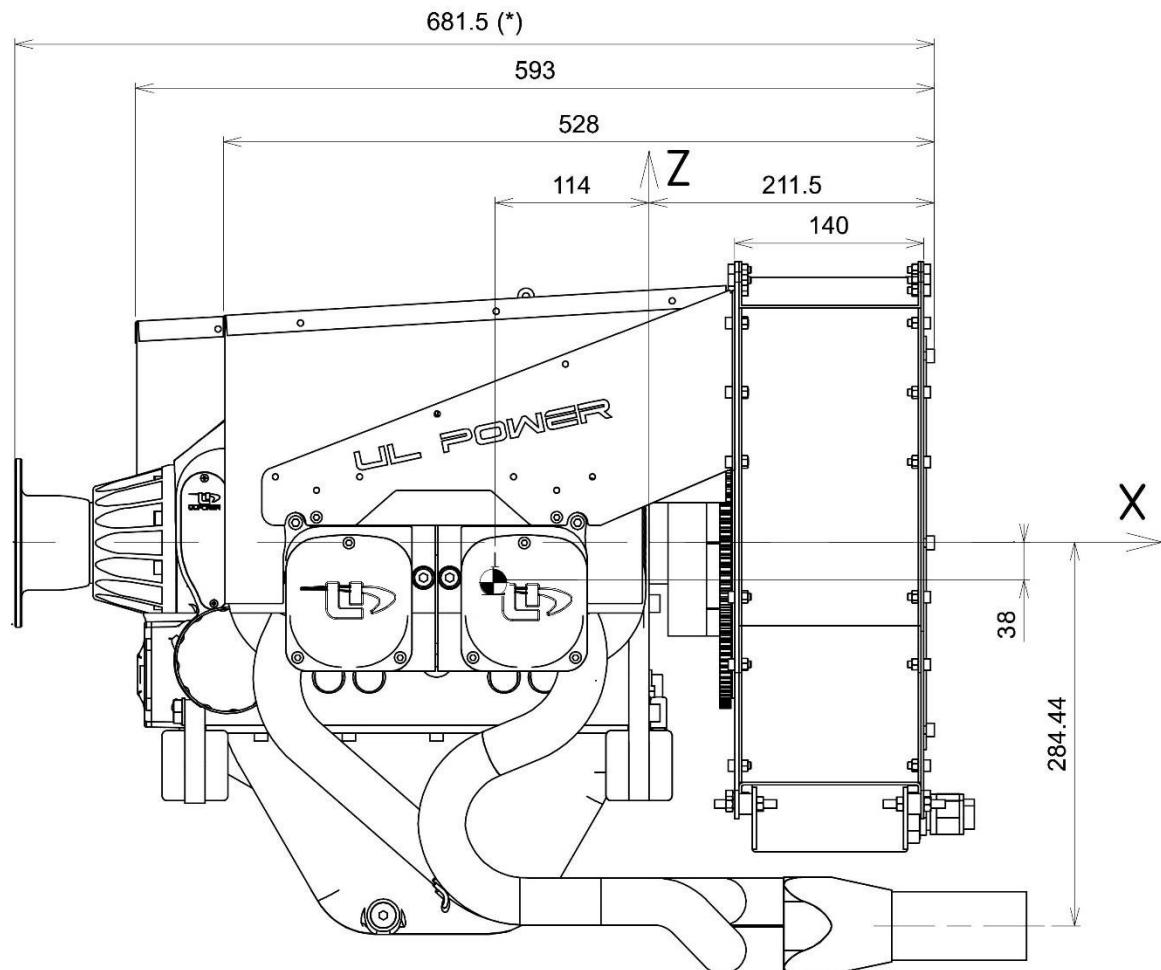


Figure 10 (Optional “Forced Cooling”)

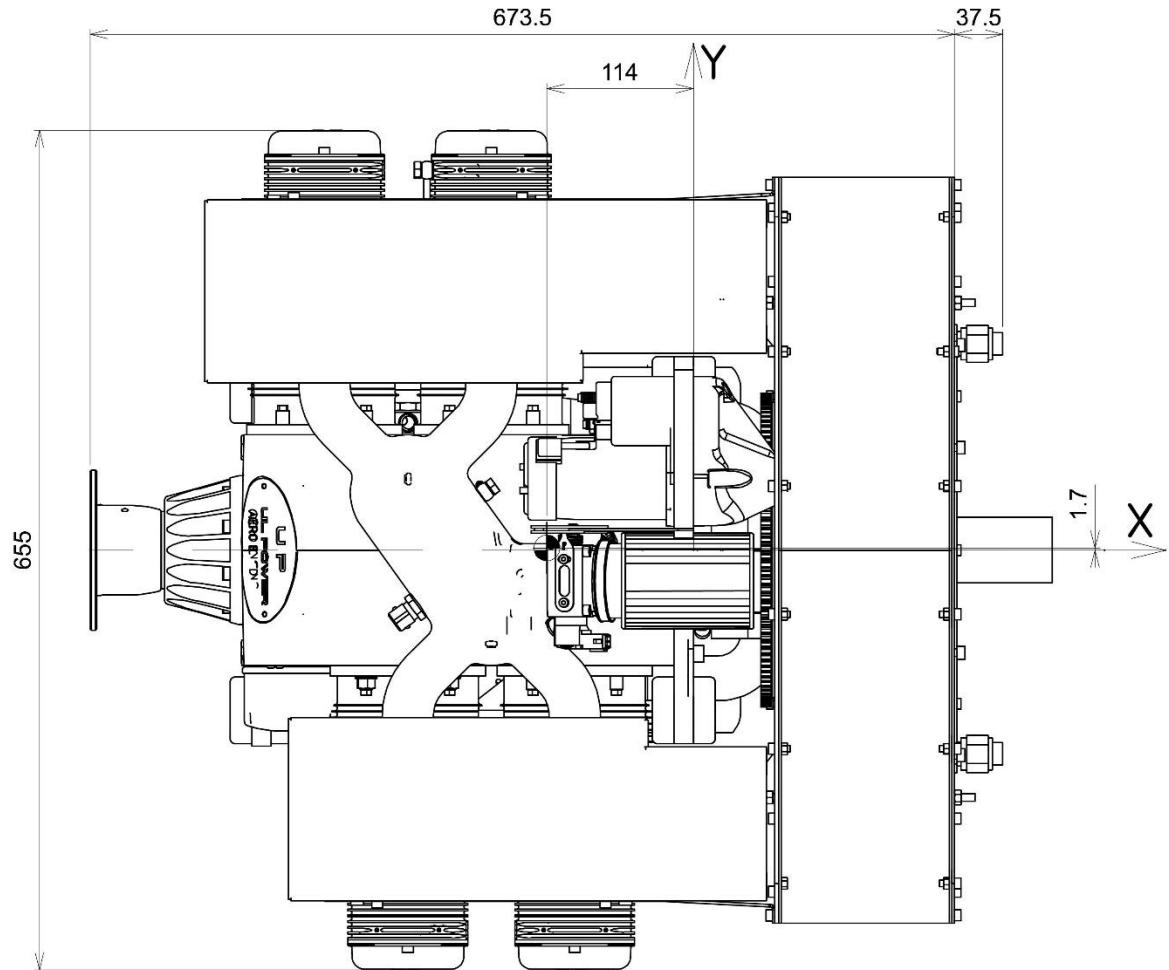


Figure 11 (Optional “Forced Cooling”)

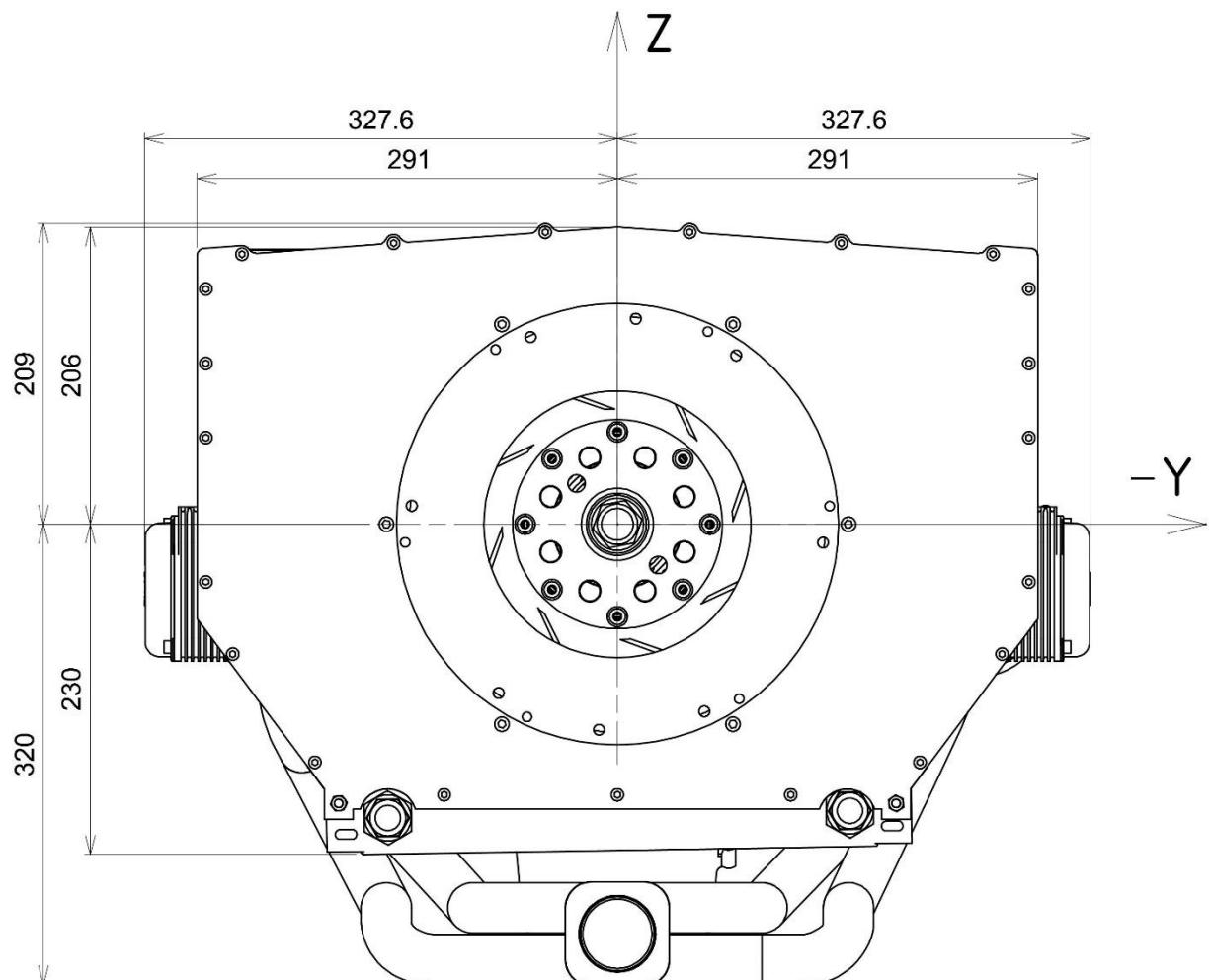


Figure 12 (Optional "Forced Cooling")

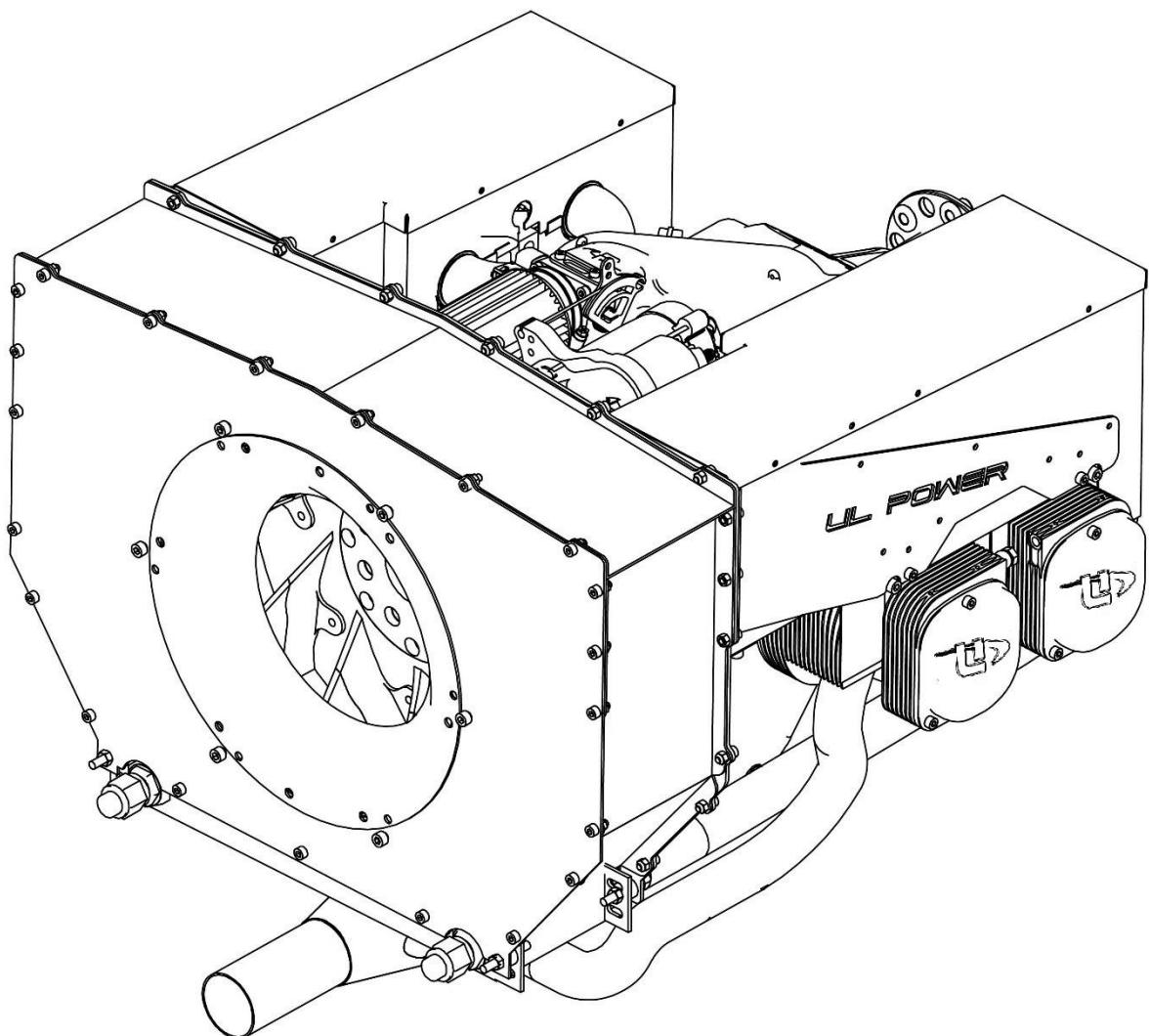


Figure 13 (Optional “Forced Cooling”)

Exhaust system: dimensions

Unless otherwise agreed, the motor will be delivered with the UL power exhaust system. The system is designed to reduce the noise to an acceptable level without loosing power.

With muffler

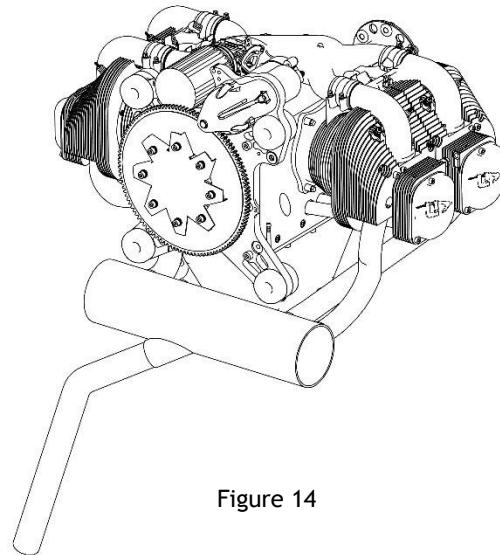


Figure 14

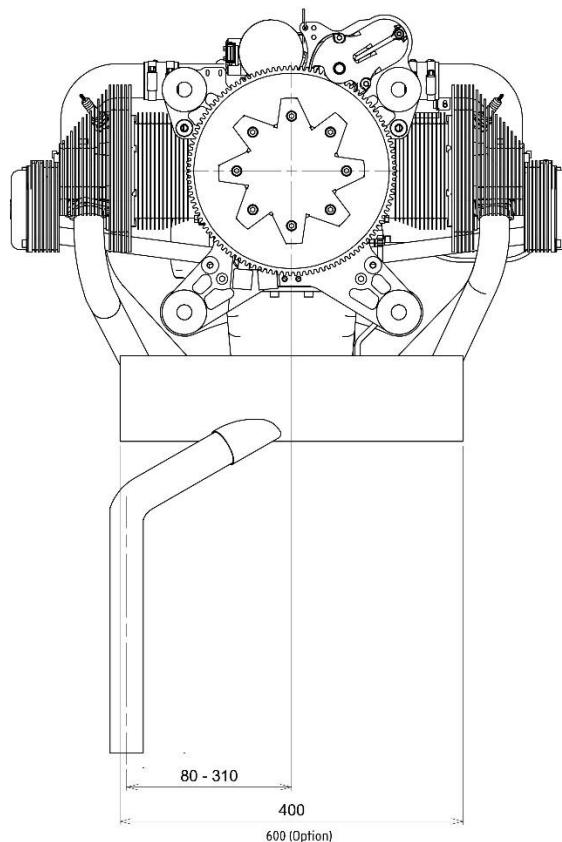


Figure 15

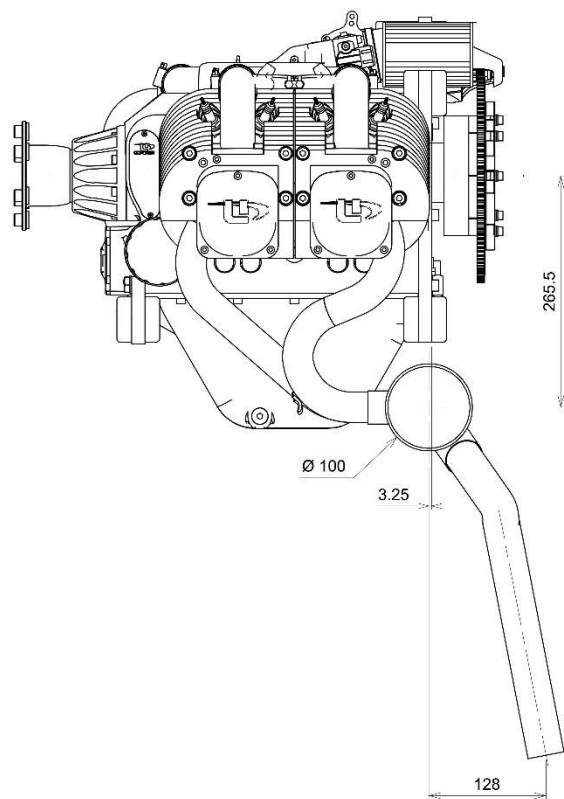


Figure 16

The final exhaust tube (1) (ULP partn° BE093506) is delivered with separate 2 brackets to fix the spring. The tube (1) can be cut according wishes. This way, it is possible to change the distance between centreline engine and centreline outlet tube from 80mm to 145mm. After installation, the brackets must be welded to the tube.

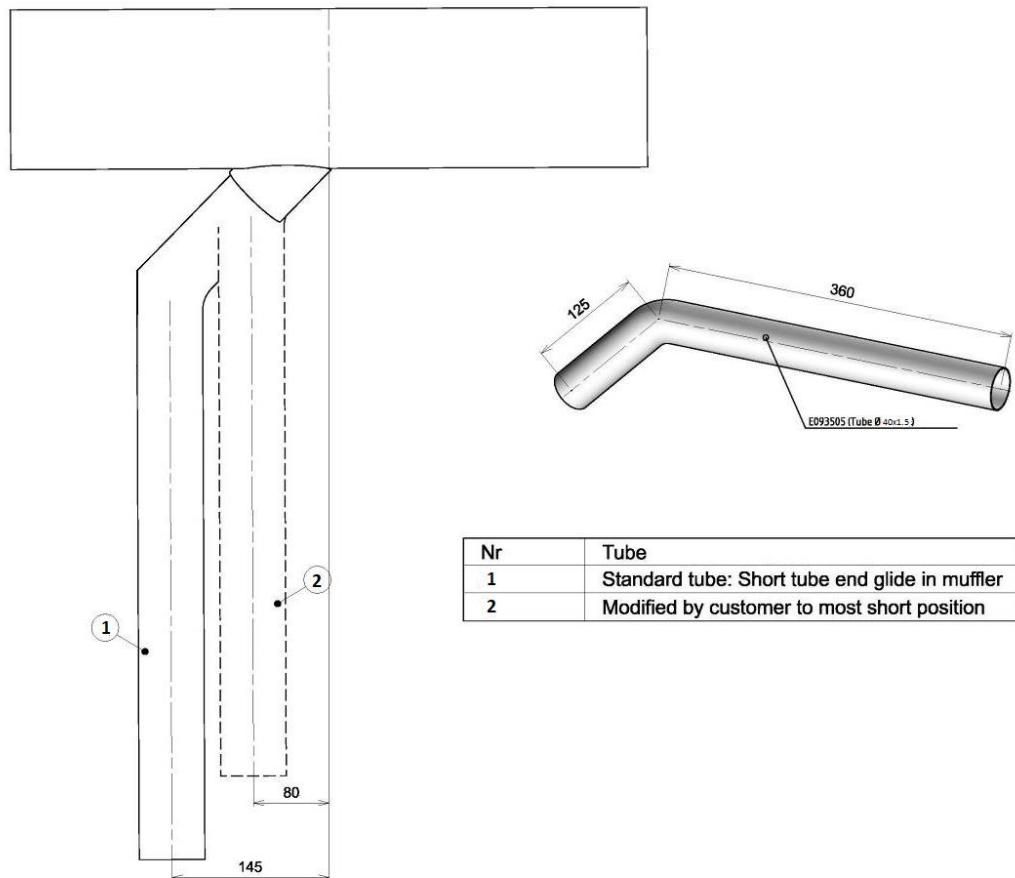


Figure 17

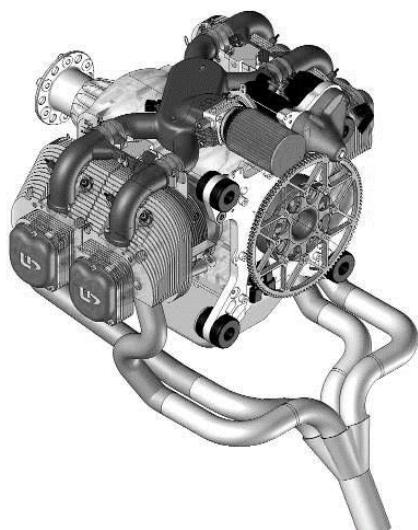
With 4 in 1 collector

Figure 18

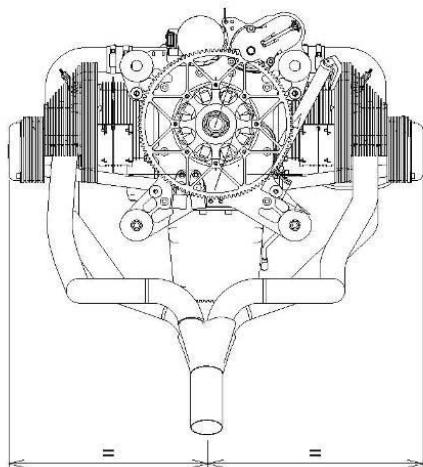


Figure 19

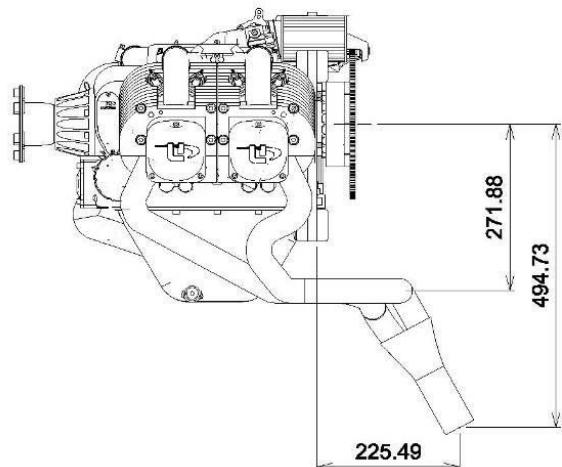
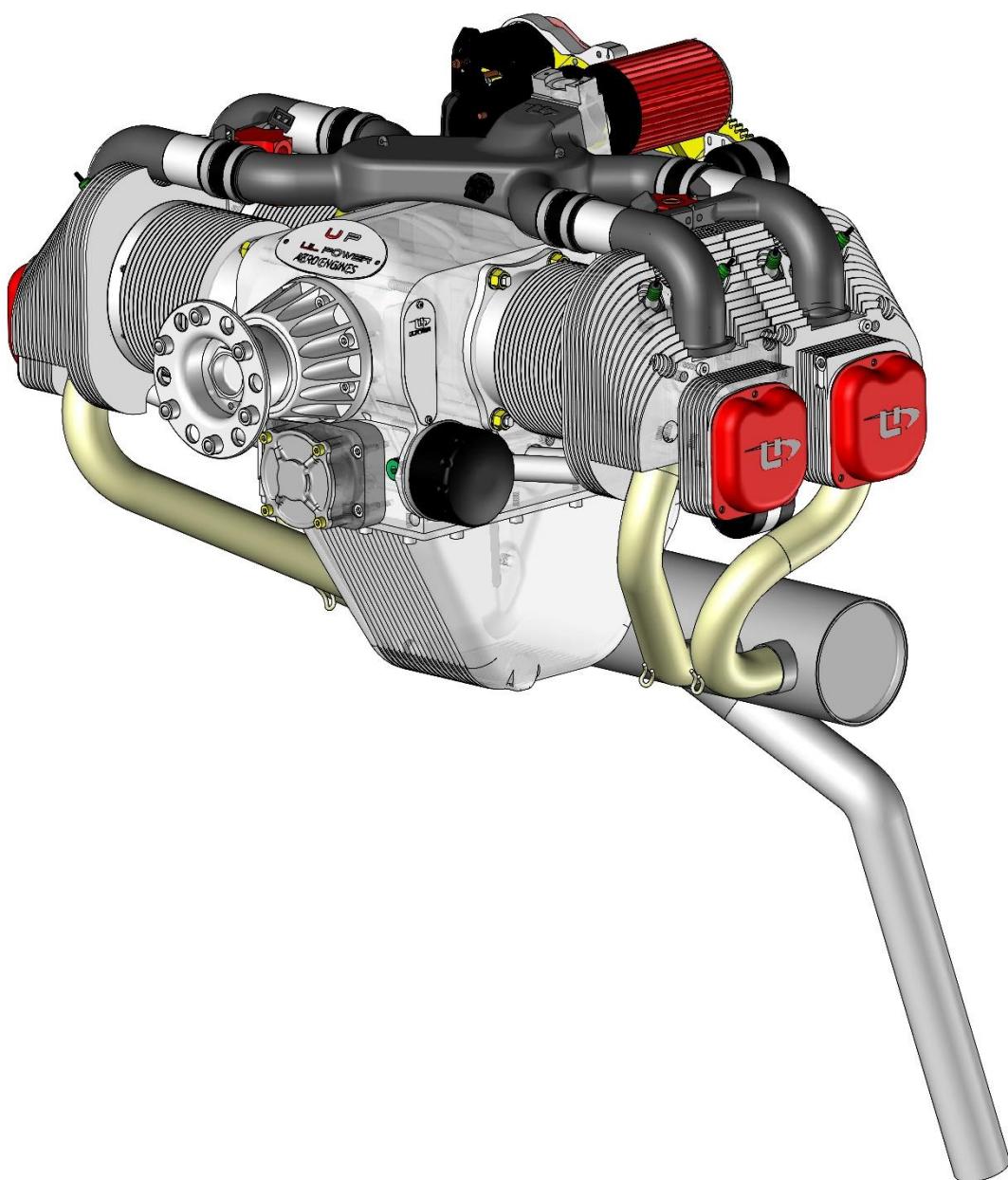


Figure 20

UL350



Engine description

General Description

- 4 stroke, 4 cylinder, horizontally opposed
- Electronic spark ignition (variable timing)
- Electronic multipoint fuel injection (pressure and temperature compensated)
- Electronic RPM limiter
- Direct propeller drive
- 5 bearing crankshaft with large thrust bearing (ball bearing type)
- Single central camshaft
- Push rods, Tappets and Over head valves
- Wet sump forced lubrication with integrated pressure regulator
- Ram air cooled cylinders and cylinder heads
- Integrated AC generator, external rectifier-regulator
- Electric starter
- Electric fuel pump and pressure regulator

Specifications

	UL350i	UL350iS	UL350iSA	UL350iHPS
Displacement:			3503 cc	
Bore:			105.6 mm	
Stroke:			100 mm	
Compression Ratio:	8 : 1		8,7:1	
Firing order:			1 - 3 - 2 - 4	
Direction of Rotation:		Clockwise - Pilot's view - Tractor configuration		
Torque (ISA conditions):	305Nm @ 2200rpm		320Nm @ 2400 rpm	
Power rating (ISA conditions):	120 hp @ 3300 rpm (116hp@ 2800rpm)	130hp @ 3300 rpm (123 hp @ 2800 rpm)	150hp @ 3500 rpm (131 hp @ 3000 rpm)	
Basic standard engine weight:	67 Kg (147,7lb)		70.2Kg (154,7lb)	78kg (172lb)
DC output:		30 Amp		
Oil capacity:	3 L (Min: 2,5L - Max3,5L)	4L (Min: 3,25L - Max4,25L)	3 L(Min: 2,5L - Max3,5L)	
Fuel:	<u>MOGAS</u> min. 95 octane rating <u>AVGAS</u> (100LL) <u>UL 91</u> (95 octa = 87MON = 91AKI)		<u>MOGAS</u> min. 98 octane rating <u>AVGAS</u> (100LL) <u>UL91</u> (98 Oct = 90MON = 94 AKI)	

Note:

The UL350iHPS is developed for helicopter applications. This engine is standard with forced air cooling and run at a high RPM level (3000-3500 rpm).

