

Technical Data

4000 Series

Diesel Engine - Electropak

4012-46TAG1A

4012-46TAG2A

1800 rev/min

Basic technical data

Number of cylinders 12
 Cylinder arrangement..... Vee, 60°
 Cycle 4 stroke
 Induction system .. turbocharged
 Combustion system..... direct injection
 Compression ratio 13:1
 Bore..... 160 mm
 Stroke 190 mm
 Cubic capacity .. 45-842 litres
 Direction of rotation .. anti-clockwise when viewed on flywheel
 Firing order ... 1^A, 6^B, 5^A, 2^B, 3^A, 4^B, 6^A, 1^B, 2^A, 5^B, 4^A, 3^B
 Cylinder 1 furthest from flywheel
Note: Cylinders designated 'A' are on the right hand side of the engine when viewed from the flywheel end

Approximate weights

| Description | unit | Tropical | Temperate |
|--------------------------------|------|----------|-----------|
| Engine (dry) | Kg | 4400 | 4400 |
| Electropak (wet) + fuel cooler | Kg | 6086 | 5949 |
| Electropak (wet) - fuel cooler | Kg | 6070 | 5933 |

Overall dimensions of Electropak

| | unit | Tropical | Temperate |
|--------|------|----------|-----------|
| Height | mm | 2259 | 2255 |
| Length | mm | 3915 | 3916 |
| Width | mm | 2198 | 1775 |

Moment of inertia

Total engine inertia..... 19,3 kgm²

Centre of gravity

Bare engine (dry)
 -forward of the rear face of the cylinder block 771 mm
 -above the crankshaft centre line 32 mm
 Electropak - tropical cooling (wet)
 -forward of the rear face of the cylinder block .. 1227 mm
 -above the crankshaft centre line 152 mm
 Electropak - temperate cooling (wet)
 -forward of the rear face of the cylinder block .. 1169 mm
 -above the crankshaft centre line 140 mm

Cyclic irregularity for engine/flywheel maximum

4012-46TAG1A..... 1:975
 4012-46TAG2A..... 1:975

Ratings

Steady state speed stability at constant load. ± 0.25%
 Electrical rating are based on average alternator efficiency and are for guidance only (0.8 power factor being used).

Operating point

Engine speed 1800 rev/min
 Static injection timing. 20° BTDC
 Cooling water exit temperature..... < 98 °C
 Fuel data to conform to BS2869 Class A2 or BS EN590

Performance

All data based on operation to ISO 3046/1, BS 5514 and DIN 6271 standard reference conditions.

Noise

Estimated sound pressure level. 114 d(B)Ad(B)A

Test conditions

Air temperature..... 25 °C
 Barometric pressure 100 kPa
 Relative humidity 30%
 Air inlet restriction at maximum power (nominal)..... 2,5 kPa
 Exhaust back pressure at maximum pressure (nominal)... 3,0 kPa
 Fuel temperature (inlet pump) 58 °C maximum
 For engines operating in ambient conditions other than the standard reference conditions stated below, a suitable de-rate must be applied.

De-rate curves for increased ambient temperature and/or altitude are shown on the Perkins Intranet site.

For test conditions relevant to data on load acceptance, refer to the rear of this document

General installation

4012-46TAG1A - Temperate

| Designation | Units | Type of operation and application - 60Hz | | |
|--|---------------------|--|-------------|---------------|
| | | Baseload power | Prime power | Standby power |
| Gross engine power | kWm | 974 | 1213 | 1327 |
| Fan and battery charging alternator power | kW | 64 | | |
| Nett engine power | kWm | 910 | 1149 | 1263 |
| Brake mean effective pressure (gross) | kPa | 1416 | 1763 | 1930 |
| Combustion air flow at ISO conditions | m ³ /min | 102 | 117 | 124 |
| Exhaust gas temperature (max) after turbo | °C | 360 | 389 | 403 |
| Exhaust gas flow (max) at atmospheric pressure | m ³ /min | 218 | 250 | 287 |
| Exhaust gas mass flow | kg/s | 2,0 | 2,3 | 2,4 |
| Boost pressure ratio | - | 2,4:1 | 2,8:1 | 3,0:1 |
| Mechanical efficiency | % | 88 | 90 | 91 |
| Overall thermal efficiency (nett) | % | 38 | | |
| Regenerative power (estimated) | kWm | 69 | | |
| Engine coolant flow | l/min | 1200 | | |
| Typical Genset electrical output (0.8pf) | kVA | 1080 | 1364 | 1500 |
| | kWe | 884 | 1091 | 1200 |
| Assumed alternator efficiency | % | 95 | | |