Technical data

Description of basic standard engine

The basic standard engine consists of the following:

- Engine assembly
- Injectors and spark plugs
- Intake manifold, throttle and air filter
- Electric starter motor
- Integrated AC generator
- Exhaust system
- Cooling ducts for cylinders and cylinder heads
- Standard propeller flange l = 55

Installed weight of standard engine

Dry weight of the basic standard engine from serial production: 67 kg (147,7 lb)

Following items are by default provided by ULPower have the following weight:

▪ Ignition Coils & leads:	3,0 kg (6,6 lb)
▪ ECU & wiring loom:	1,6 kg (3,5 lb)
▪ Exhaust, bolts, springs & seals:	3,6 kg (8 lb)
▪ Electric fuel pump:	0,7 kg (1,6 lb)
▪ Fuel filters (pre-filter & fine filter):	0,2 kg (0,4 lb)
▪ Oil/Air Separator & hoses:	0,7 kg (1,5 lb)
▪ Rectifier Regulator:	0,1 kg (0,2 lb)
▪ Rubber engine mounts:	0,3 kg (0,7 lb)
▪ 3,0 L engine lubricating oil:	2,6 kg (5,7 lb)
Possible fully operational engine weight UL350i / UL350iS:	79,5 kg (175 lb)

The UL350iSa engines (aerobatic version) are delivered with an inverted oil system containing :

• Gravity valve,	• Gravity oil - air separator
• Gravity oil pickup tube in the sump	• Breather adaptor on top of the engine
* Additional weight for the Aerobatic option: 3,2 kg (7,01 lb)	
* Extra 1L Oil: 0,866 kg (1,89 lb)	
* Possible fully operational engine weight UL350iSA: 83,5 kg (184 lb)	

The total operational weight depends on the accessories installed. In addition to the installed standard engine, following items are necessary accessories:

- Oil cooler and connections (depend on type of installation)
- Tacho, temperature and pressure sensors, wiring (and gauges)

Engine views

Dimensions of basic engine with standard propeller flange l=55

	pos. (+)	neg. (-)	total Σ
max. dimension in x-axis	83 mm (3,27 inch)	470 mm (18,50 inch)	553 mm (21,77 inch)
max. dimension in y-axis	367,8 mm (14,48 inch)	367,8 mm (14,48 inch)	735,6 mm (28,96 inch)
max. dimension in z-axis	182 mm (7,17 inch)	290 mm (11,42 inch)	472 mm (18,58 inch)

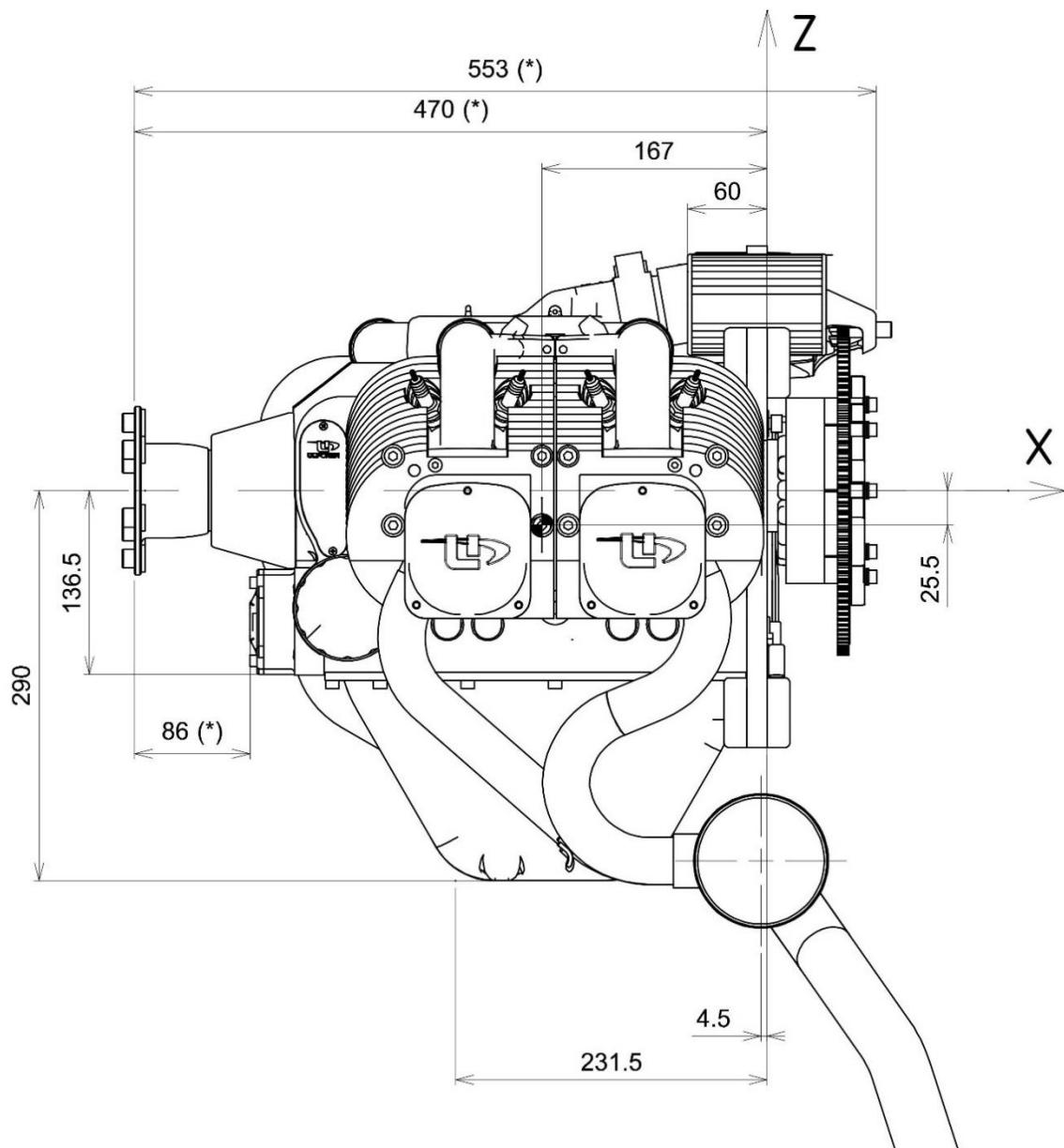


Figure 21

* dimensions for standard prop flange l = 55, different prop flanges are available

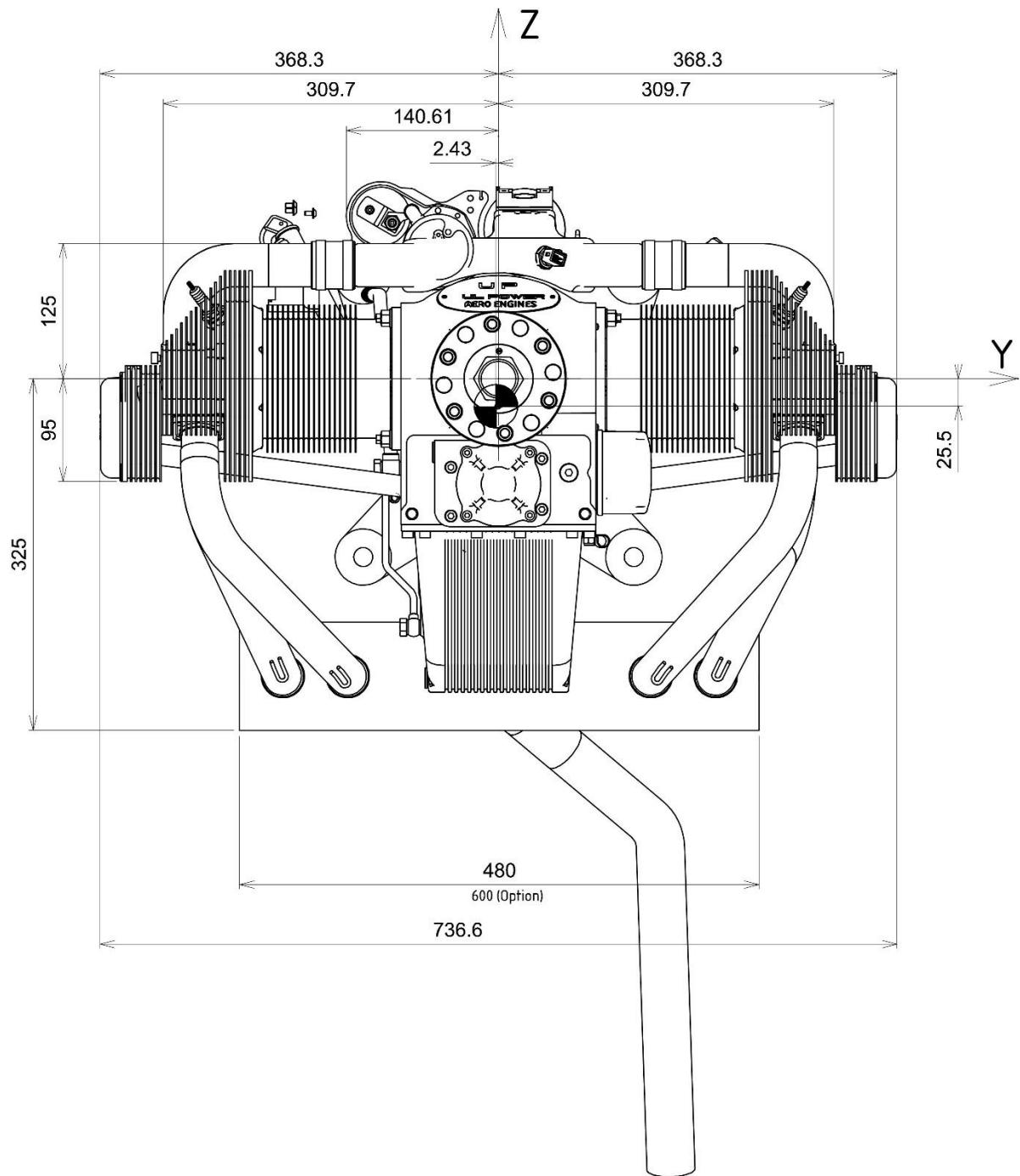


Figure 22

Centre of gravity of basic standard engine

centre of gravity in x-axis	-165 mm (-6,49" inch)
centre of gravity in y-axis	1 mm (-0,03" inch)
centre of gravity in z-axis	-26.5 mm (-1,04" inch)

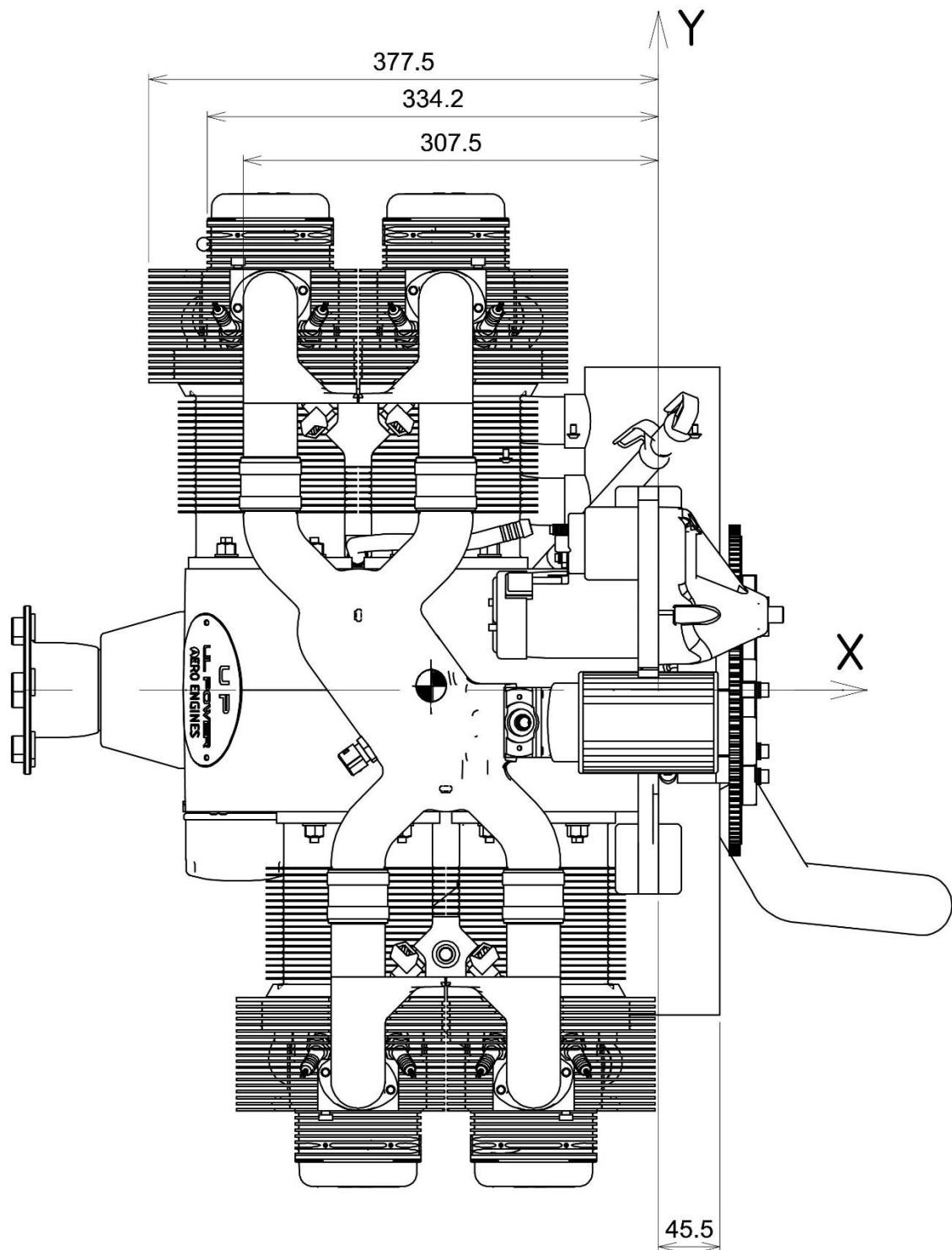


Figure 23

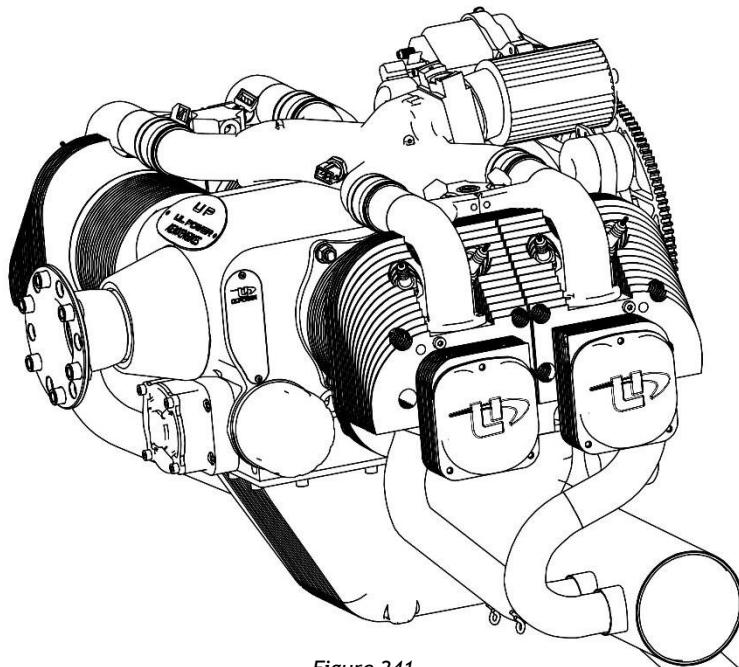


Figure 241

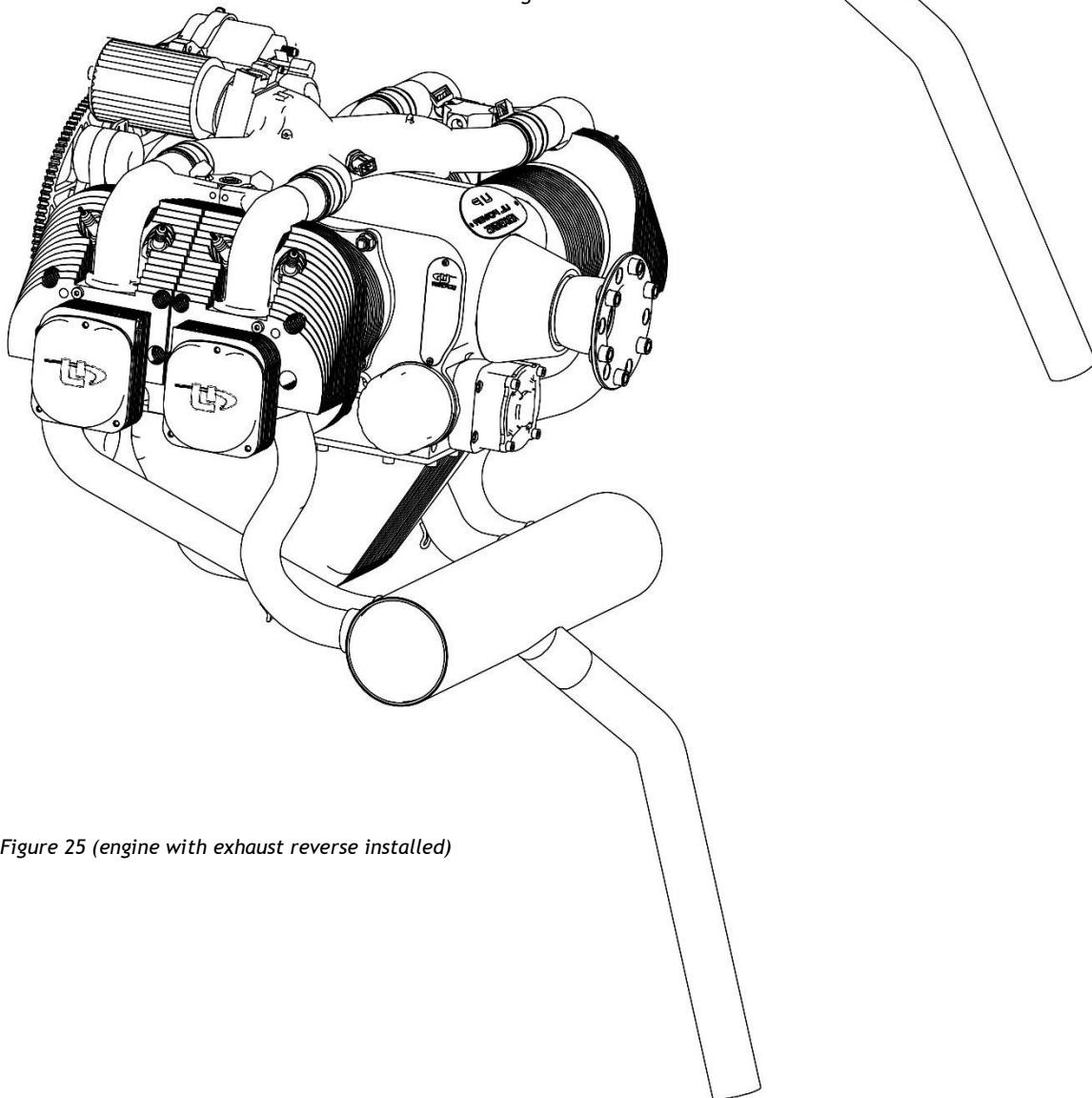


Figure 25 (engine with exhaust reverse installed)

Engine mounting position

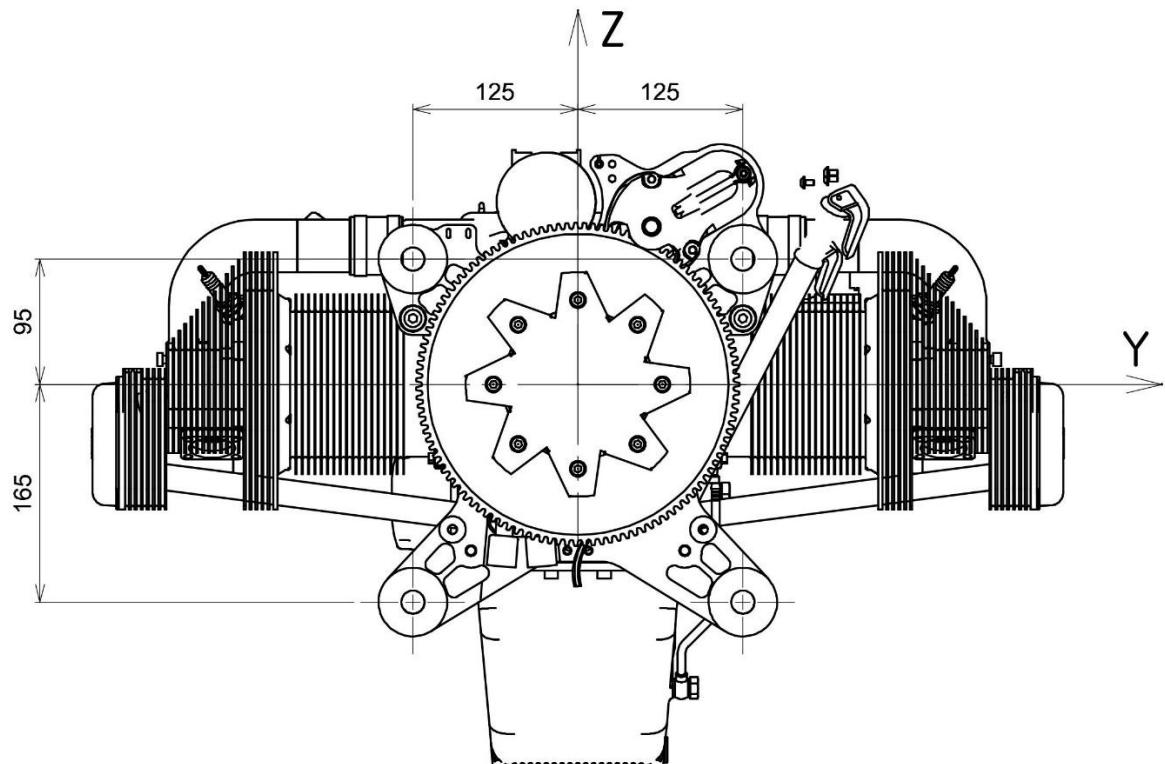


Figure 26: Mounting points

	Y-axis	Z-axis
attachment point 1	-125 mm	95 mm
attachment point 2	125 mm	95 mm
attachment point 3	-125 mm	165 mm
attachment point 4	125 mm	165 mm

As an option we can also provide a front engine mount plate.

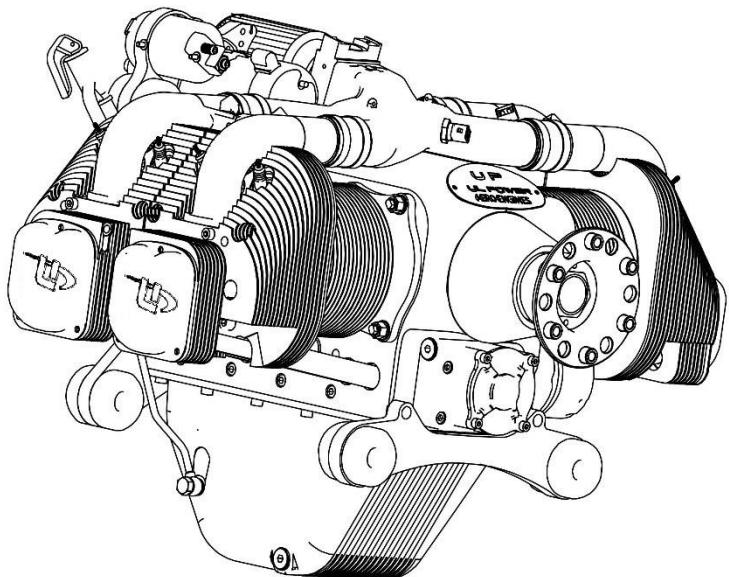


Figure 27

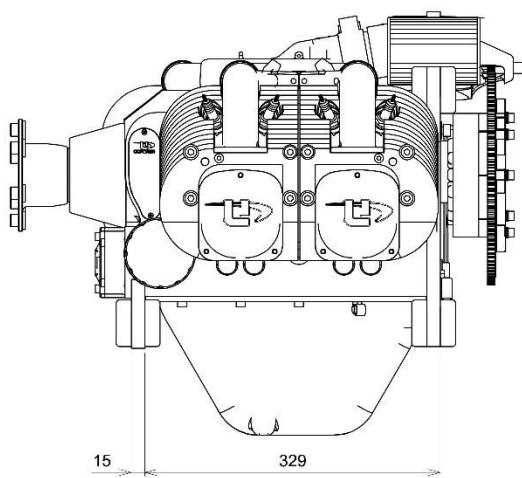


Figure 28

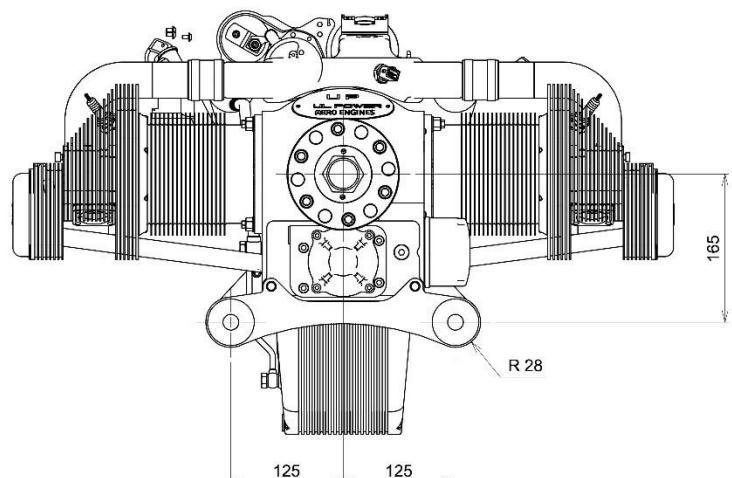


Figure 29

Engine views “Forced Cooling”

Optional we offer a “Forced Cooling” for all type UL350 engines.

Dimensions: see below

Extra weight: 11Kg

An oil cooler is integrated in the system.

Front Engine Mount plate is installed. Engine fixing points are the 4 lower points.

A muffler or 4 in one exhaust can be installed.

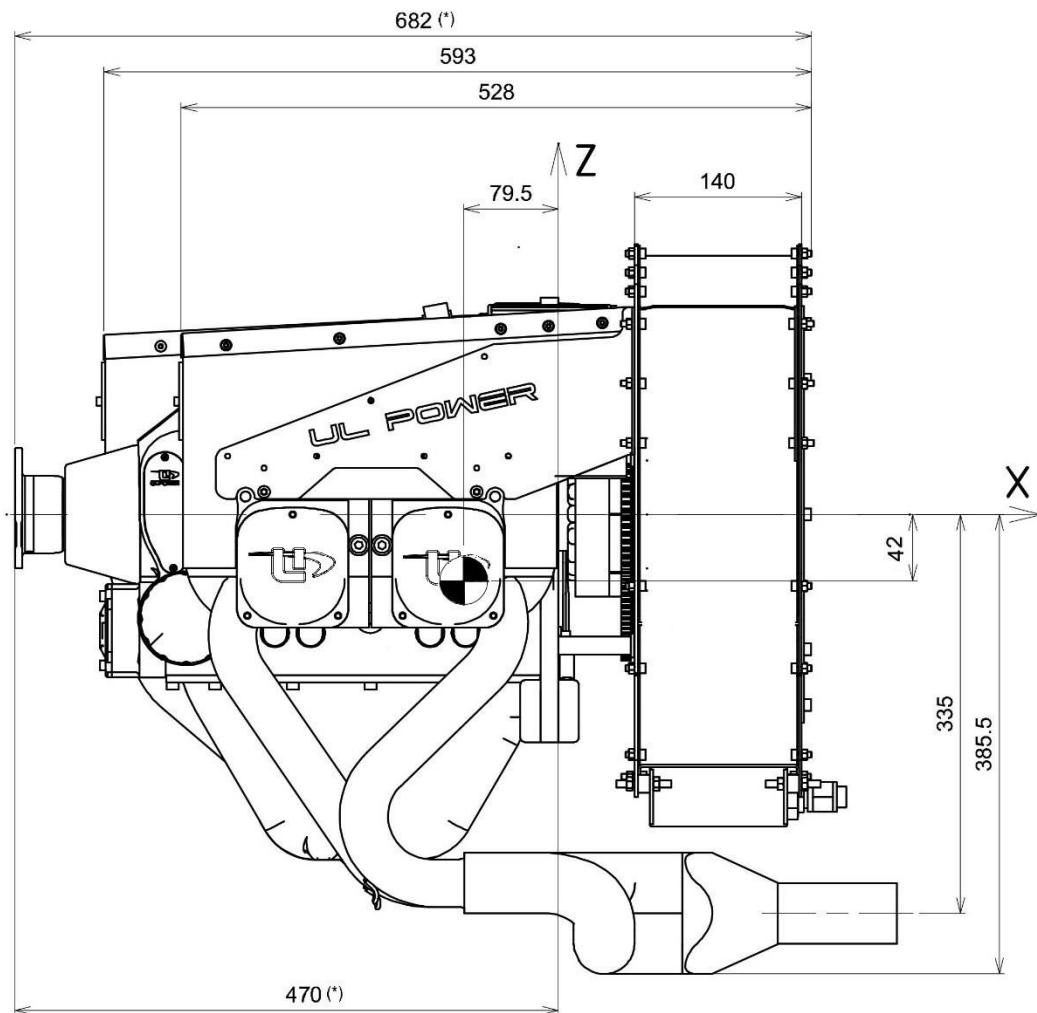


Figure 30 (Optional “Forced Cooling”)

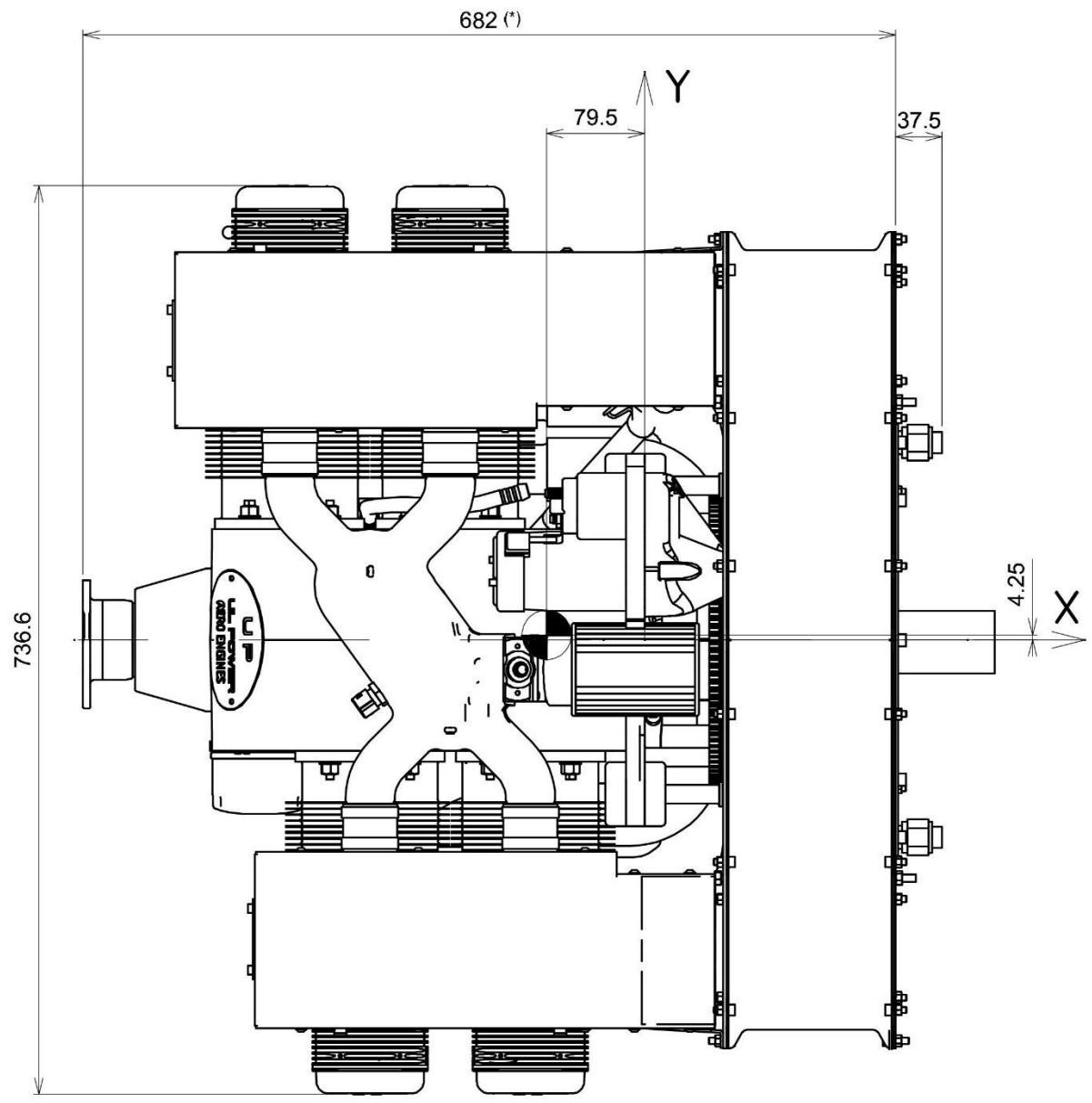


Figure 31 (Optional “Forced Cooling”)

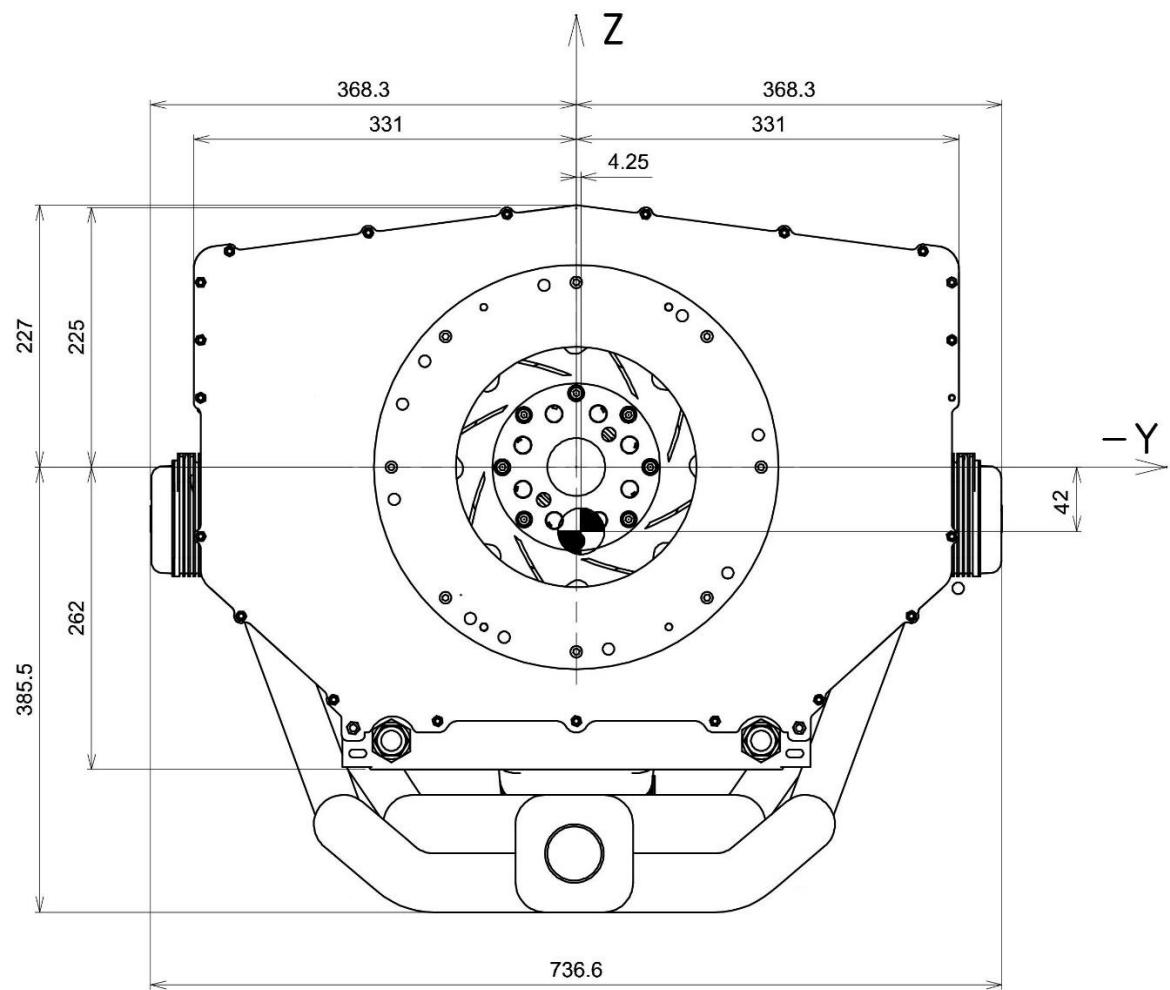


Figure 32 (Optional “Forced Cooling”)

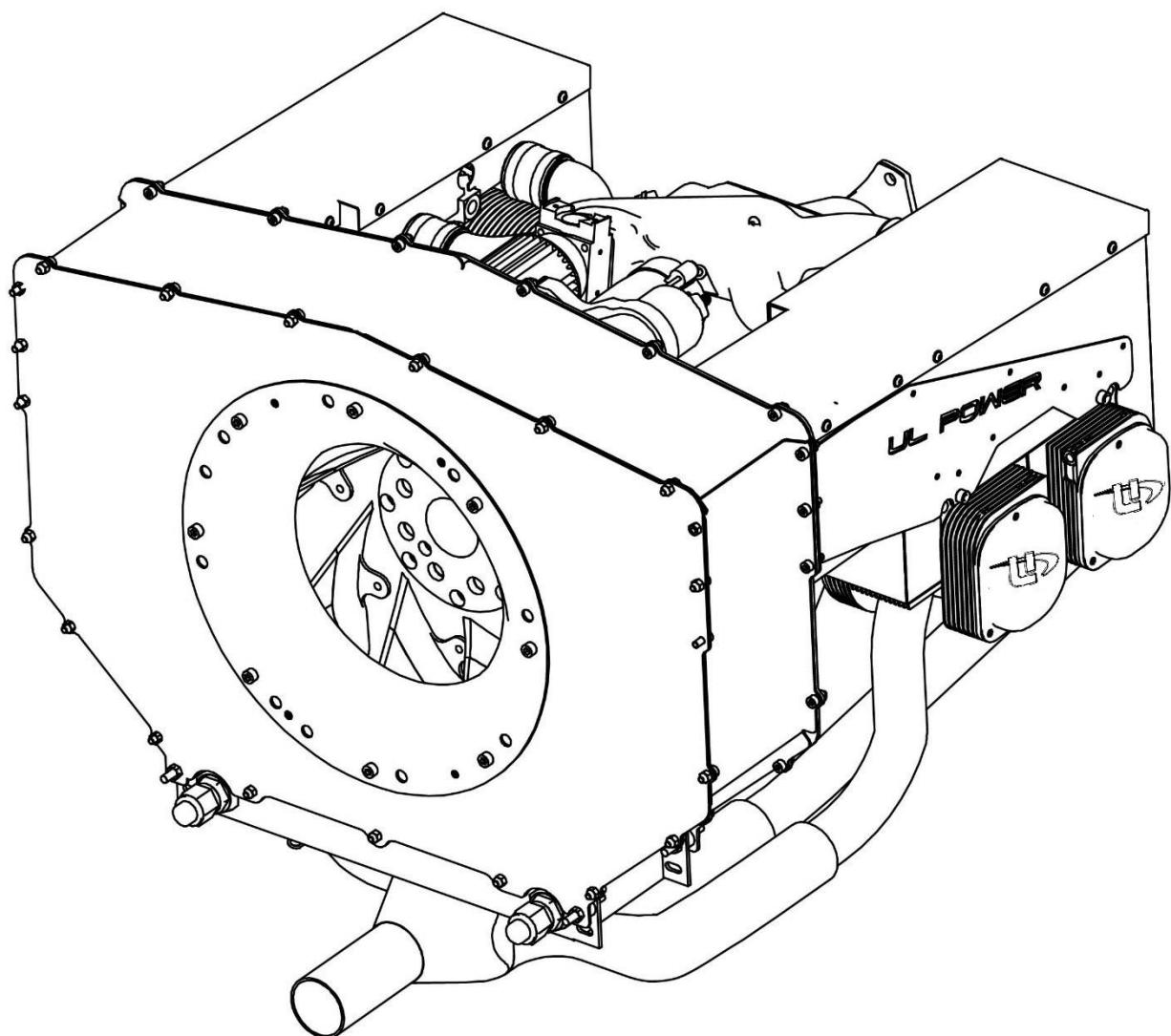


Figure 33 (Optional "Forced Cooling")

Exhaust system : dimensions

Unless otherwise agreed, the motor will be delivered with the UL power exhaust system. The system is designed to reduce the noise to an acceptable level without loosing power.

With muffler

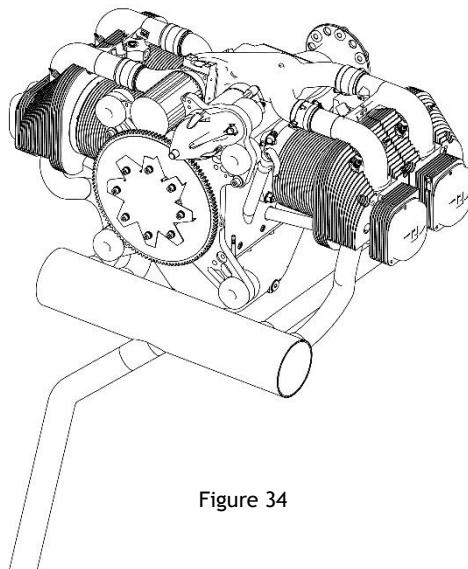
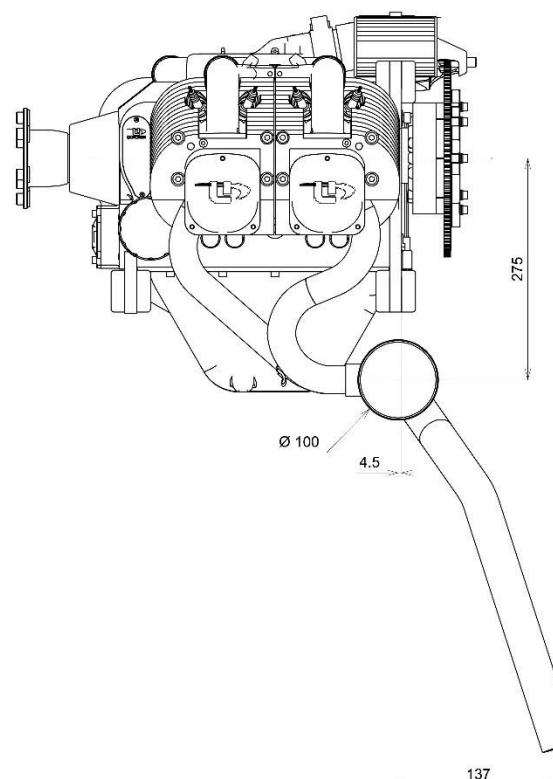
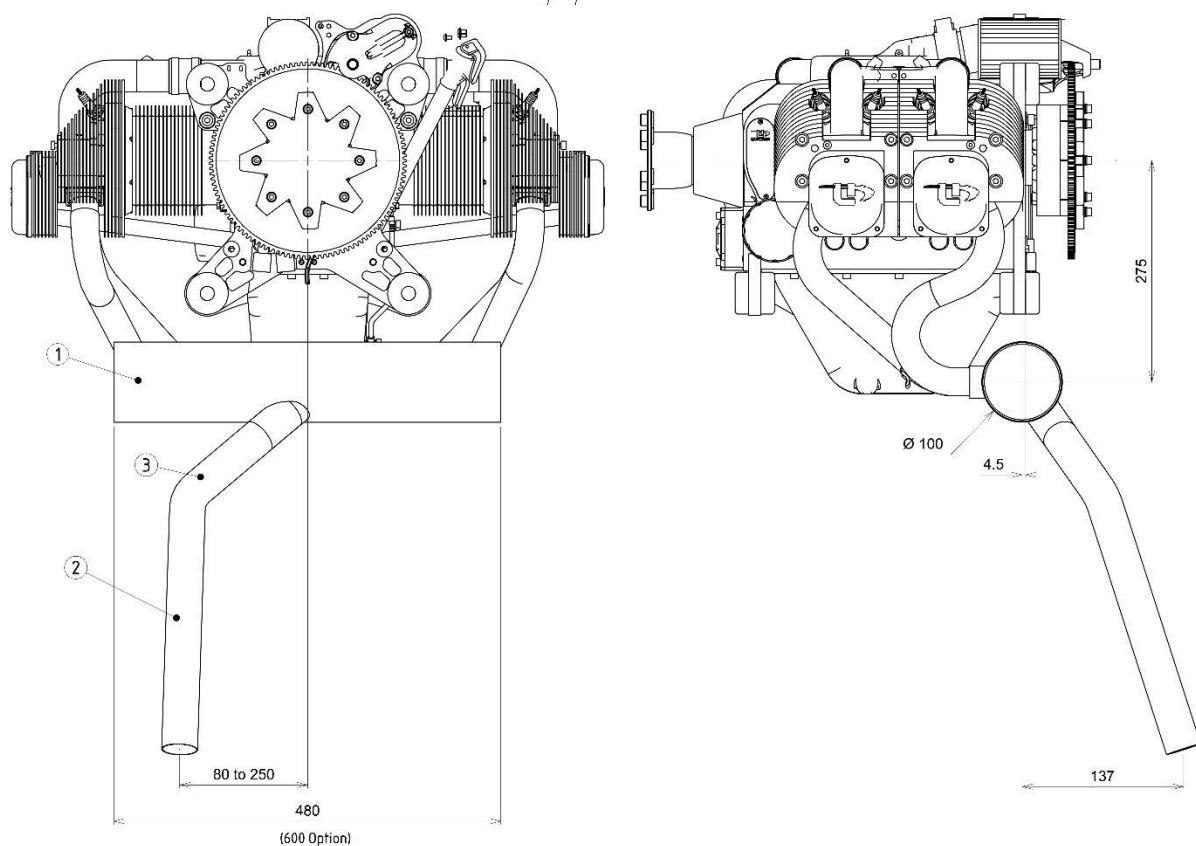
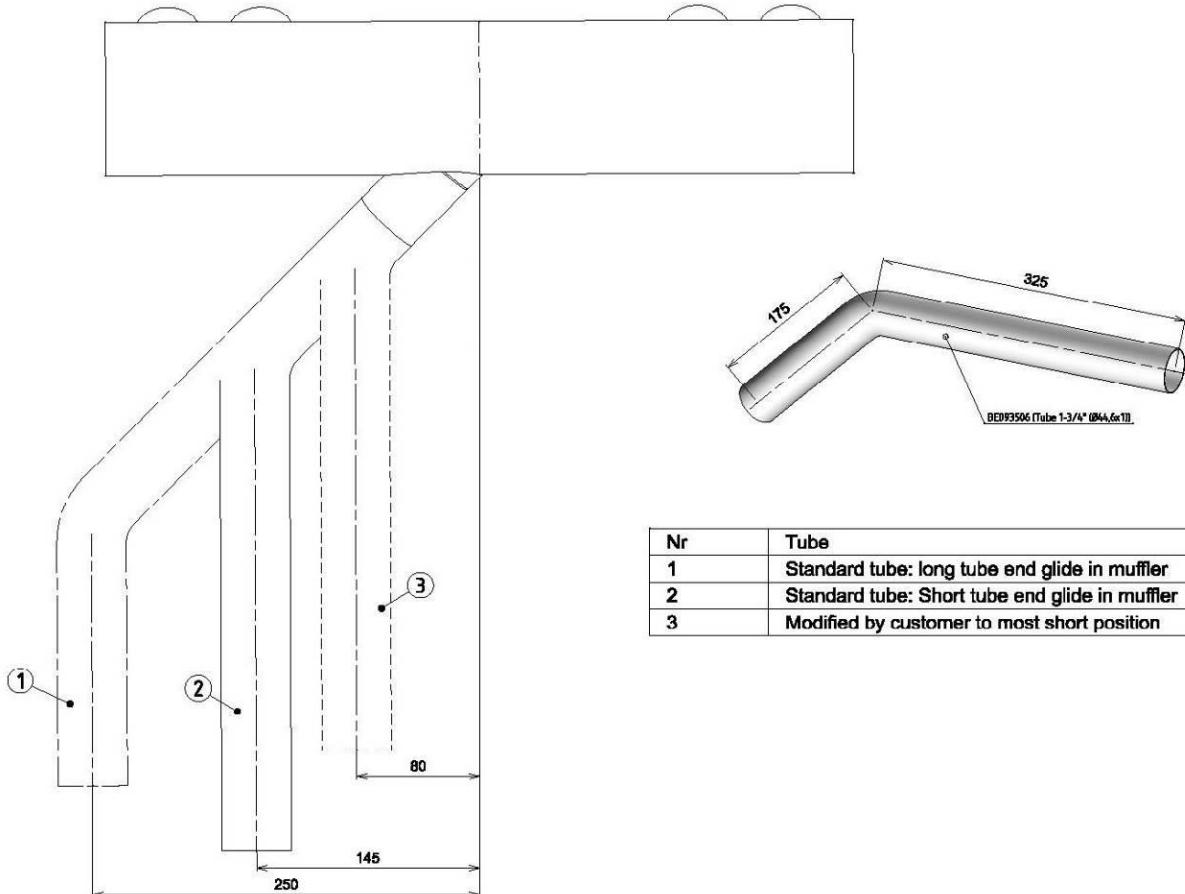


Figure 34



The final exhaust tube (2) (ULP partn° BE093506) is delivered with separate 2 brackets to fix the spring. The tube can be installed one way or the other in the muffler (1). Even the tube (2) can be cut according wishes. This way, it is possible to change the distance between centreline engine and centreline outlet tube from 80mm to 250mm. After installation, the brackets must be welded to the tube.



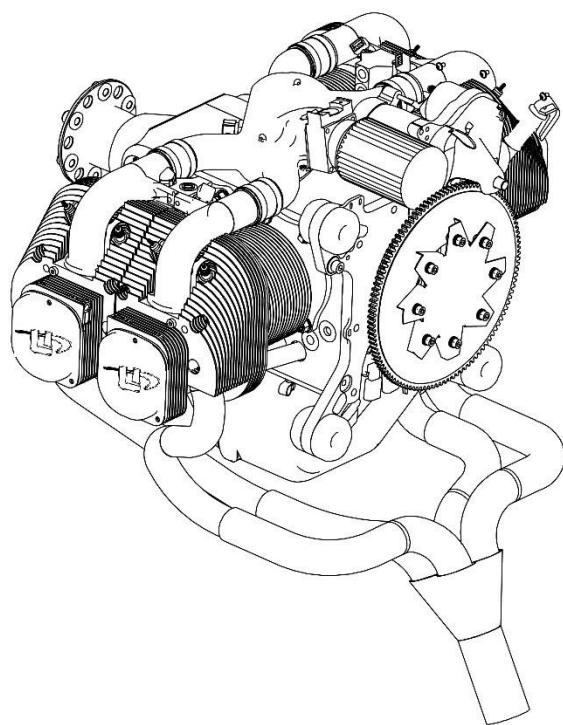
With 4 in 1 collector:

Figure 37

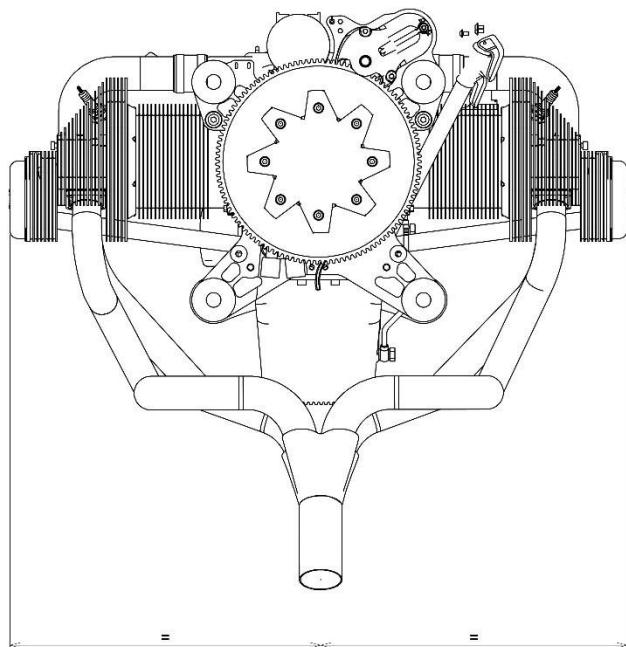


Figure 38

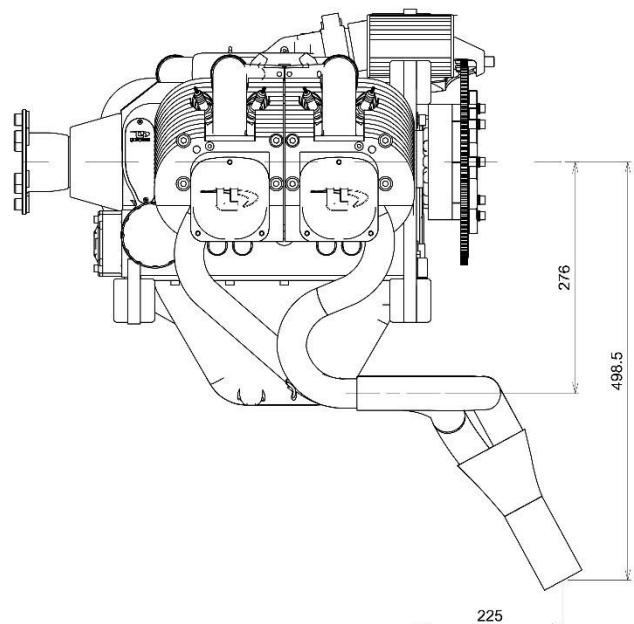
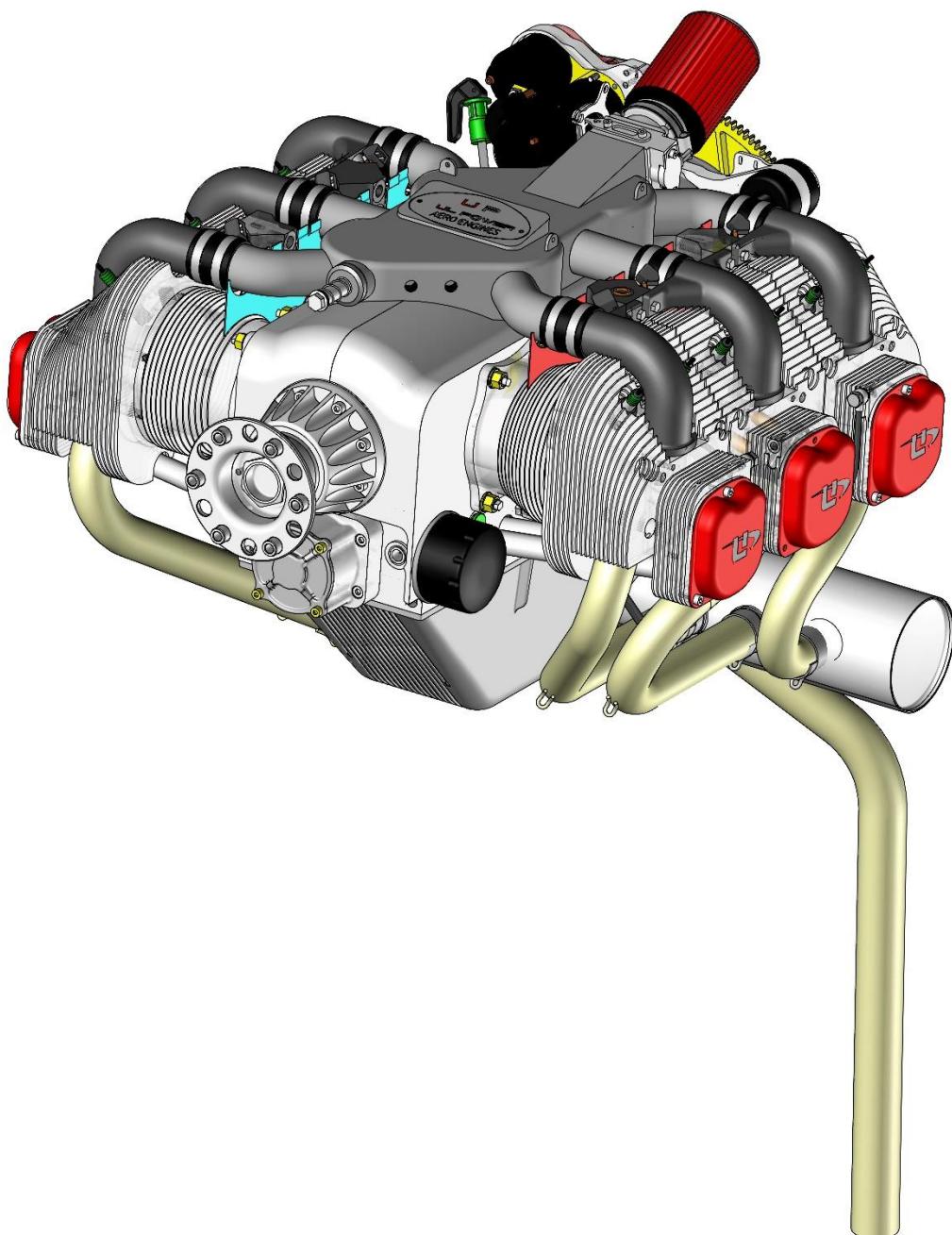


Figure 39

UL390



Engine description

General Description

- 4 stroke, 6 cylinder, horizontally opposed
- Electronic spark ignition (variable timing)
- Electronic multipoint fuel injection (pressure and temperature compensated)
- Electronic RPM limiter
- Direct propeller drive
- 7 bearing crankshaft with large thrust bearing (ball bearing type)
- Single central camshaft
- Push rods, Tappets and Over head valves
- Wet sump forced lubrication with integrated pressure regulator
- Ram air cooled cylinders and cylinder heads
- Integrated AC generator, external rectifier-regulator
- Electric starter
- Electric fuel pump and pressure regulator

Specifications

	UL390i	UL390iS	UL390iSA
Displacement:		3888cc	
Bore:		105.6 mm	
Stroke:		74 mm	
Compression Ratio:	8,16 : 1		9,1:1
Firing order:		1 - 4 - 5 - 2 - 3 - 6	
Direction of Rotation:	Clockwise - Pilot's view - Tractor configuration		
Torque (ISA conditions):	320Nm @ 2800rpm	370Nm @ 2800 rpm	
Power rating (ISA conditions):	140 hp @ 3300 rpm (130 hp @ 2800 rpm)	160hp @ 3300 rpm (145Hp @ 2800 rpm)	160hp @ 3200 rpm (145 hp @ 2800 rpm)
Basic standard engine weight:	85,3 kg (188lb)		88,5 kg (194lb)
DC output:	50 Amp		
Oil capacity:	4 L (Min: 3,5L - Max: 4,5L)		5 L (Min: 4,5L - Max: 5,5L)
Fuel:	MOGAS min. 95 octane rating AVGAS (100LL) UL 91 (95 octa = 87MON = 91AKI)	MOGAS min. 98 octane rating AVGAS (100LL) UL91 (98 Oct = 90MON = 94 AKI)	

Technical data

Description of basic standard engine

The basic standard engine consists of the following:

- Engine assembly
- Injectors and spark plugs
- Intake manifold, throttle and air filter
- Electric starter motor
- Integrated AC generator
- Exhaust system
- Propeller flange L = 55 (Standard)

Installed weight of standard engine

Dry weight of the basic standard engine from serial production: 85.3 kg (188 lb)

Following items are by default provided by ULPower and have the following weight:

▪ Ignition Coils & leads:	.....	3,0 kg (6,6 lb)
▪ ECU & wiring loom:	.....	1,6 kg (3,5 lb)
▪ Exhaust, bolts, springs & seals:	.....	3,6 kg (8 lb)
▪ Electric fuel pump:	.....	0,7 kg (1,6 lb)
▪ Fuel filters (pre-filter & fine filter):	.....	0,2 kg (0,4 lb)
▪ Oil/Air Separator & hoses:	.....	0,7 kg (1,5 lb)
▪ Rectifier Regulator:	.....	0,1 kg (0,2 lb)
▪ Rubber engine mounts:	.....	0,3 kg (0,7 lb)
▪ 4 L engine lubricating oil:	.....	3,5 kg (7,7 lb)
Possible fully operational engine weight:		100 kg (220.4 lb)

The UL 390iSA engines (aerobatic version) are delivered with an inverted oil system, containing :

- | | |
|---------------------------------------|---|
| ▪ Gravity valve, | ▪ Gravity oil - air separator |
| ▪ Gravity oil pickup tube in the sump | ▪ Breather adaptor on top of the engine |

Additional weight for the Aerobatic option : 3,2 kg (7,0 lb)

* Extra 1L Oil: 0,866 kg (1,8 lb)

* Possible fully operational engine weight UL390iSA: 104.06 kg (229.4 lb)

The total operational weight will depend on the installed accessories. In addition to the basic standard engine, following items are necessary accessories:

- Oil cooler and connections (depend on type of installation)
- Tacho, temperature and pressure sensors, wiring (and gauges)

Engine views

Dimensions of basic standard engine (With standard propeller flange L = 55)

	pos. (+)	neg. (-)	total Σ
max. dimension in x-axis	92.5 mm (3,641 inch)	630 mm (24,803 inch)	722.5 mm (28,444 inch)
max. dimension in y-axis	327 mm (14,488 inch)	327 mm (14,488 inch)	654 mm (28,976 inch)
max. dimension in z-axis	182 mm (7,165 inch)	290 mm (11,417 inch)	472 mm (18,582 inch)

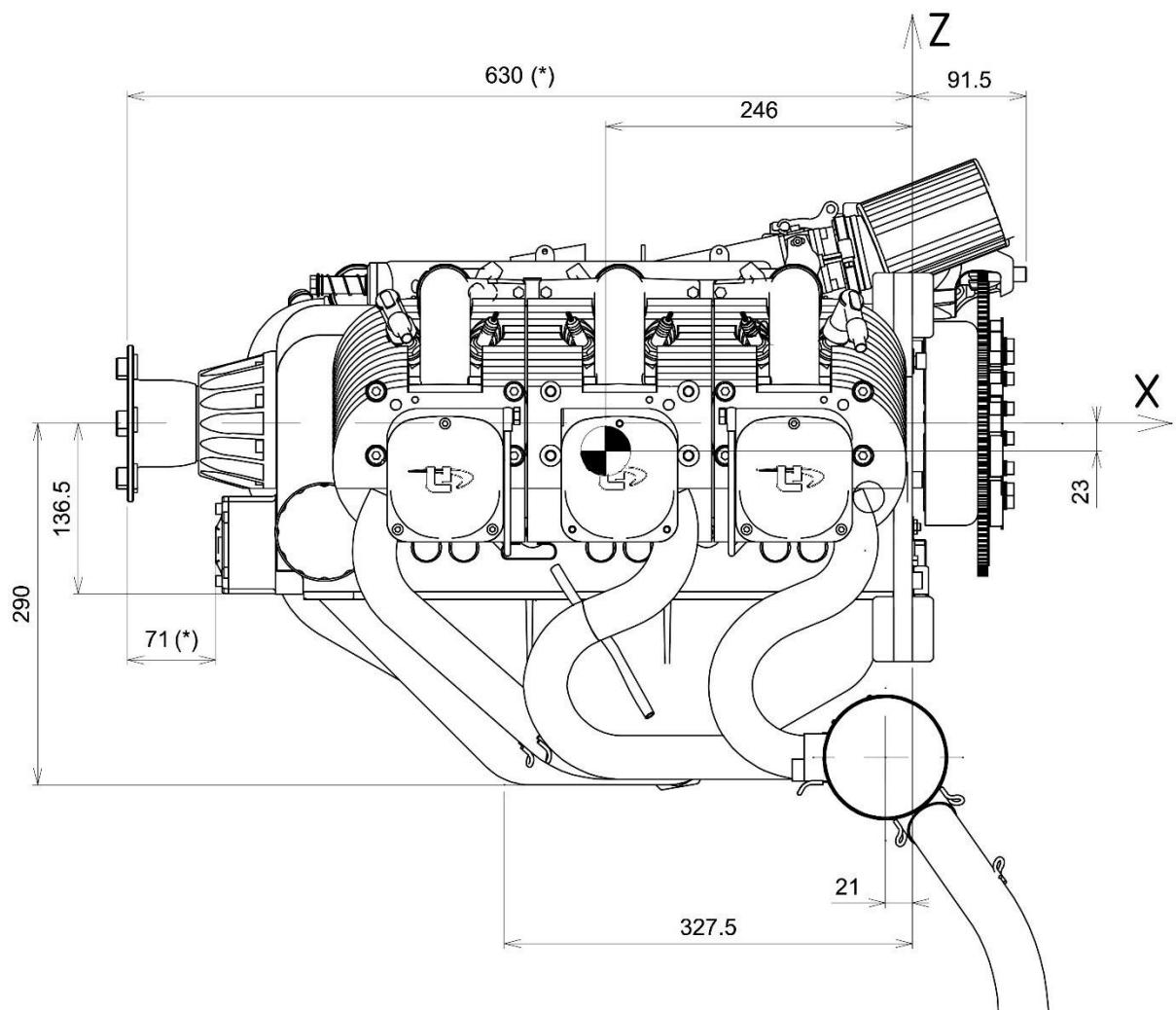
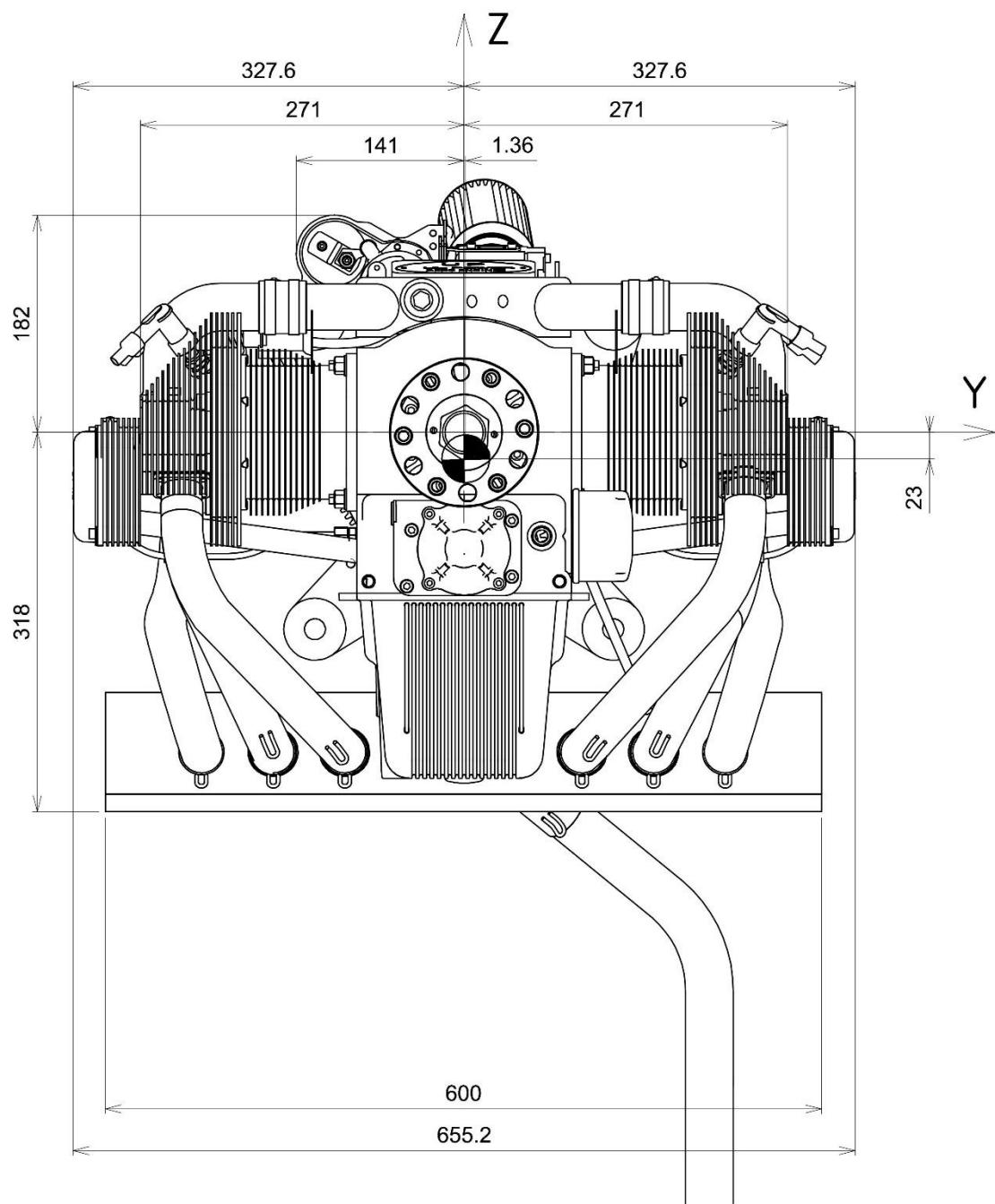


Figure 40

* dimensions for standard prop flange l = 55, different prop flanges are available



Centre of gravity of basic standard engine

centre of gravity in x-axis	-245.0 mm (-9,645" inch)
centre of gravity in y-axis	0 mm (-0,0" inch)
centre of gravity in z-axis	-21 mm (-0.826" inch)

Figure 40

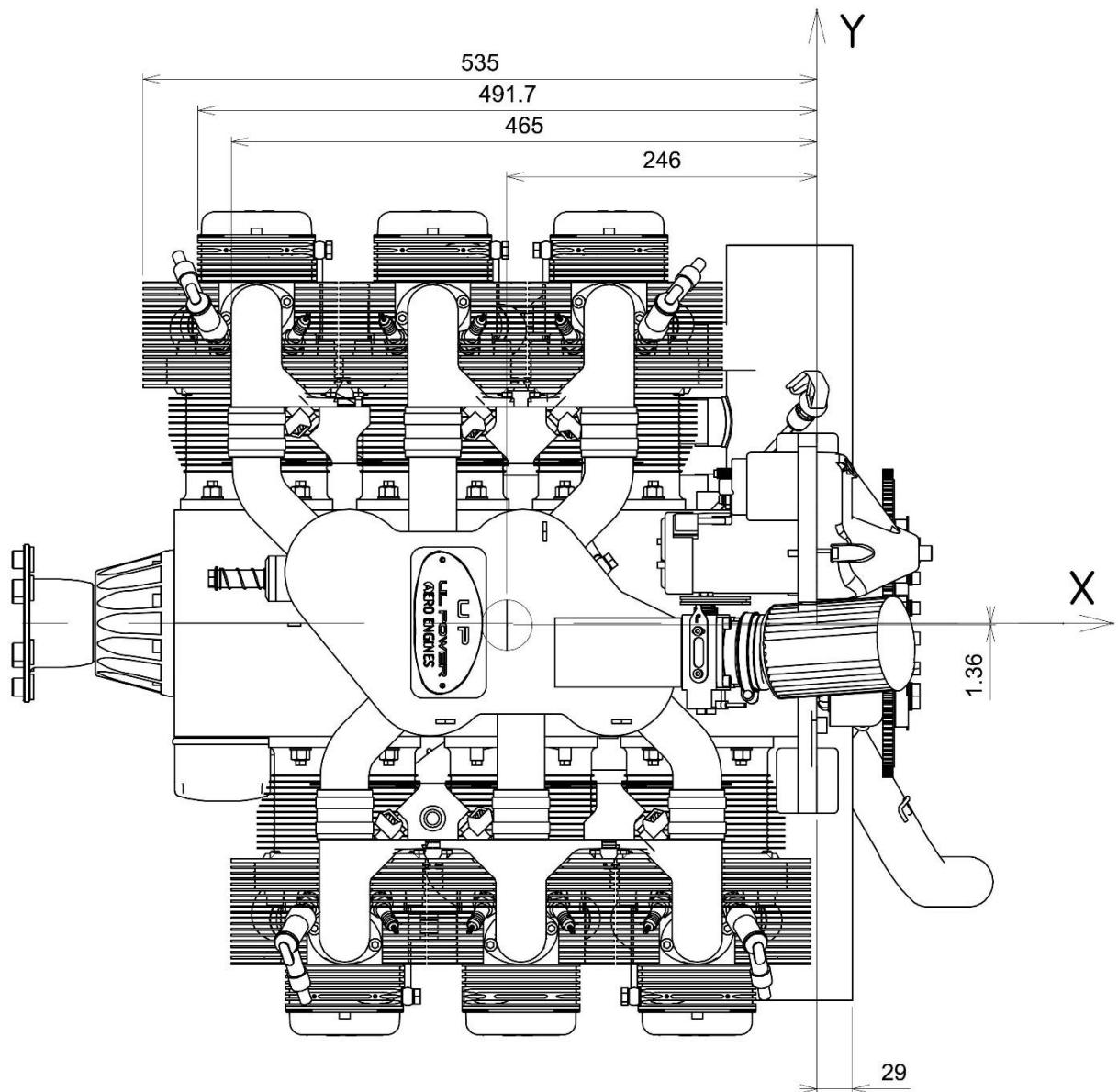


Figure 41

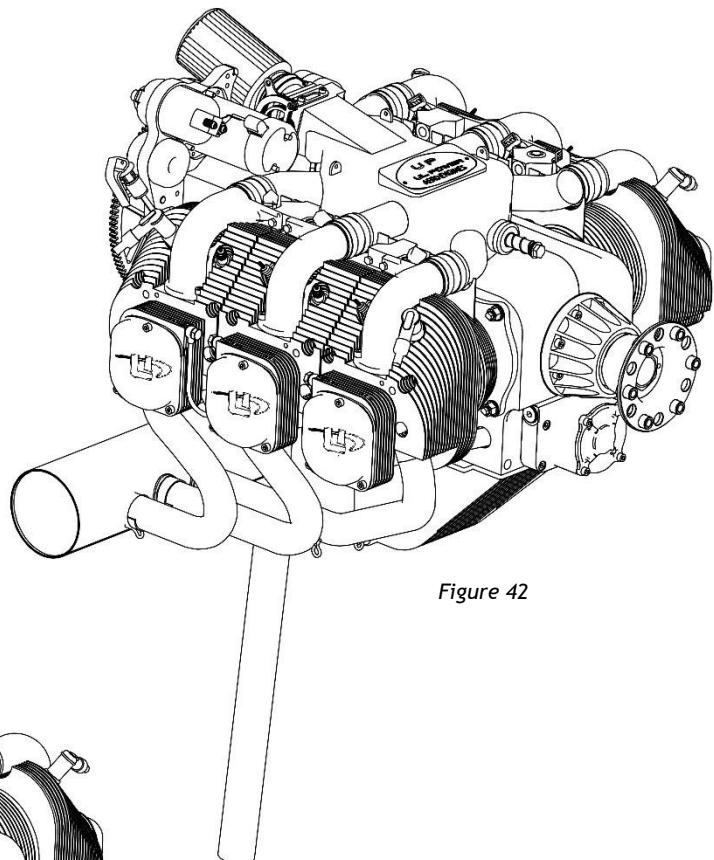


Figure 42

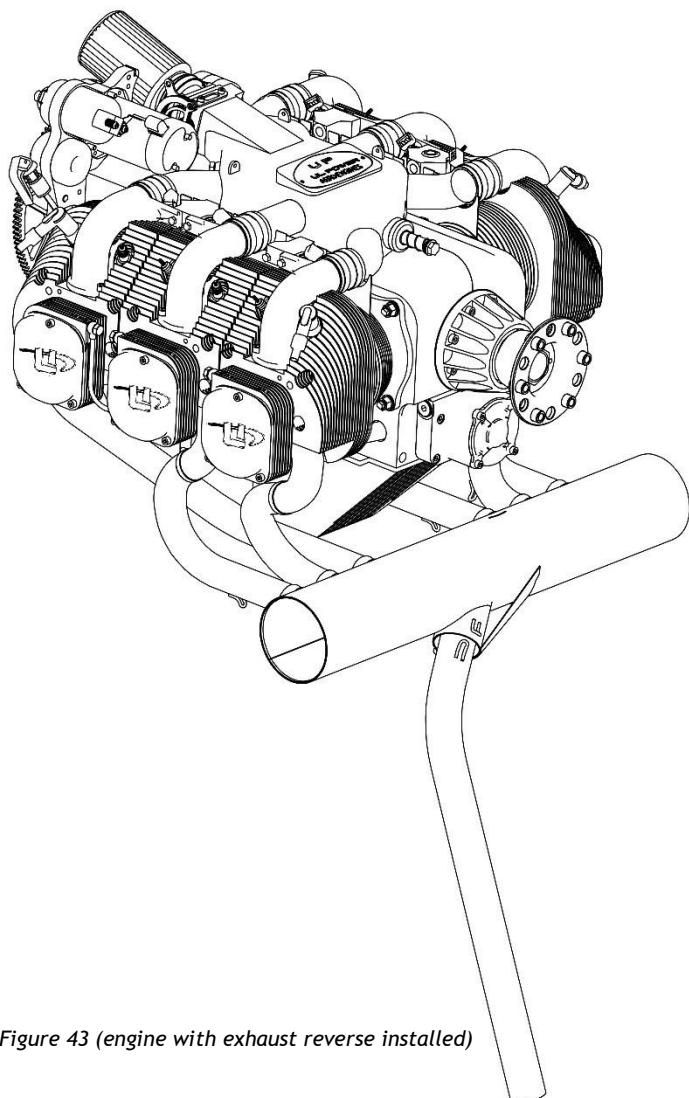


Figure 43 (engine with exhaust reverse installed)

Engine views “Forced Cooling”

Optional we offer a “Forced Cooling” for all type UL390 engines.

Dimensions: see below

Extra weight: 12Kg

An oil cooler is integrated in the system.

Front Engine Mount plate is installed. Engine fixing points are the 4 lower points.

A muffler or 4 in one exhaust can be installed.

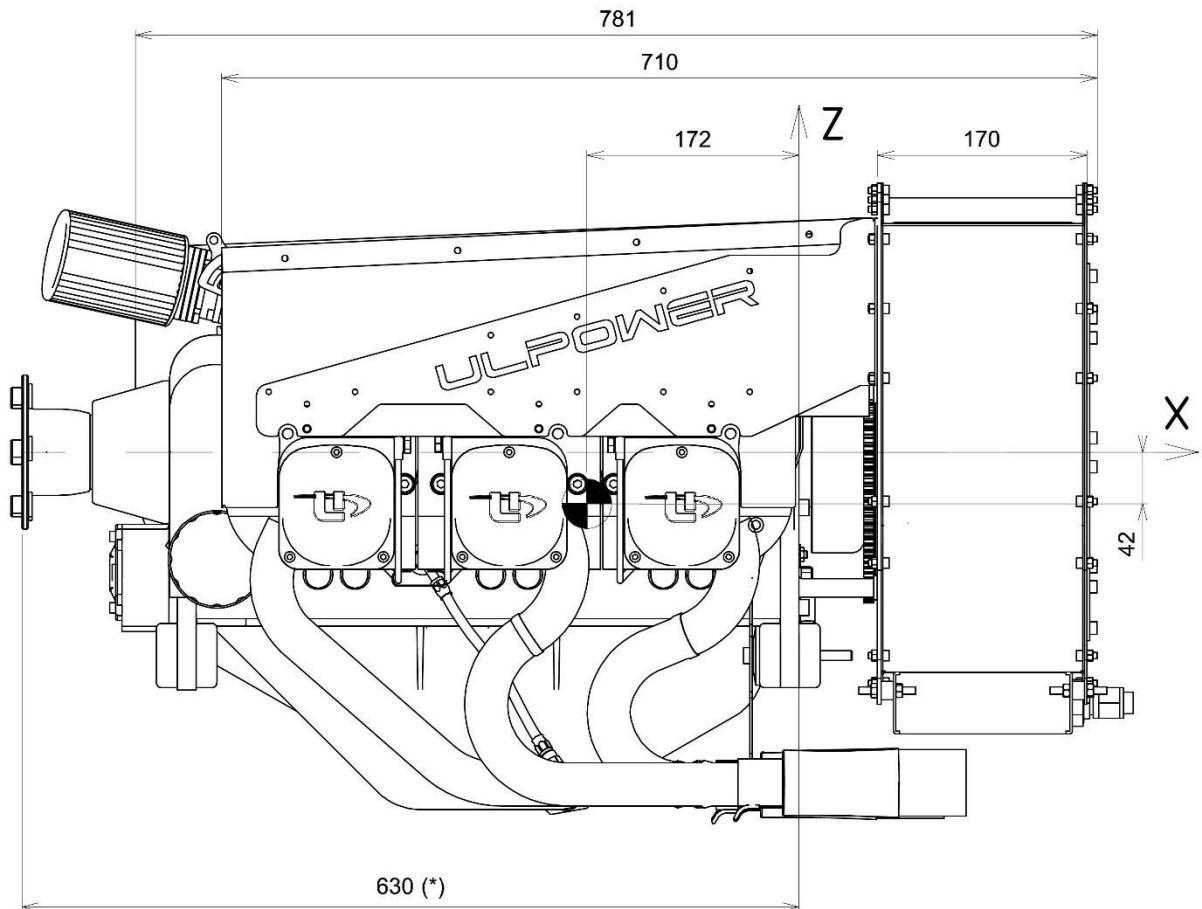


Figure 44 (Optional “Forced Cooling”)

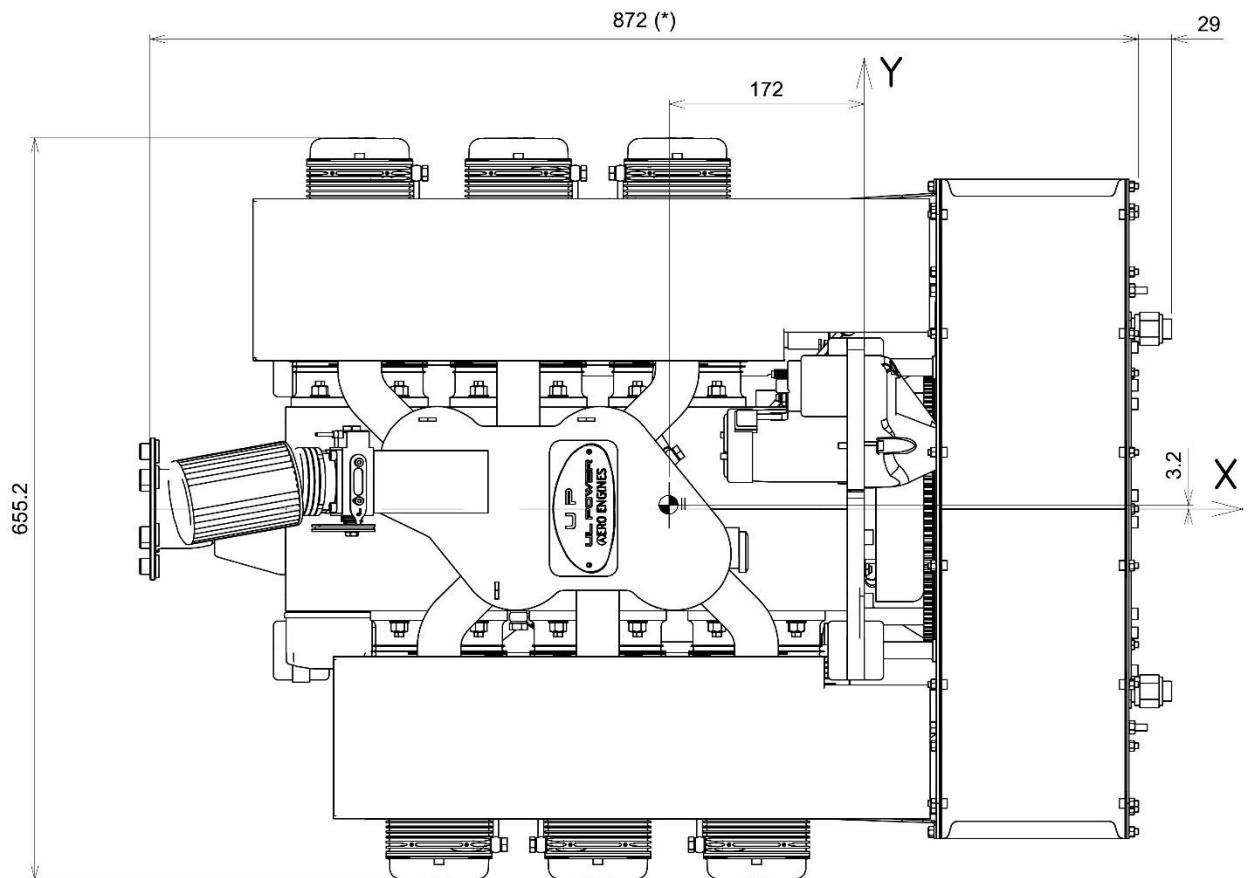


Figure 45 (Optional “Forced Cooling”)

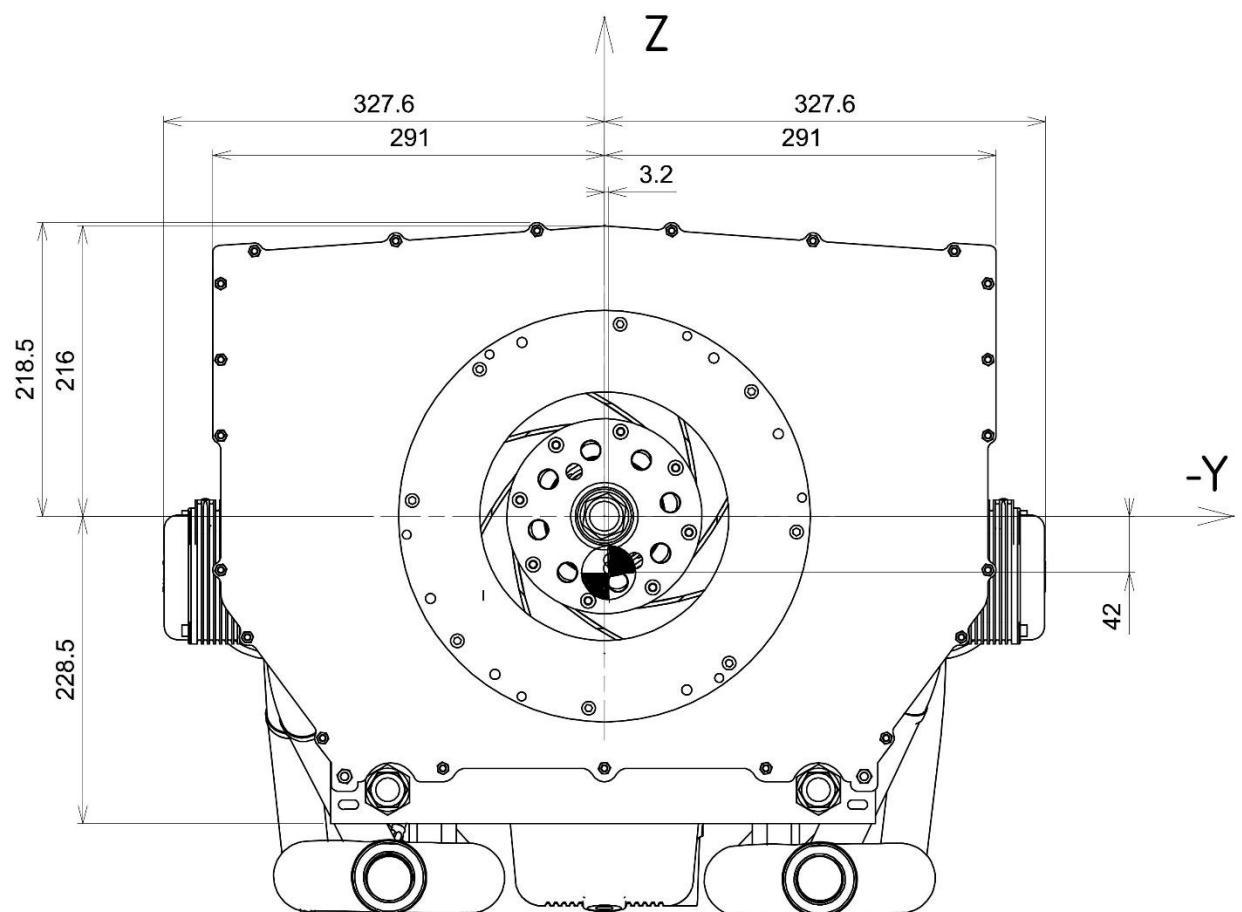


Figure 46 (Optional "Forced Cooling")

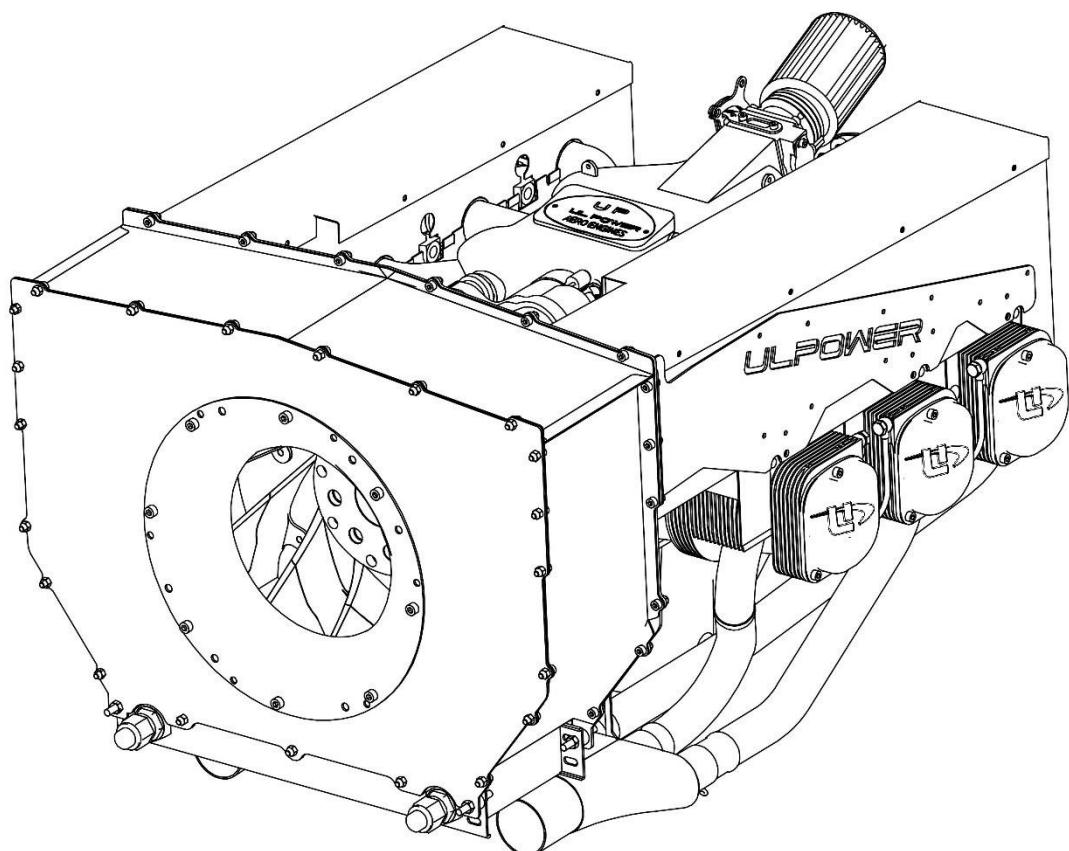


Figure 47 (Optional “Forced Cooling”)

Engine mounting position

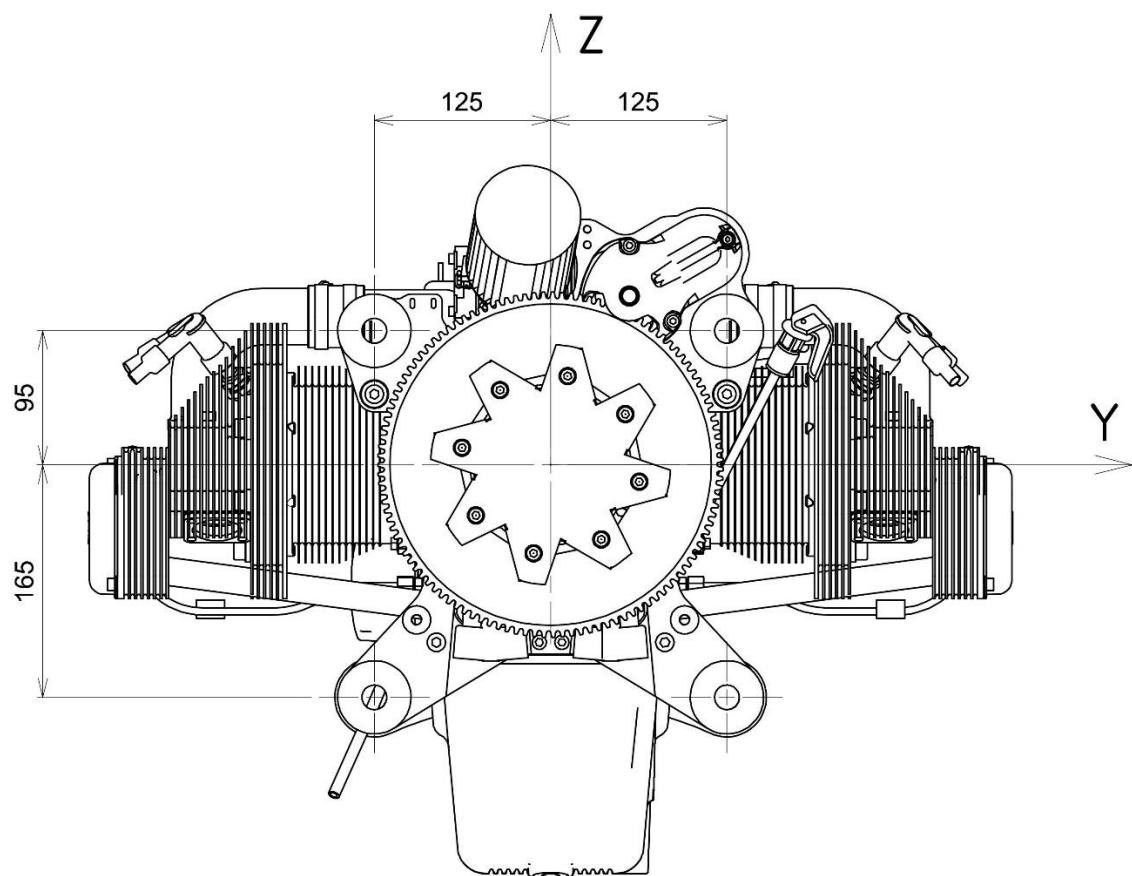


Figure 48: Mounting points

	Y-axis	Z-axis
attachment point 1	-125 mm	95 mm
attachment point 2	125 mm	95 mm
attachment point 3	-125 mm	165 mm
attachment point 4	125 mm	165 mm

As an option we can also provide a front engine mount plate.

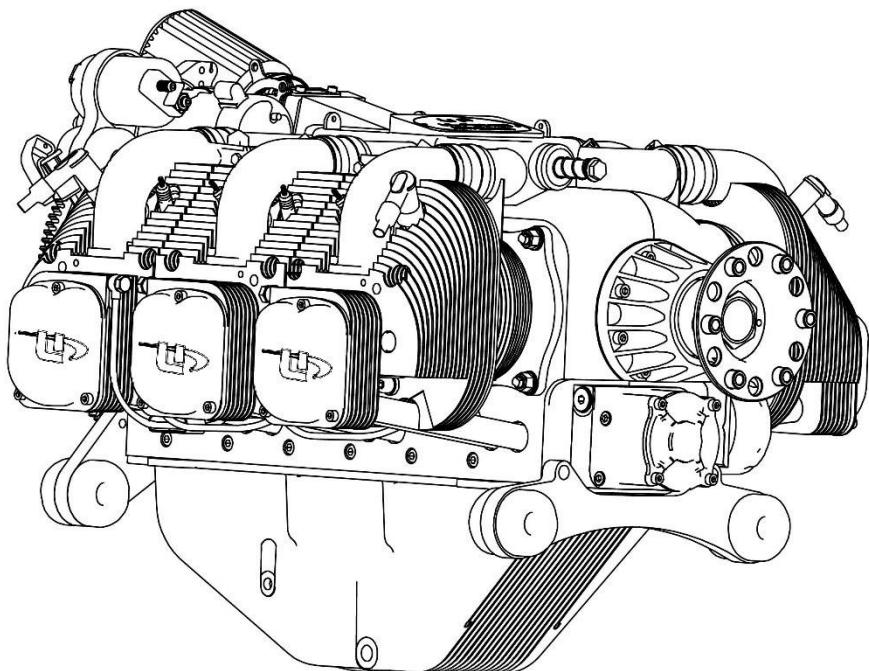


Figure 49

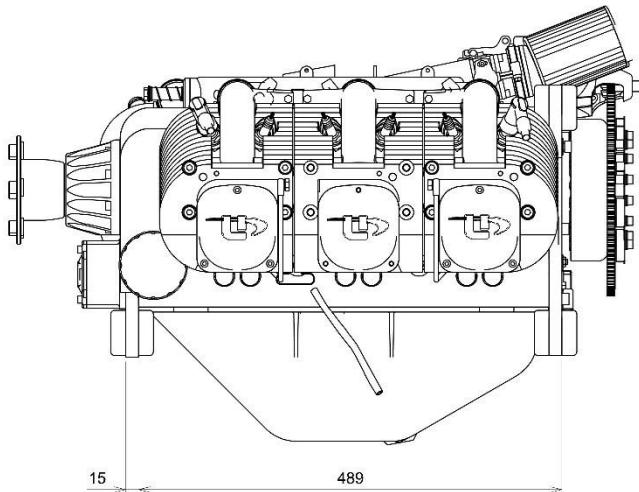


Figure 49

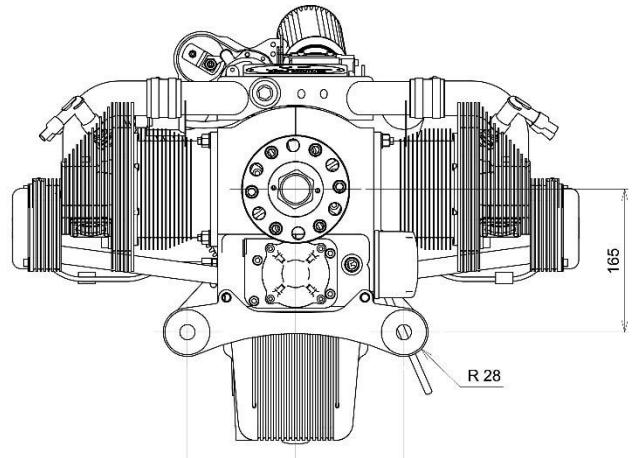


Figure 50

Exhaust system: dimensions

Unless otherwise agreed, the motor will be delivered with the UL power exhaust system. The system is designed to reduce the noise to an acceptable level without loosing power.

With muffler

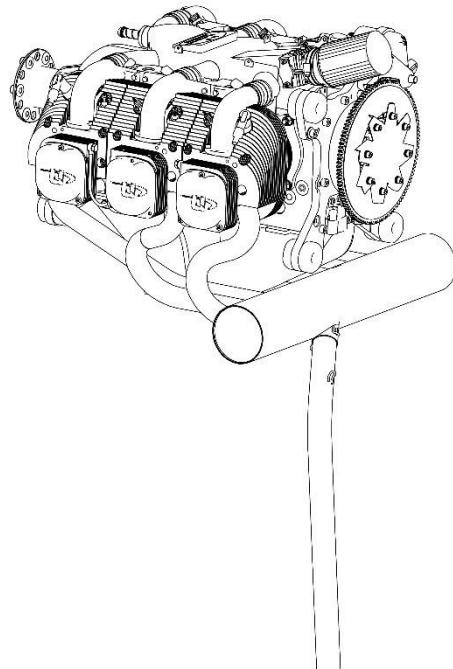


Figure 51

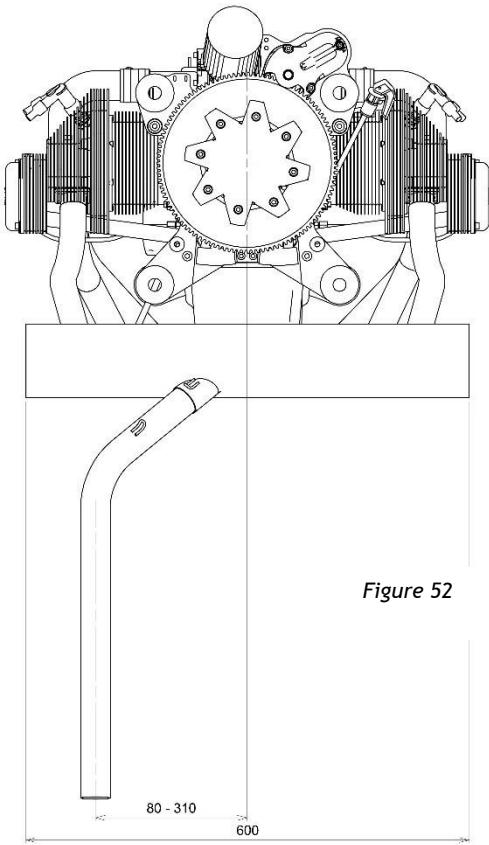


Figure 52

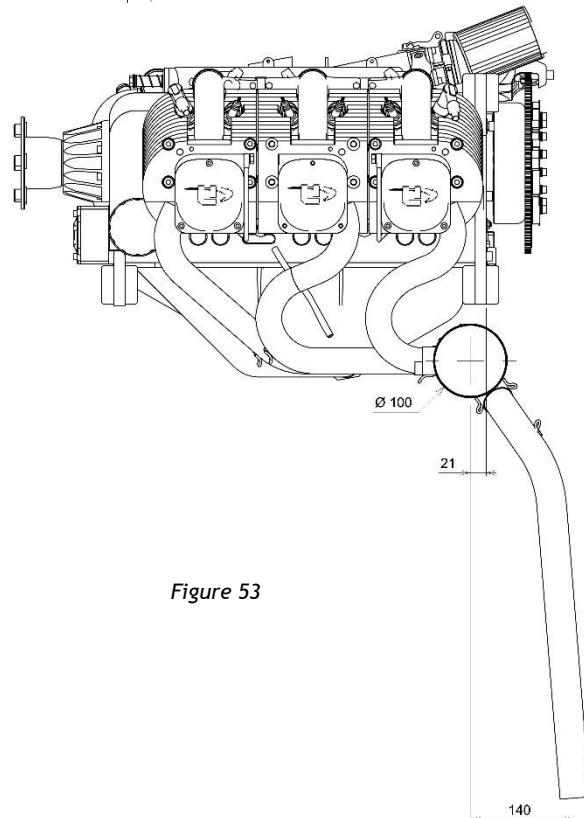
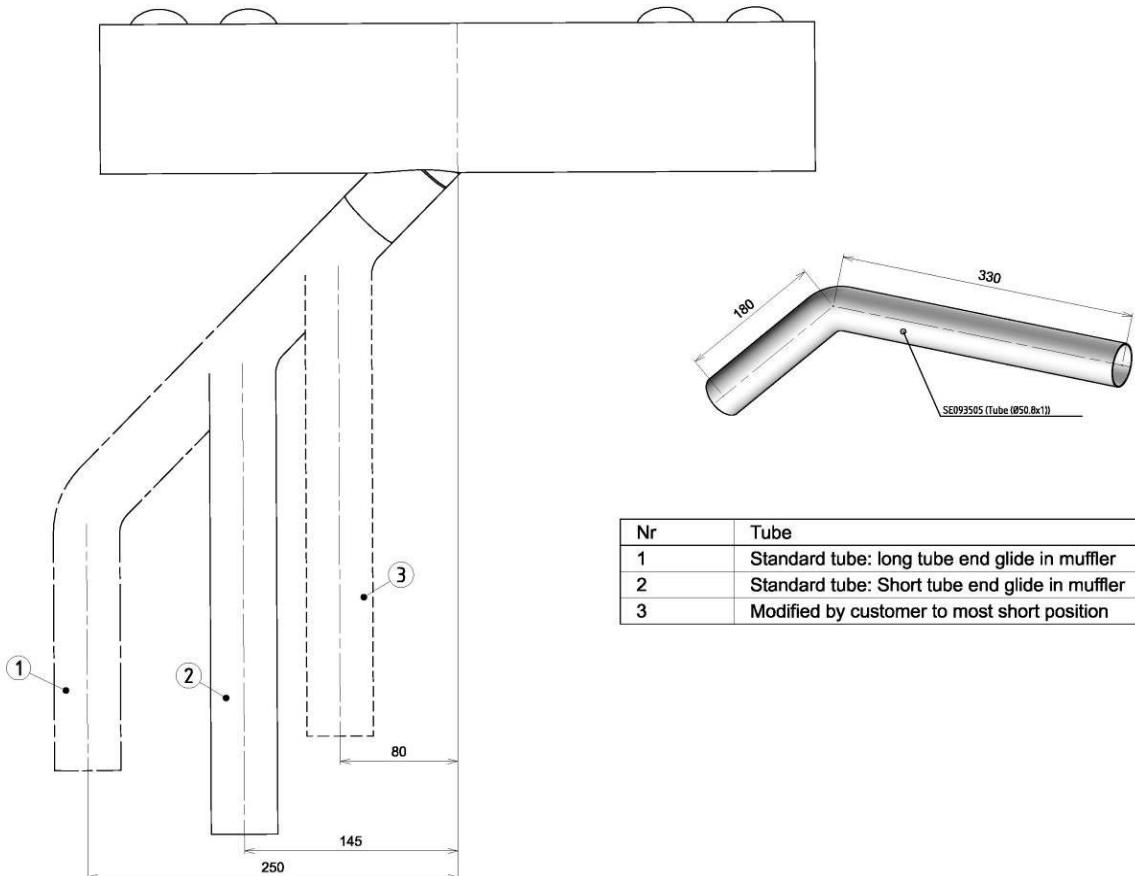


Figure 53

The final exhaust tube (2) (ULP partn° SE093505) is delivered with separate 2 brackets to fix the spring. The tube can be installed one way or the other in the muffler (1). Even the tube (2) can be cut according wishes. This way, it is possible to change the distance between centreline engine and centreline outlet tube from 80mm to 250mm. After installation, the brackets must be welded to the tube.



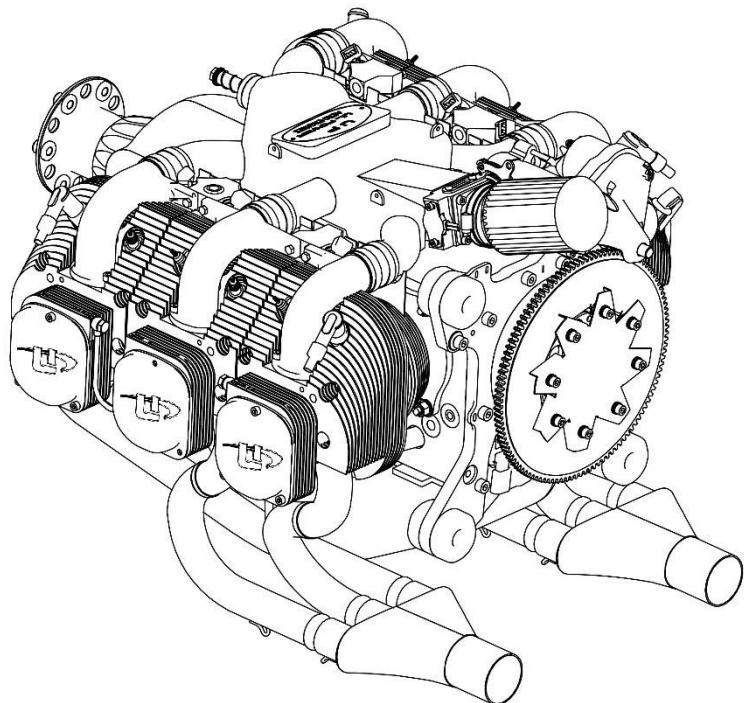
With 3 in 1 collector

Figure 54

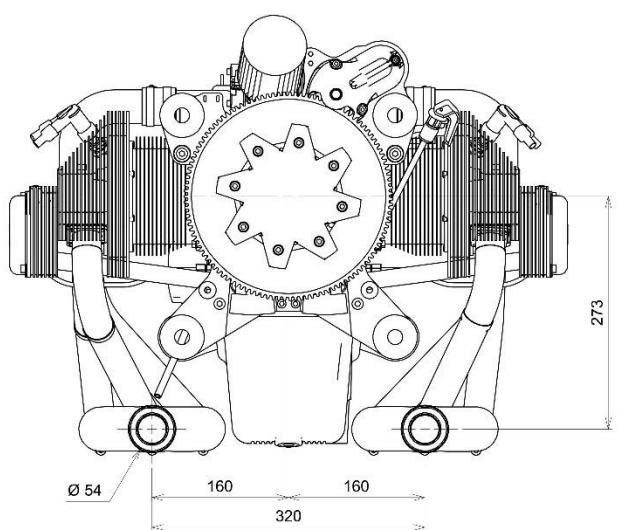


Figure 55

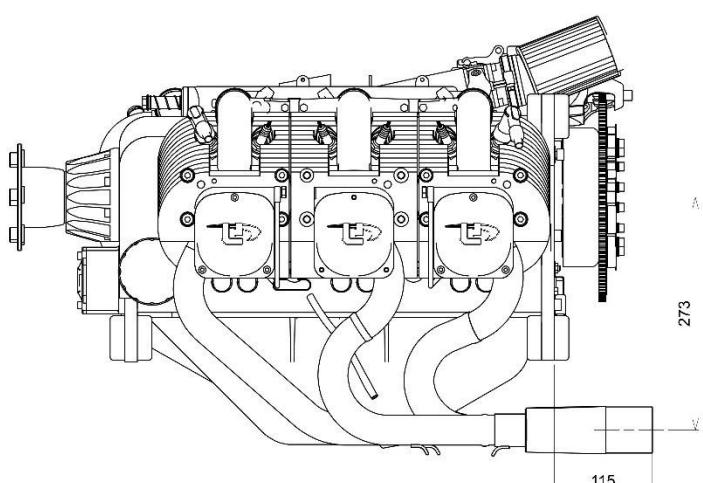
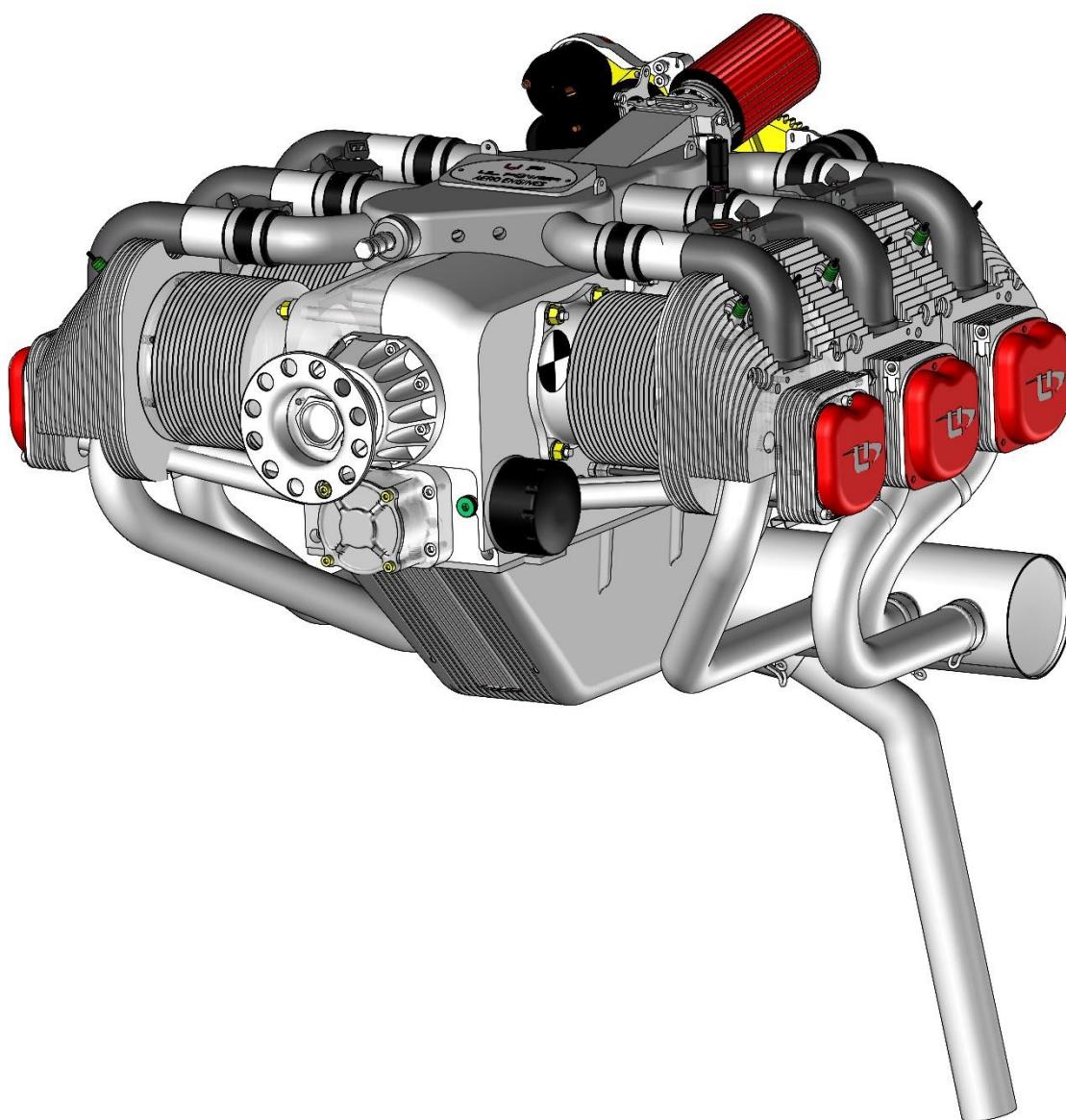


Figure 56

UL520



Engine description

General Description

- 4 stroke, 6 cylinder, horizontally opposed
- Electronic spark ignition (variable timing)
- Electronic multipoint fuel injection (pressure and temperature compensated)
- Electronic RPM limiter
- Direct propeller drive
- 7 bearing crankshaft with large thrust bearing (ball bearing type)
- Single central camshaft
- Push rods, Tappets and Over head valves
- Wet sump forced lubrication with integrated pressure regulator
- Ram air cooled cylinders and cylinder heads
- Integrated AC generator, external rectifier-regulator
- Electric starter
- Electric fuel pump and pressure regulator

Specifications

	UL520i	UL520T	UL520iS	UL520iSA
Displacement:			5254cc	
Bore:			105.6 mm	
Stroke:			100 mm	
Compression Ratio:	8 : 1			8,7 : 1
Firing order:		1 - 4 - 5 - 2 - 3 - 6		
Direction of Rotation:		Clockwise - Pilot's view - Tractor configuration		
Torque (ISA conditions):	425Nm @ 2600 rpm	585Nm @ 2300 rpm	465Nm @ 2800 rpm	
Power rating (ISA conditions):	180 hp @ 3300 rpm (170 hp @ 2800 rpm)	220hp @ 2700 rpm	200hp @ 3300 rpm (180Hp @ 2800 rpm)	
Basic standard engine weight:	93,3 kg (205 lb)	107,3 kg (236 lb)	93.3 kg (205 lb)	
DC output:		50 A		
Oil capacity:	4 L (Min: 3,5L - Max 4,5L)		5 L (Min: 4,5L - Max 5,5L)	
Fuel:	<u>MOGAS</u> min. 95 octane rating <u>AVGAS</u> (100LL) <u>UL 91</u> (95 octa = 87MON = 91AKI)		<u>MOGAS</u> min. 98 octane rating <u>AVGAS</u> (100LL) <u>UL91</u> (98 Oct = 90MON = 94 AKI)	

Technical data

Description of basic standard engine

The basic standard engine consists of the following:

- Engine assembly
- Injectors and spark plugs
- Intake manifold, throttle and air filter
- Electric starter motor
- Integrated AC generator
- Exhaust system
- Cooling ducts for cylinders and cylinder heads
- Propeller flange L = 55 (Standard)

Installed weight of standard engine

Dry weight of the basic standard engine from serial production: 93.3 kg (205 lb)

The total operational weight depends on the accessories installed. Typical accessories provided by ULPower have the following weight:

▪ Ignition Coils & leads:	.....	3,0 kg (6,6 lb)
▪ ECU & wiring loom:	.....	1,6 kg (3,5 lb)
▪ Exhaust, bolts, springs & seals:	.....	3,6 kg (8 lb)
▪ Electric fuel pump:	.....	0,7 kg (1,6 lb)
▪ Fuel filters (pre-filter & fine filter):	.....	0,2 kg (0,4 lb)
▪ Oil/Air Separator & hoses:	.....	0,7 kg (1,5 lb)
▪ Rectifier Regulator:	.....	0,1 kg (0,2 lb)
▪ Rubber engine mounts:	.....	0,3 kg (0,7 lb)
▪ 4 L engine lubricating oil:	.....	3,5 kg (7,7 lb)
Possible fully operational engine weight:	.....	108 kg (238 lb)

The UL520 iSA engines (aerobatic version) are delivered with an inverted oil system, containing :

- | | |
|---------------------------------------|---|
| ▪ Gravity valve, | ▪ Gravity oil - air separator |
| ▪ Gravity oil pickup tube in the sump | ▪ Breather adaptor on top of the engine |

Additional weight for the Aerobatic option : 3,2 kg (7,0 lb)

* Extra 1L Oil: 0,866 kg (1,8 lb)

*** Possible fully operational engine weight UL390iSA:** **104.06 kg (229.4 lb)**

The total operational weight will depend on the installed accessories. In addition to the basic standard engine, following items are necessary accessories:

- Oil cooler and connections (depend on type of installation)
- Tacho, temperature and pressure sensors, wiring (and gauges)

Only valid for the **UL 520_T** engine : engines of this type are delivered with an additional :

- Turbo compressor (pre-mounted on exhaust)
- Wastegate (pre-mounted on exhaust)
- Turbo pressure control valve + pneumatic tubes
- Standard propeller flange SAE I-F L=90 type instead of L=55 (naturally aspirated engines)
- **Extra weight: 14 kg (including muffler).**

The total operational weight will depend on the installed accessories. In addition to the basic standard engine, following items are necessary accessories:

- Oil cooler and connections (depend on type of installation)
- Tacho, temperature and pressure sensors, wiring (and gauges)
- Intercooler and connections

Engine views

Naturally aspirated engine

DIMENSIONS OF BASIC STANDARD NATURALLY ASPIRATED ENGINE

(WITH STANDARD PROPELLER FLANGE L = 55)

	pos. (+)	neg. (-)	total Σ
max. dimension in x-axis	92.5 mm (3,641 inch)	630 mm (24,803 inch)	722.5 mm (28,444 inch)
max. dimension in y-axis	368 mm (14,488 inch)	368 mm (14,488 inch)	736 mm (28,976 inch)
max. dimension in z-axis	182 mm (7,165 inch)	290 mm (11,417 inch)	472 mm (18,582 inch)

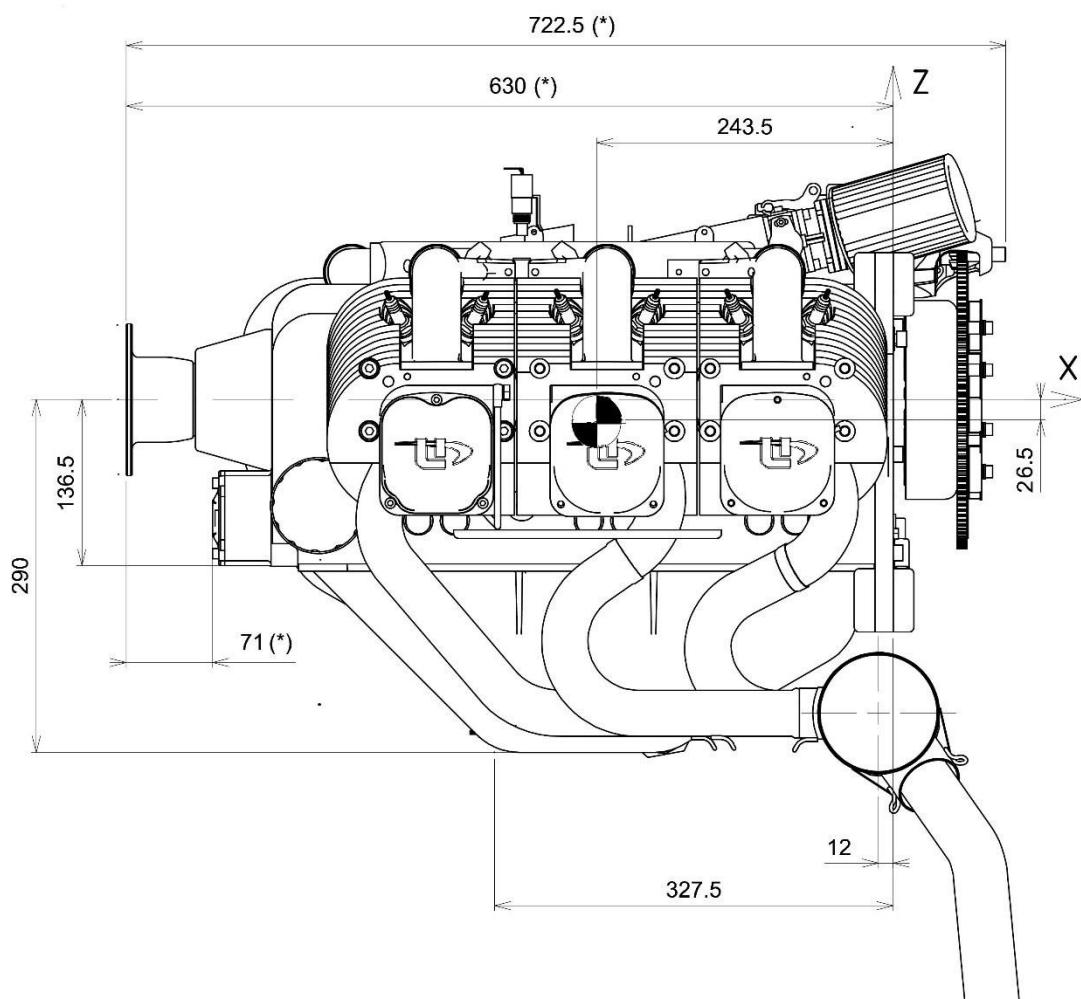


Figure 57

* dimensions for standard prop flange l = 55, different prop flanges are available

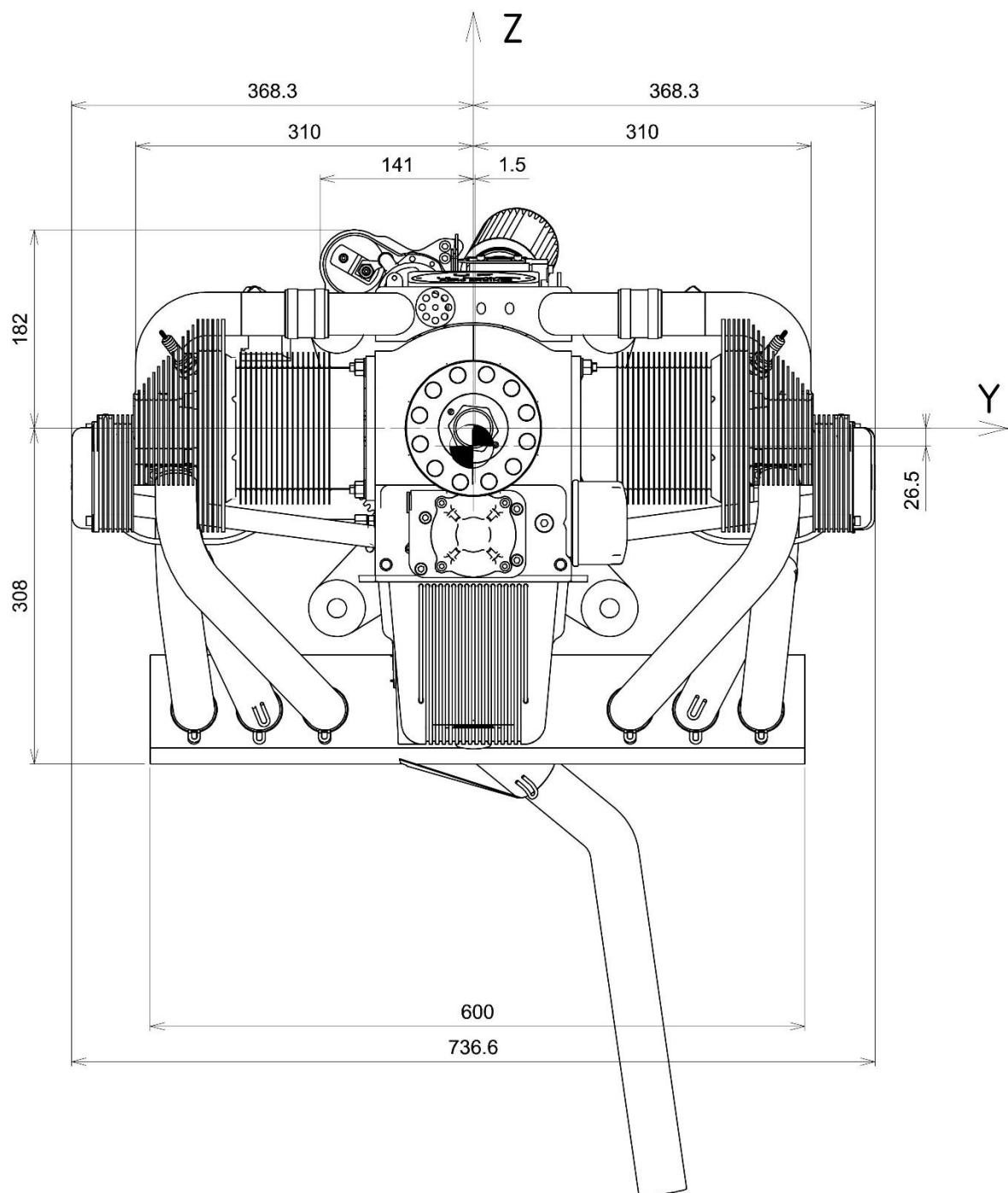


Figure 58

CENTRE OF GRAVITY OF BASIC STANDARD ENGINE (NATURALLY ASPIRATED)

centre of gravity in x-axis	-241.2 mm (-9,496" inch)
centre of gravity in y-axis	0 mm (-0,0" inch)
centre of gravity in z-axis	-25.4 mm (-1,0" inch)

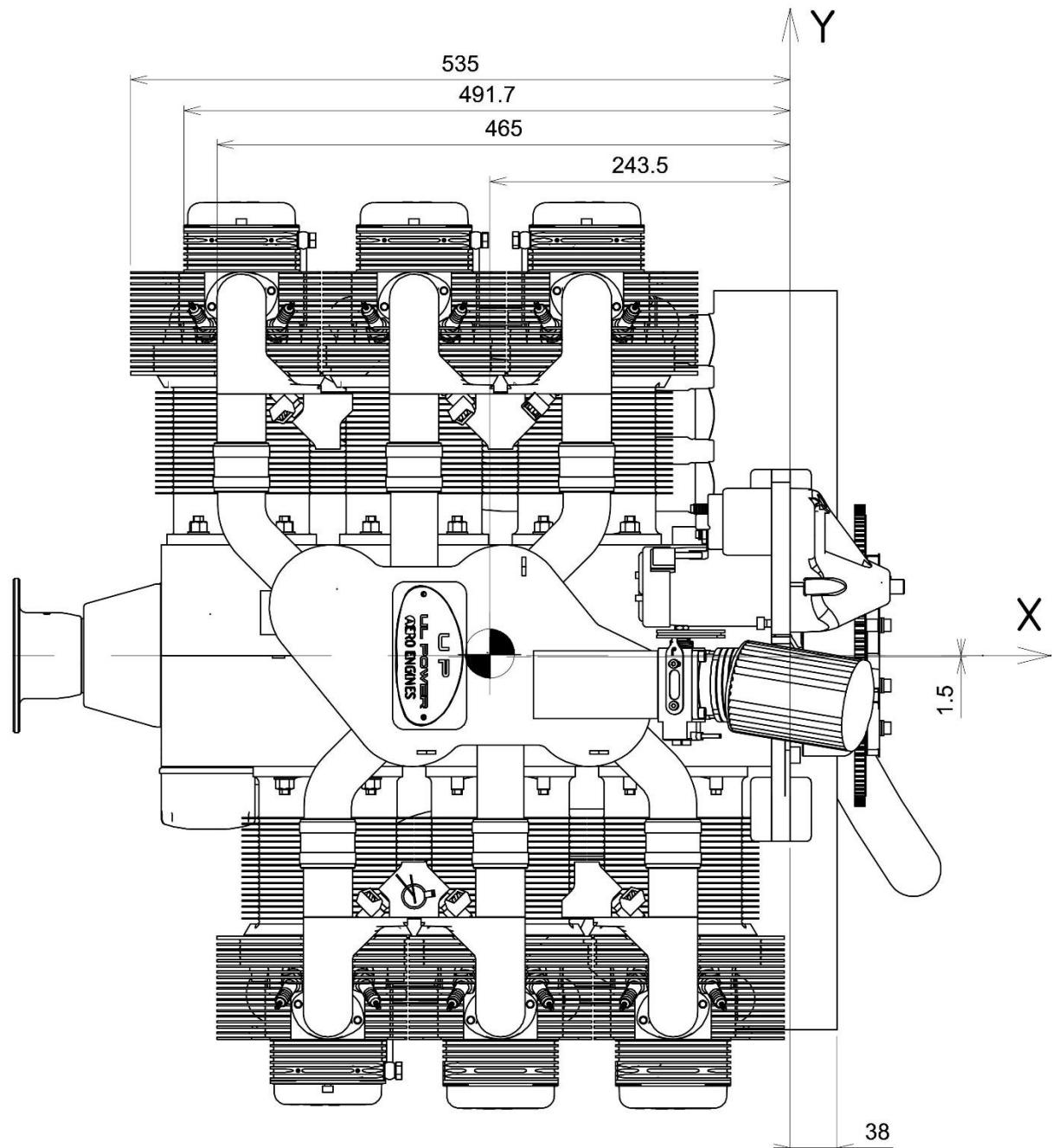


Figure 59

ENGINE VIEWS "FORCED COOLING"

Optional we offer a "Forced Cooling" for all naturally aspirated UL520 engines.

Dimensions: see below

Extra weight: 12Kg

An oil cooler is integrated in the system.

Front Engine Mount plate is installed. Engine fixing points are the 4 lower points.

A muffler or 4 in one exhaust can be installed.

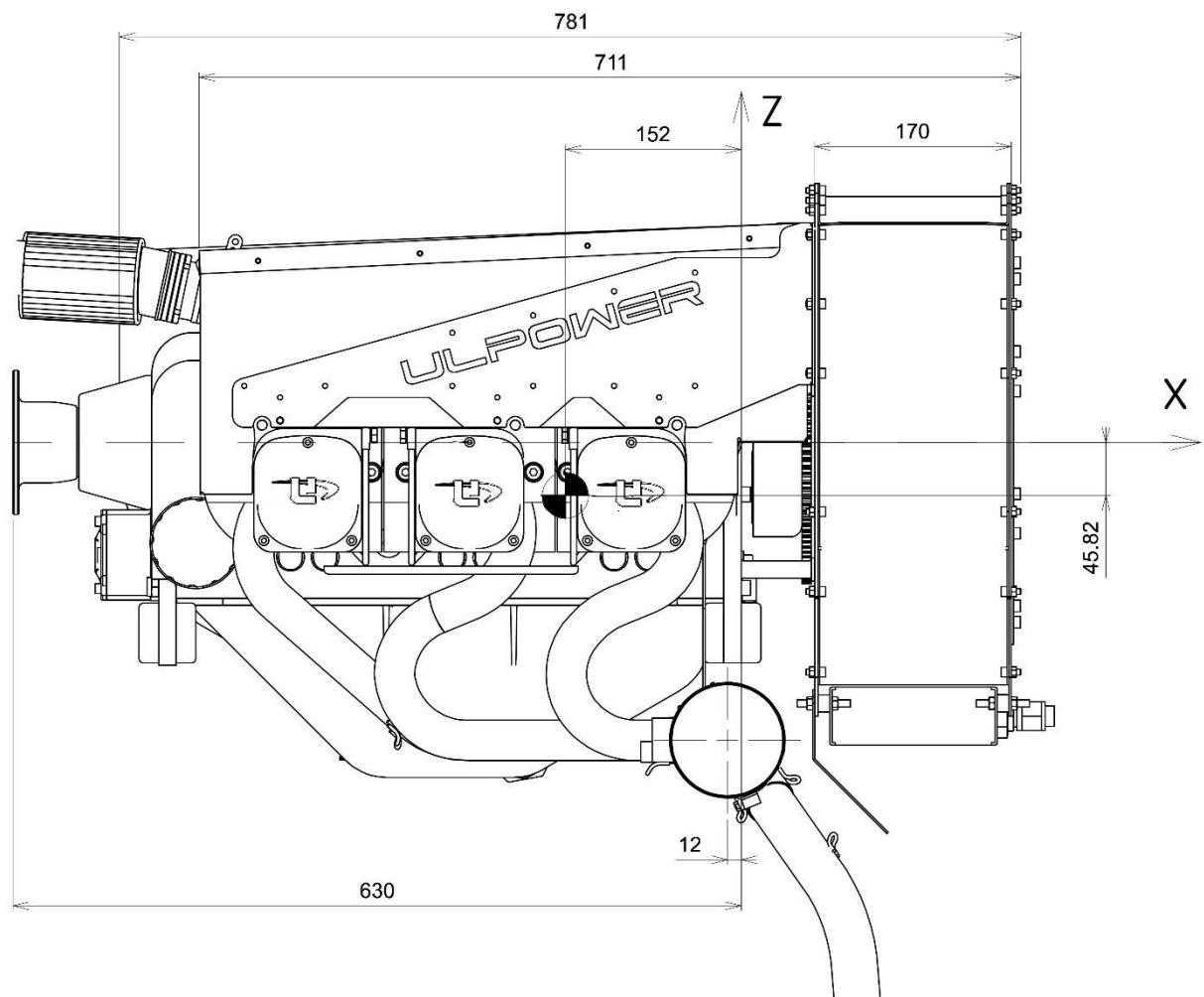


Figure 60 (Optional "Forced Cooling")

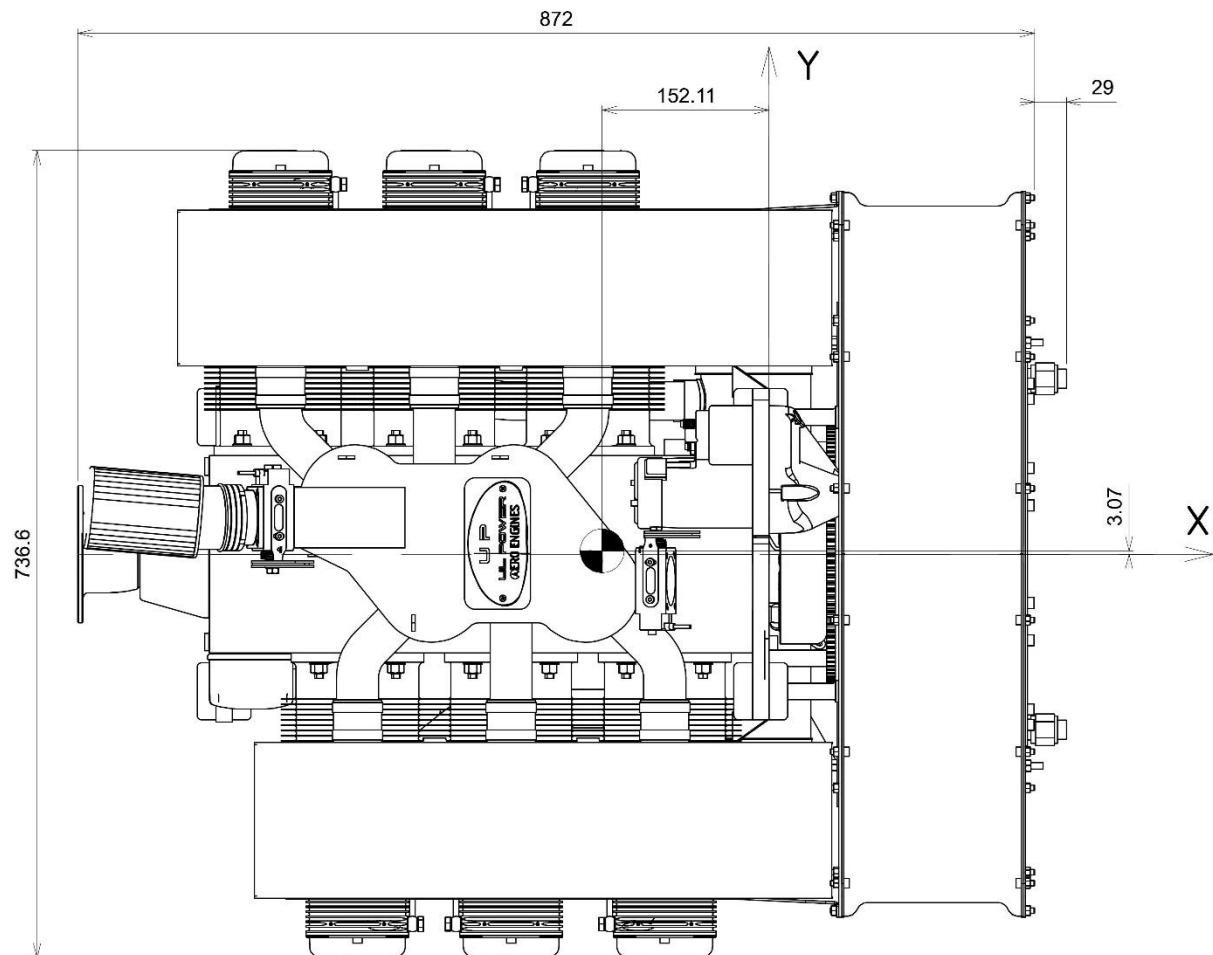


Figure 61 (Optional "Forced Cooling")

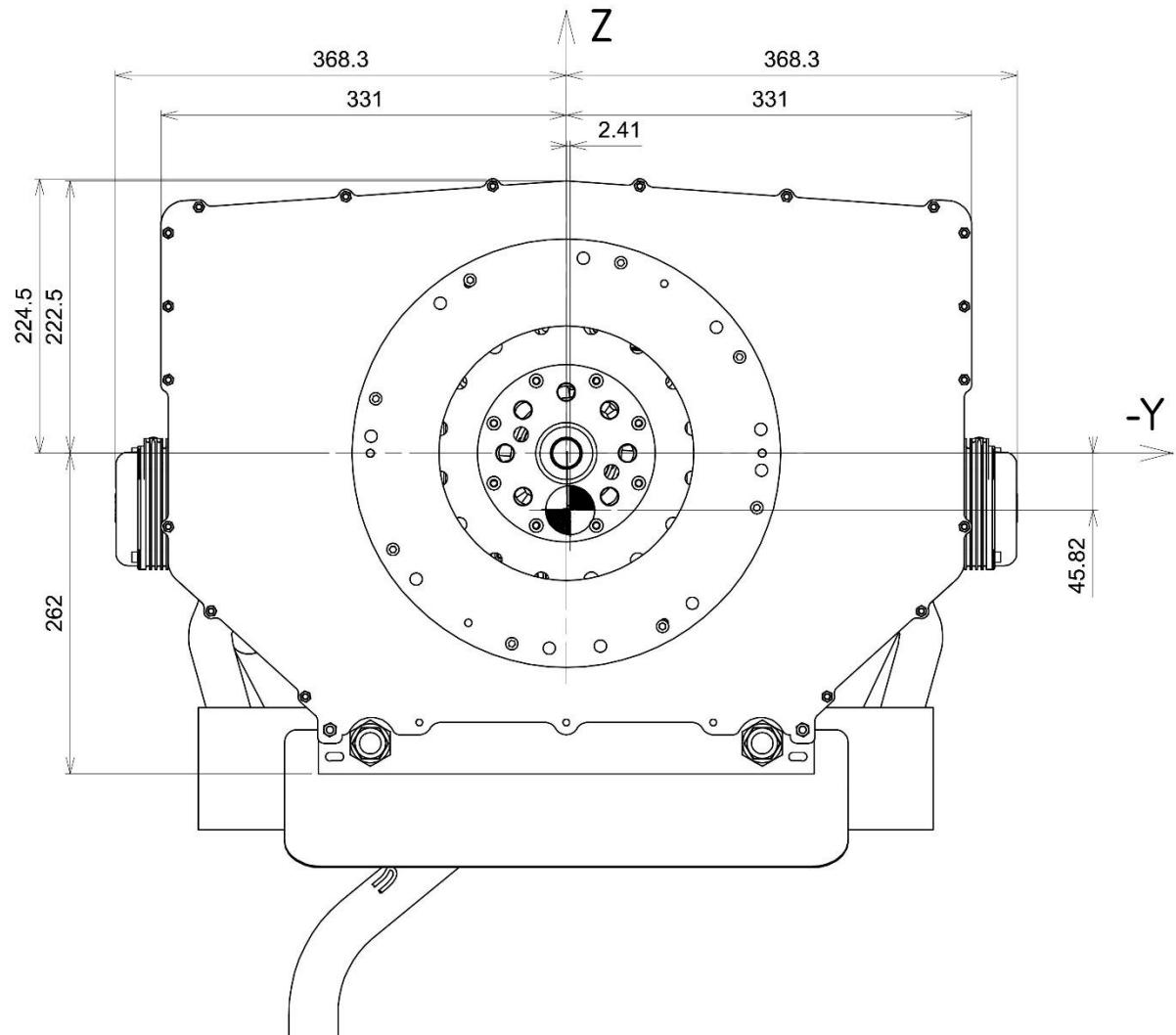


Figure 62 (Optional "Forced Cooling")

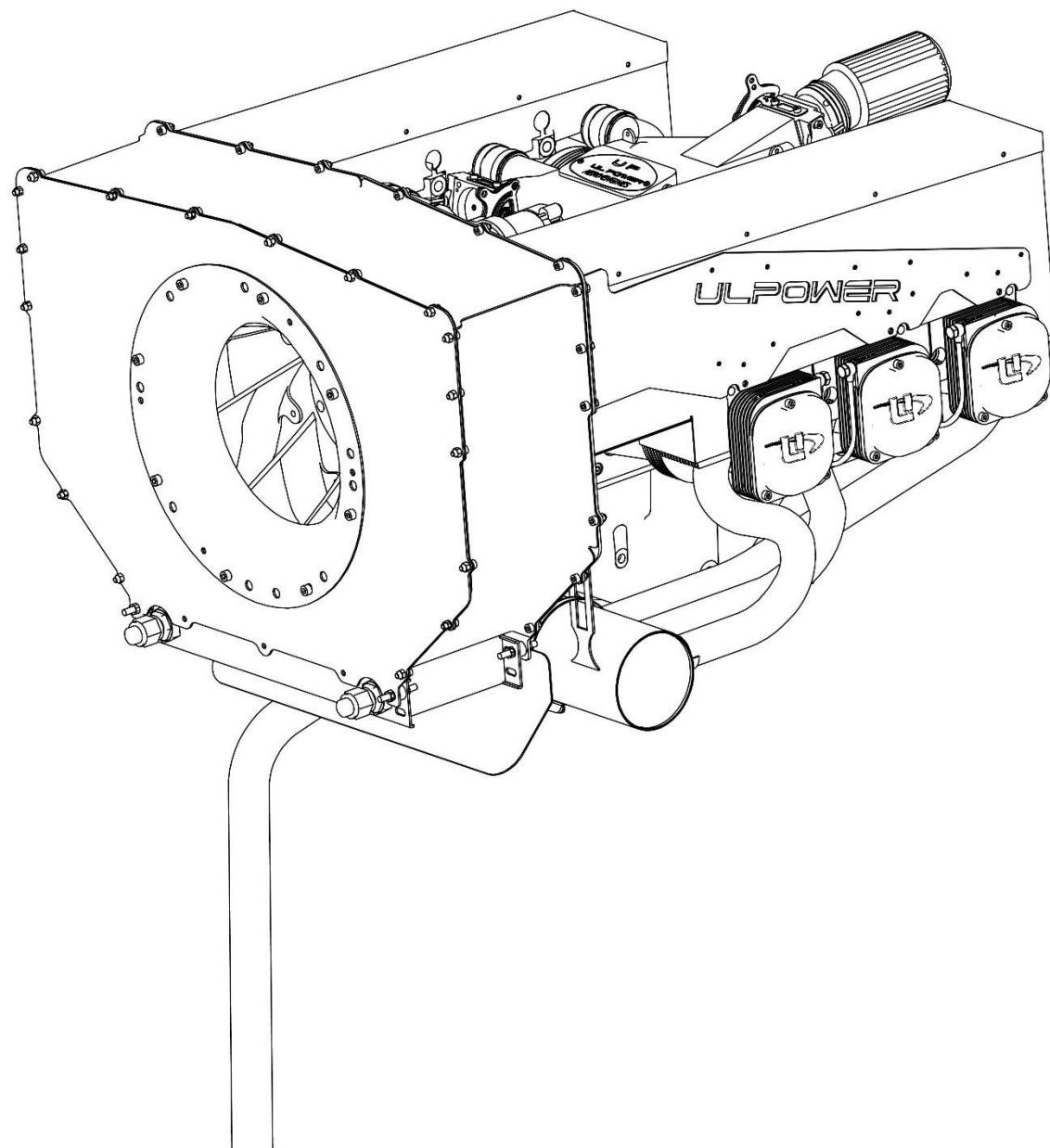


Figure 63 (Optional “Forced Cooling”)

Turbo engine

DIMENSIONS OF TURBO ENGINE
(WITH PROPELLER FLANGE L = 90)

	pos. (+)	neg. (-)	total Σ
max. dimension in x-axis	179 mm (7.047 inch)	630 mm (24,803 inch)	808.72 mm (31.839 inch)
max. dimension in y-axis	368 mm (14,488 inch)	368 mm (14,488 inch)	736 mm (28,976 inch)
max. dimension in z-axis	182 mm (7,165 inch)	340 mm (13,386 inch)	522 mm (20,5512 inch)

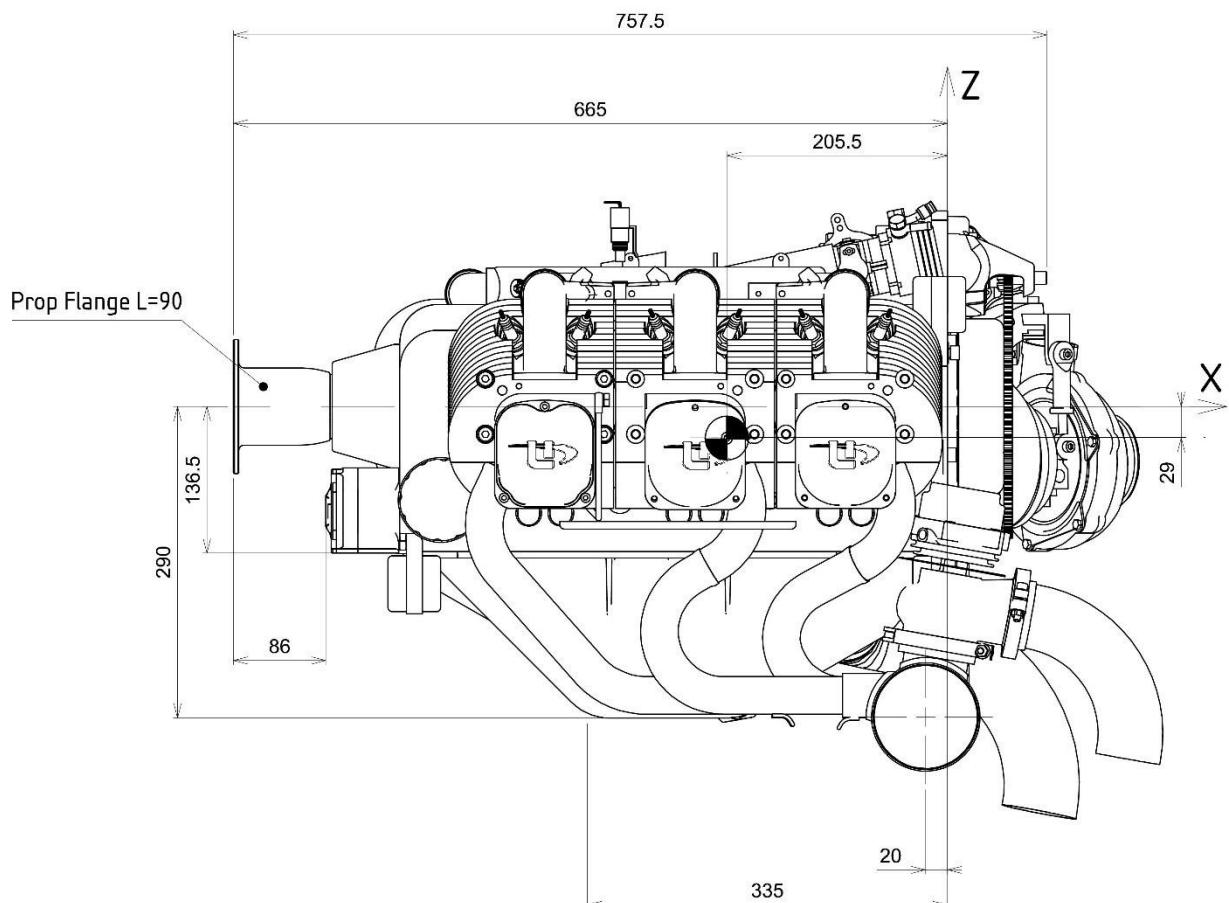


Figure 64

* dimensions for prop flange l = 90, different prop flanges are available

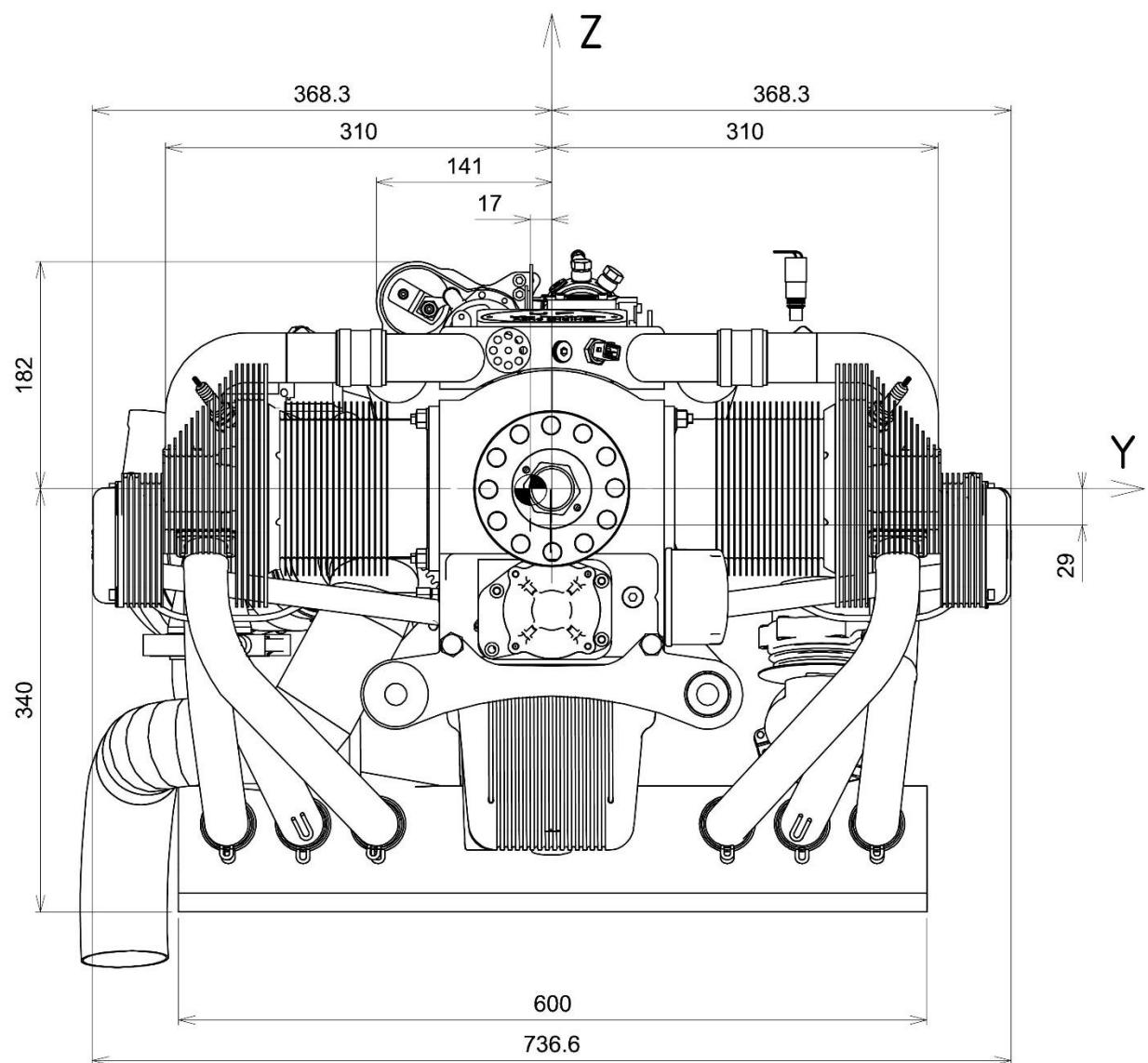


Figure 2

CENTRE OF GRAVITY OF BASIC STANDARD ENGINE (TURBO)

centre of gravity in x-axis	-207.72 mm (-8,178" inch)
centre of gravity in y-axis	17.09 mm (0,673" inch)
centre of gravity in z-axis	-28.85 mm (-1,136" inch)

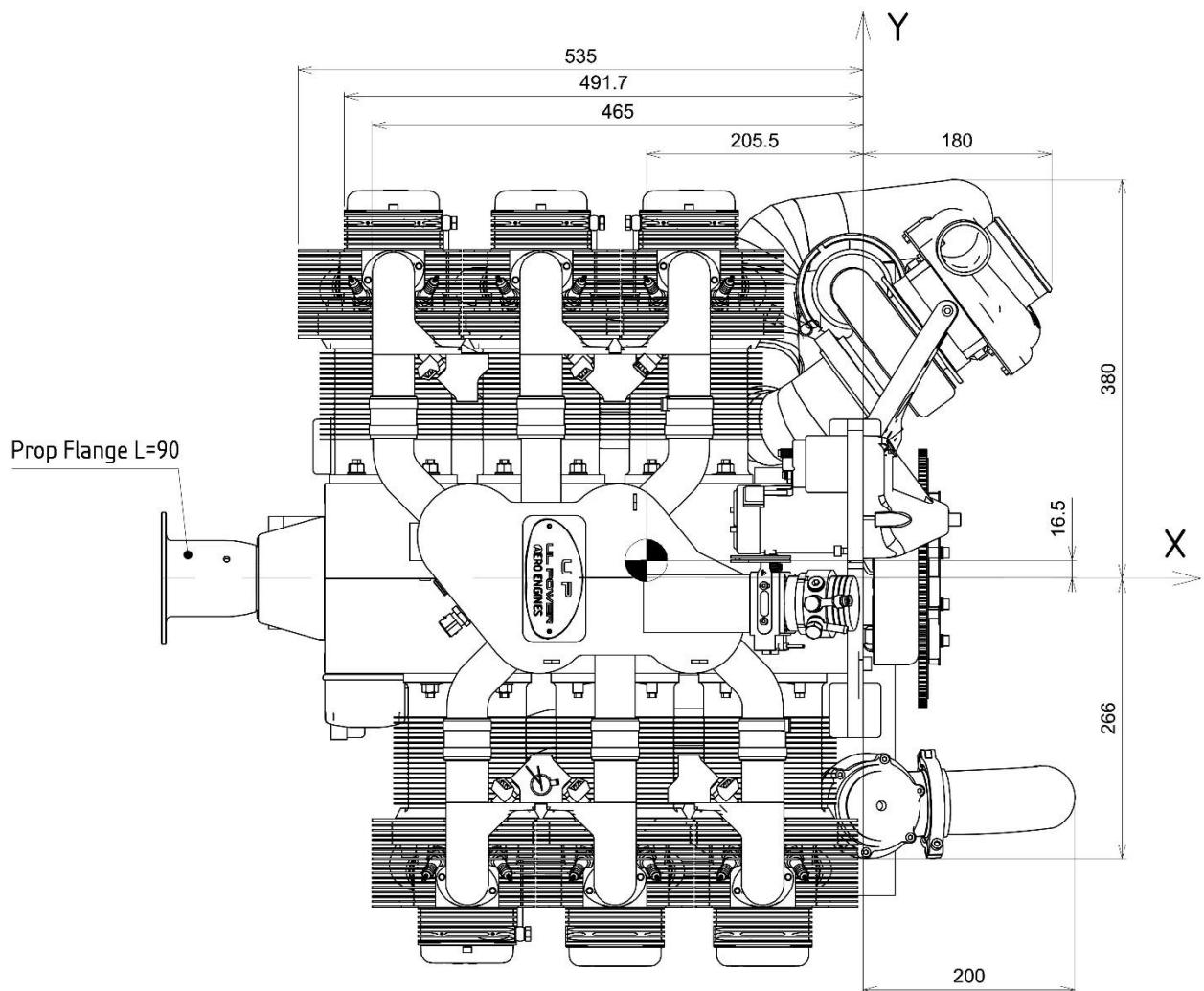


Figure 65

Engine mounting position

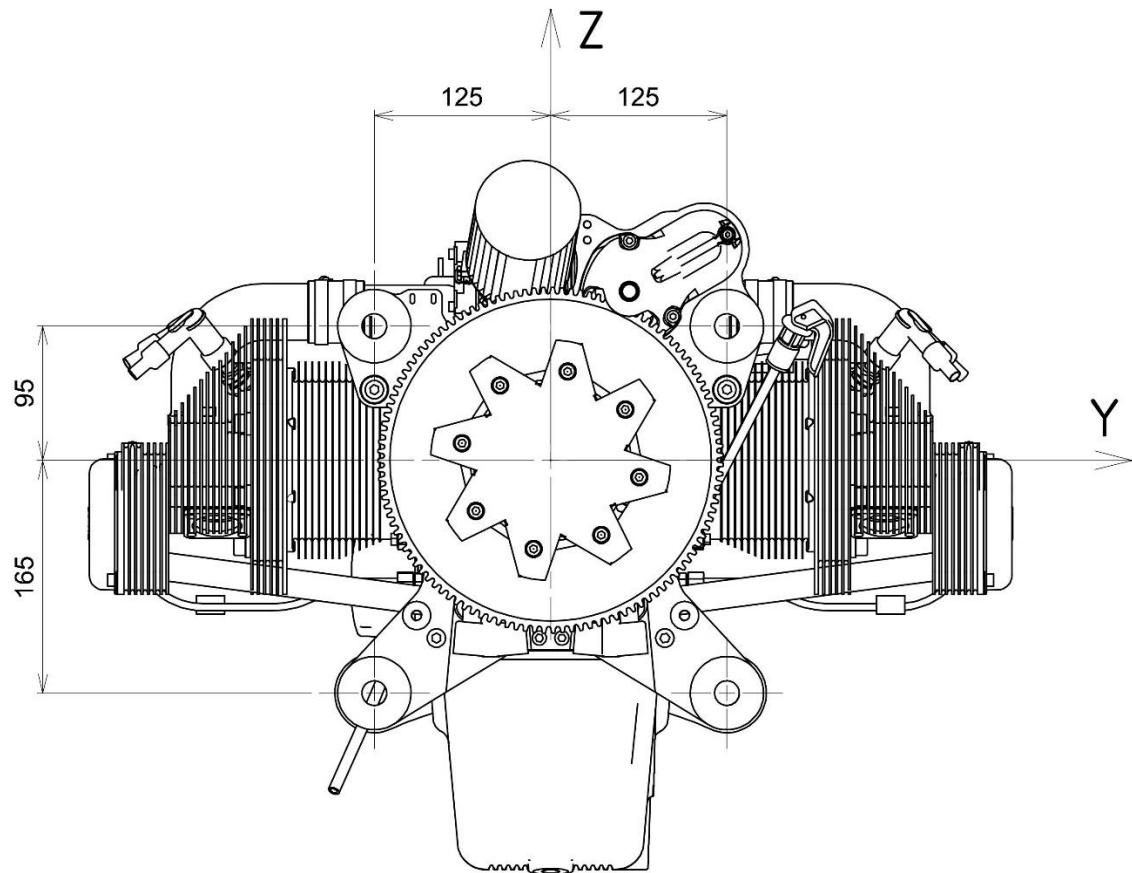


Figure 66: Mounting points

	Y-axis	Z-axis
attachment point 1	-125 mm	95 mm
attachment point 2	125 mm	95 mm
attachment point 3	-125 mm	165 mm
attachment point 4	125 mm	165 mm

As an option we can also provide a front engine mount plate (naturally aspirated and turbo engines)

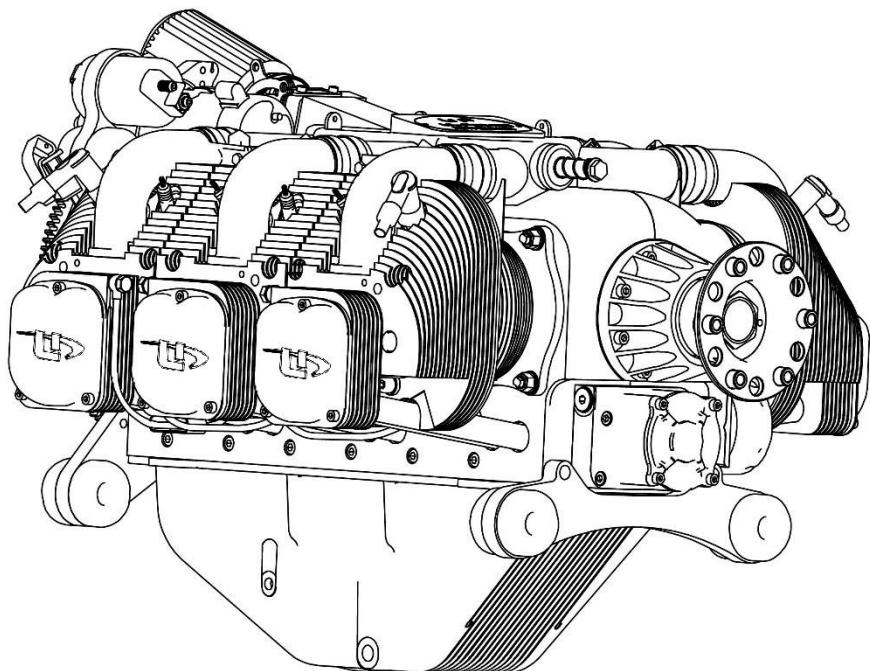


Figure 67

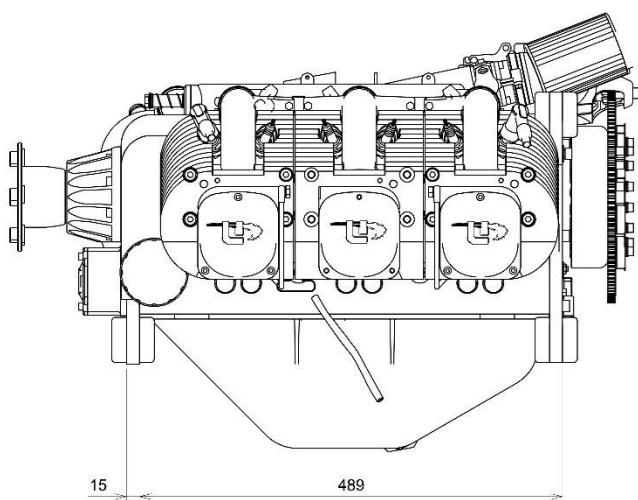


Figure 68

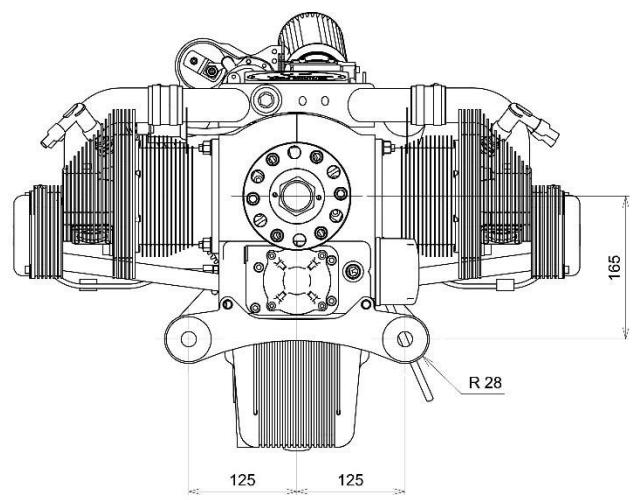
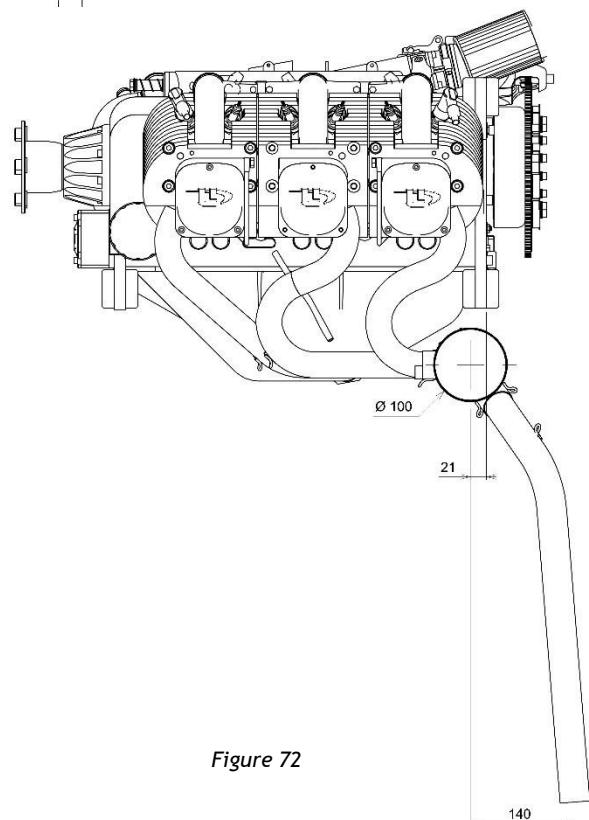
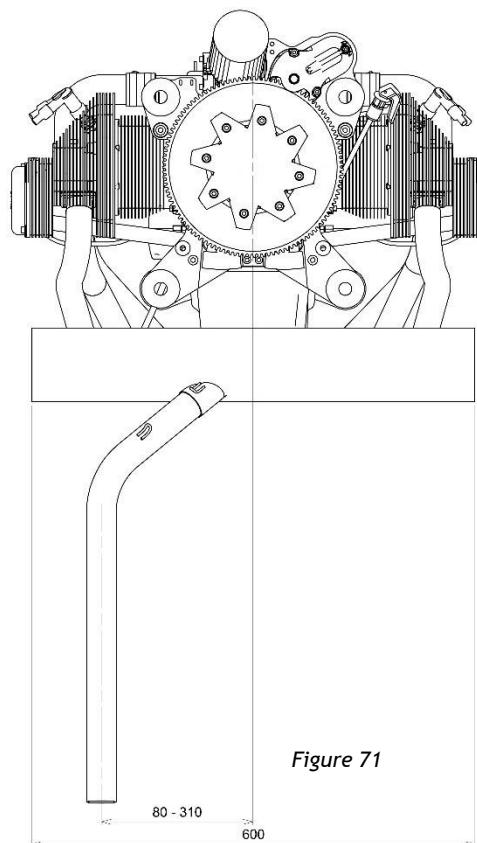
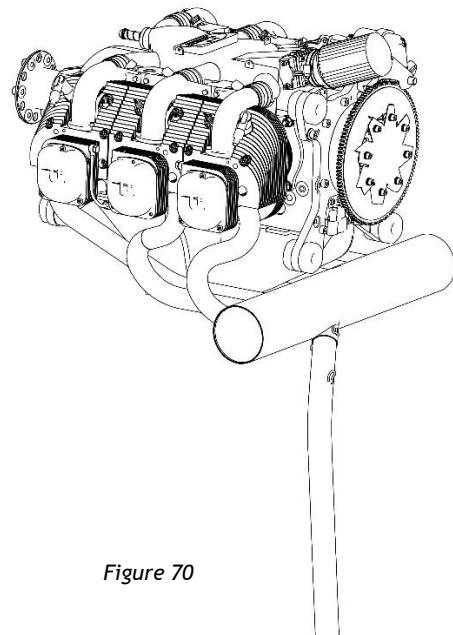


Figure 69

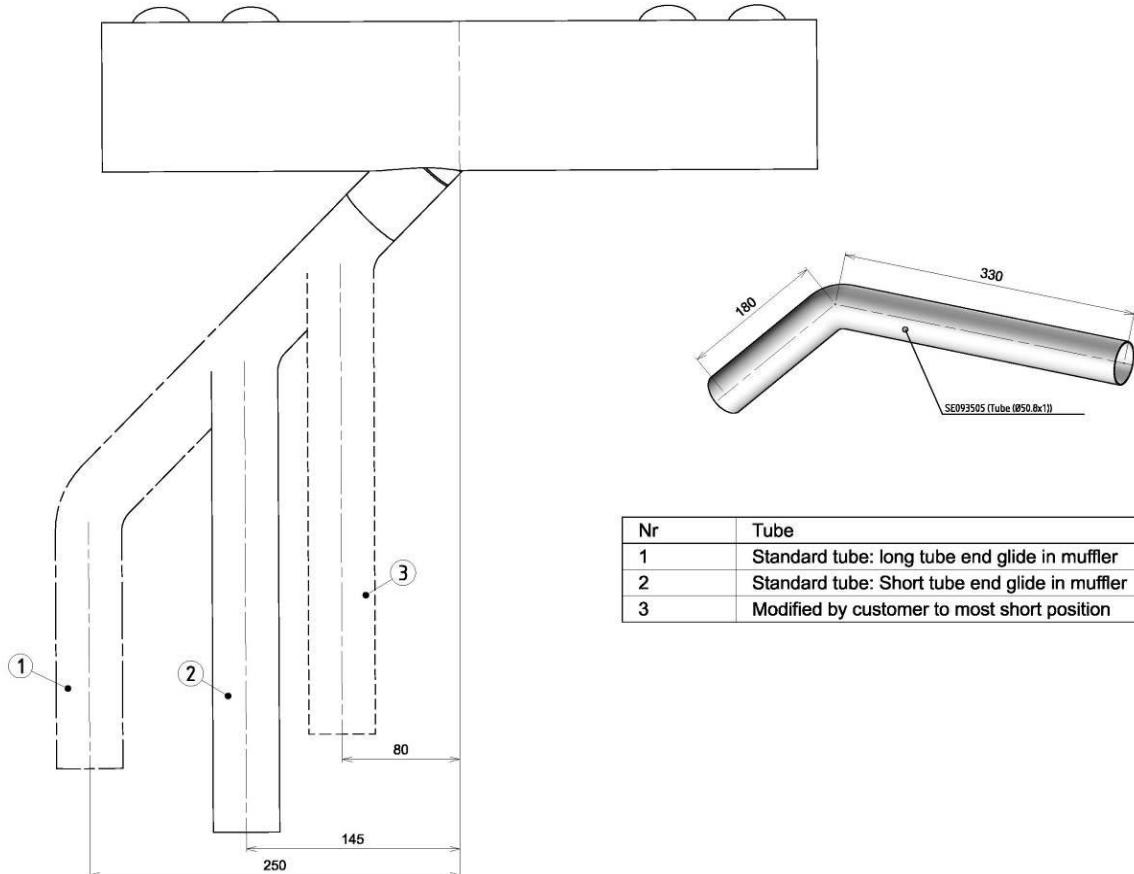
Exhaust system: dimensions

Unless otherwise agreed, the motor will be delivered with the UL power exhaust system. The system is designed to reduce the noise to an acceptable level without loosing power.

With muffler (naturally aspirated engines)



The final exhaust tube (2) (ULP partn° SE093505) is delivered with separate 2 brackets to fix the spring. The tube can be installed one way or the other in the muffler (1). Even the tube (2) can be cut according wishes. This way, it is possible to change the distance between centreline engine and centreline outlet tube from 80mm to 250mm. After installation, the brackets must be welded to the tube.



Nr	Tube
1	Standard tube: long tube end glide in muffler
2	Standard tube: Short tube end glide in muffler
3	Modified by customer to most short position

Possible installations exhaust naturally aspirated engines :

Figure 73

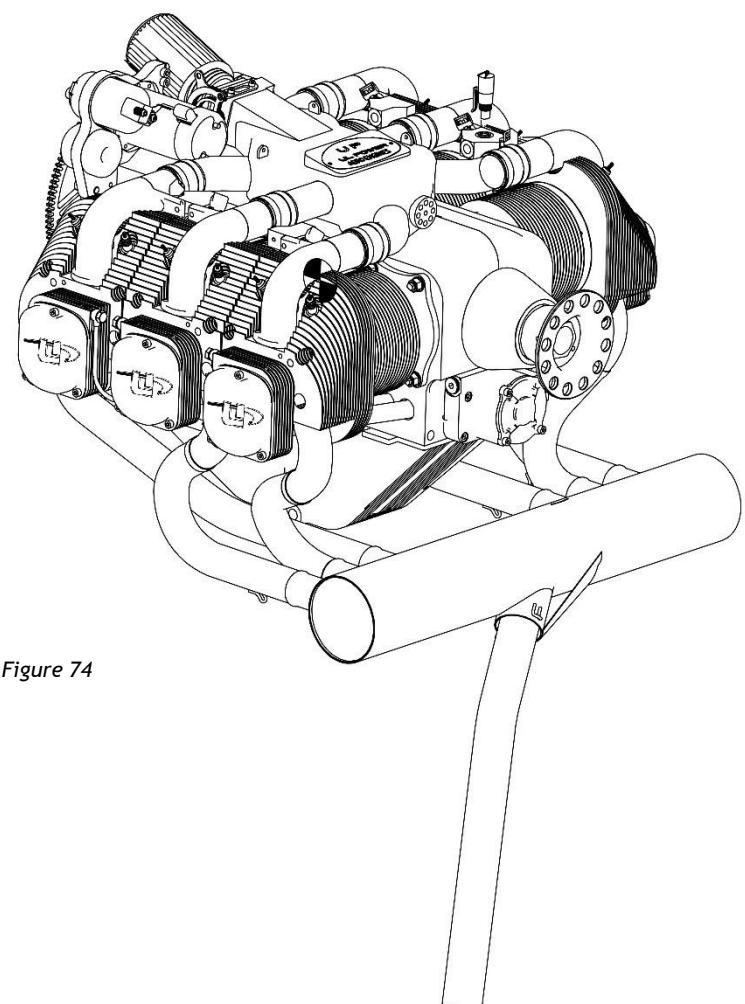
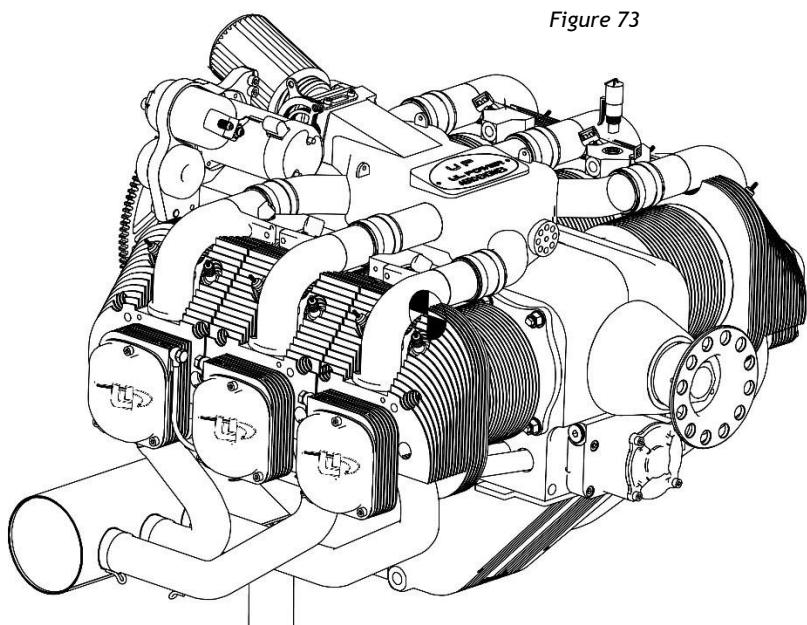


Figure 74

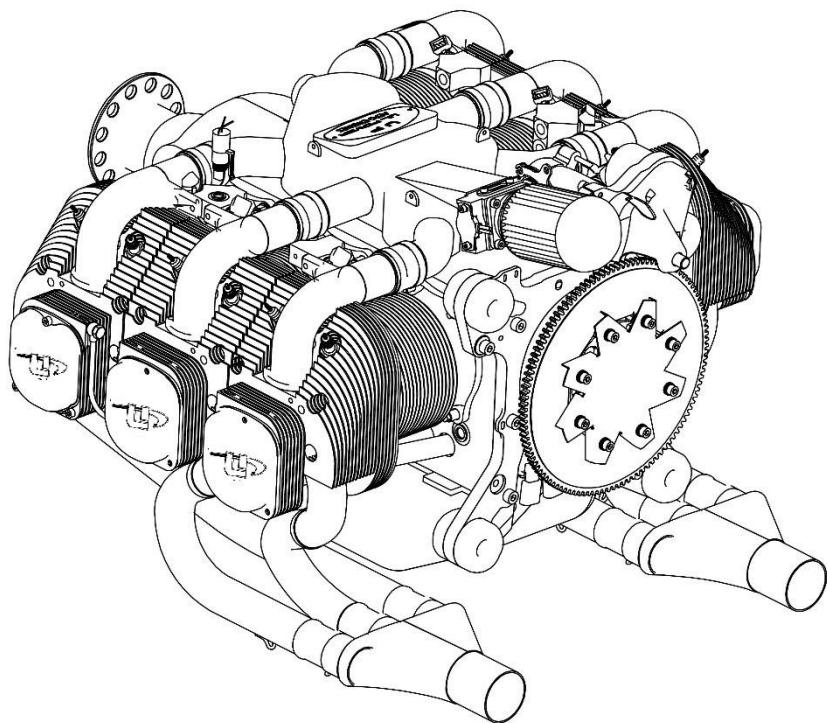
With 3 in 1 collector (naturally aspirated engines)

Figure 75

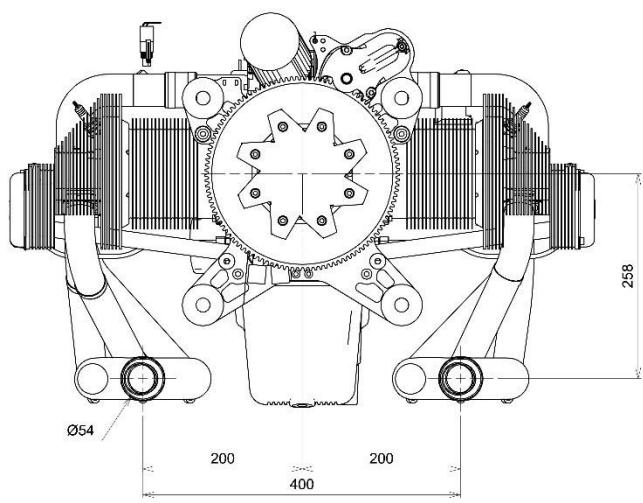


Figure 76

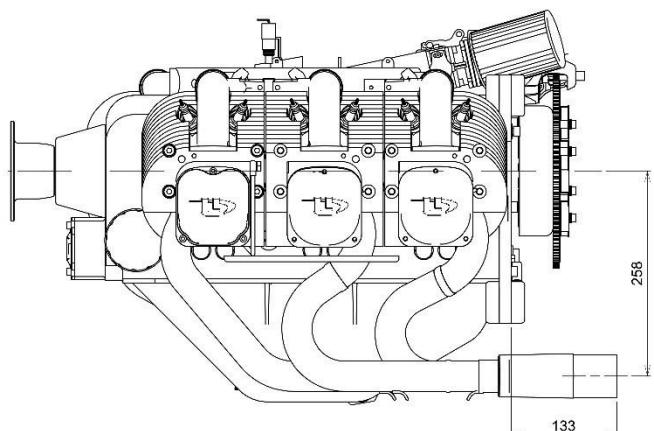
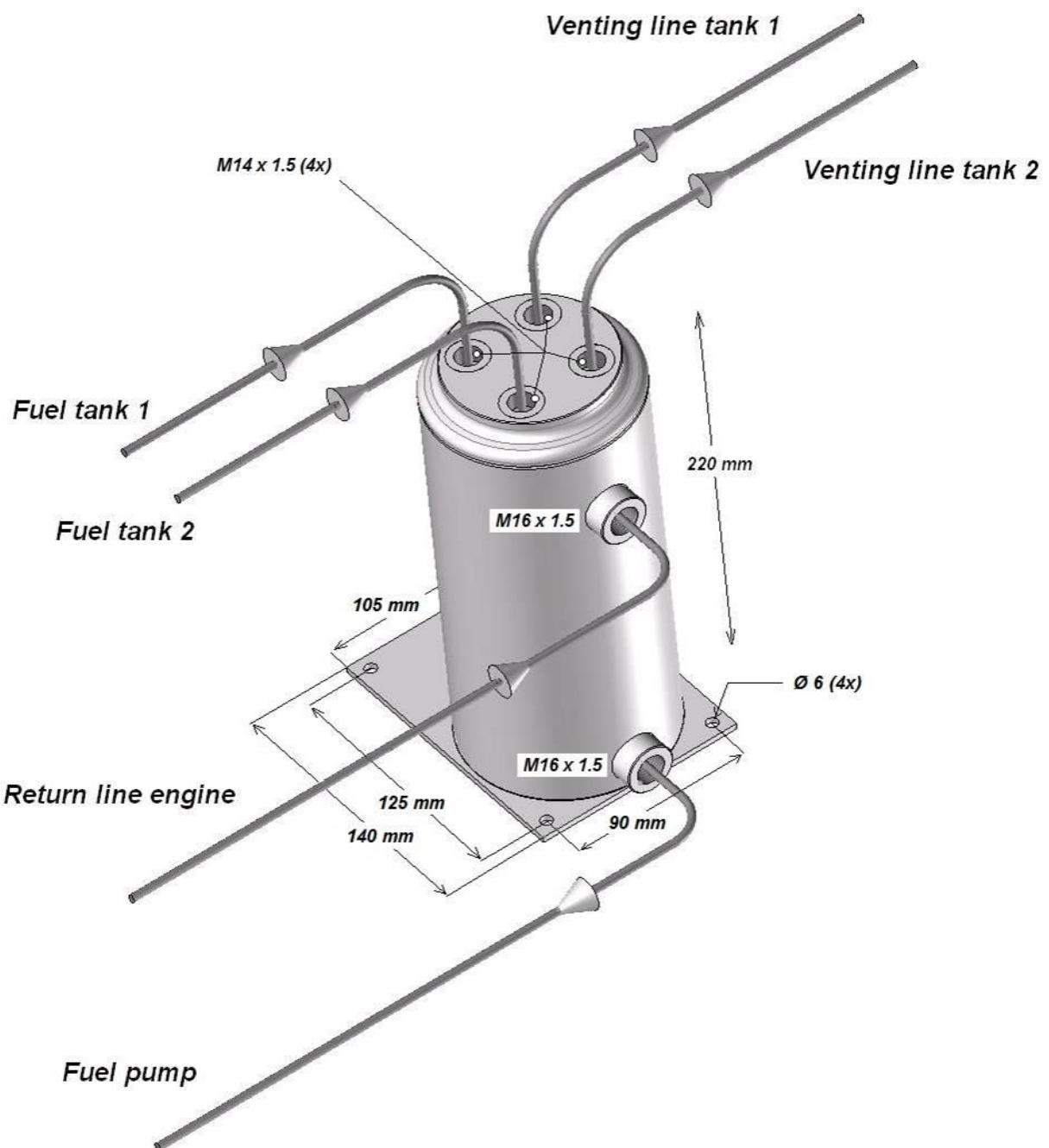


Figure 77

Annex A : Fuel header tank



ULP Partnr: E066030

Revision

Revision 1 (2021-07-06)

Pg 20: Exhaust tube can only be installed in one way (update Q2 2021)
Pg 22: Delete text
Pg 57: Add data UL520T
Pg 58: Add data UL520T
Pg 62: Add UL520T engine dimensions
Pg 63: Add UL520T engine dimensions
Pg 64: Add UL520T engine dimensions
Pg 70: Add UL520T engine dimensions + weight
Pg 75: Add 'UL520T has standard exhaust system'

Revision 2 (2021-07-06)

Change headings in accordance with engine type
Pg 70: Add extra information included/excluded parts turbo engines

Revision 3 (2021-11-09)

Change sequence
Redefine basic standard engine
Remove propeller chapter

Revision 4 (2023-01-02)

Pg 22 : change from 145hp to 150hp for UL350IHPS

Revision 5 (2024-03-22)

Pg 06 : UL260iSA max oil quantity 4.25l instead of 4.5l, min oil quantity 3.25l instead of 3.5l
Pg 22 : UL350iSA max oil quantity 4.25l instead of 4.5l, min oil quantity 3.25l instead of 3.5l