4012-46TAG1A - Tropical

| Designation | Units | Type of operation and application - 60Hz | | |
|--|---------------------|--|-------------|---------------|
| | | Baseload power | Prime power | Standby power |
| Gross engine power | kWm | 974 | 1213 | 1327 |
| Fan and battery charging alternator power | kW | 60 | | |
| Nett engine power | kWm | 914 | 1153 | 1267 |
| Brake mean effective pressure (gross) | kPa | 1410 | 1757 | 1924 |
| Combustion air flow at ISO conditions | m ³ /min | 102 | 117 | 124 |
| Exhaust gas temperature (max) after turbo | °C | 360 | 389 | 403 |
| Exhaust gas flow (max) at atmospheric pressure | m ³ /min | 218 | 250 | 287 |
| Exhaust gas mass flow | kg/s | 2,0 | 2,3 | 2,4 |
| Boost pressure ratio | - | 2,4:1 | 3,0:1 | 3,0:1 |
| Mechanical efficiency | % | 88 | 90 | 91 |
| Overall thermal efficiency (nett) | % | 38 | | |
| Regenerative power (estimated) | kWm | 69 | | |
| Engine coolant flow | l/min | 1200 | | |
| Typical Genset electrical output (0.8pf) | kVA | 1085 | 1369 | 1505 |
| | kWe | 868 | 1095 | 1204 |
| Assumed alternator efficiency | % | 95 | | |

General installation

4012-46TAG2A - Temperate

| Designation | Units | Type of operation and application - 60Hz | | |
|--|---------------------|--|-------------|---------------|
| | | Baseload power | Prime power | Standby power |
| Gross engine power | kWm | 1069 | 1331 | 1459 |
| Fan and battery charging alternator power | kW | 64 | | |
| Nett engine power | kWm | 1005 | 1267 | 1395 |
| Brake mean effective pressure (gross) | kPa | 1555 | 1936 | 2121 |
| Combustion air flow at ISO conditions | m ³ /min | 108 | 125 | 133 |
| Exhaust gas temperature (max) after turbo | °C | 372 | 403 | 418 |
| Exhaust gas flow (max) at atmospheric pressure | m ³ /min | 231 | 287 | 306 |
| Exhaust gas flow (max) | kg/s | 2.1 | 2.4 | 2.6 |
| Boost pressure ratio | - | 2,6:1 | 3,0:1 | 3,2:1 |
| Mechanical efficiency | % | 89 | 91 | 92 |
| Overall thermal efficiency (nett) | % | 38 | | |
| Regenerative power (estimated) | kWm | 69 | | |
| Engine coolant flow | l/min | 1200 | | |
| Typical Genset electrical output (0.8pf) | kVA | 1194 | 1505 | 1656 |
| | kWe | 955 | 1204 | 1325 |
| Assumed alternator efficiency | % | 95 | | |

4012-46TAG2A - Tropical

| Designation | Units | Type of operation and application - 60Hz | | |
|--|---------------------|--|-------------|---------------|
| | | Baseload power | Prime power | Standby power |
| Gross engine power | kWm | 1069 | 1332 | 1459 |
| Fan and battery charging alternator power | kW | 60 | | |
| Nett engine power | kWm | 1009 | 1272 | 1399 |
| Brake mean effective pressure (gross) | kPa | 1549 | 1930 | 2116 |
| Combustion air flow at ISO conditions | m ³ /min | 108 | 125 | 133 |
| Exhaust gas temperature (max) after turbo | °C | 372 | 403 | 418 |
| Exhaust gas flow (max) at atmospheric pressure | m ³ /min | 231 | 287 | 306 |
| Exhaust gas mass flow | kg/s | 2,1 | 2,4 | 2,6 |
| Boost pressure ratio | - | 2,6:1 | 3,0:1 | 3,2 |
| Mechanical efficiency | % | 89 | 91 | 91 |
| Overall thermal efficiency (nett) | % | 38 | | |
| Regenerative power (estimated) | kWm | 69 | | |
| Engine coolant flow | l/min | 1200 | | |
| Typical Genset electrical output (0.8pf) | kVA | 1199 | 1510 | 1661 |
| | kWe | 959 | 1208 | 1329 |
| Assumed alternator efficiency | % | 95 | | |

Note: Not to be used for combined heat and power (CHP) purposes (indicative figures only). If necessary, please consult the Applications Department, Perkins Engines Company Limited, Stafford.

Rating definitions

Baseload power

Unlimited hours usage with an average load factor of 100% of the published baseload power rating.

Prime power

Unlimited hours usage with an average load factor of 80% of the published Prime Power over each 24 hour period. A 10% overload is available for 1 hour in every 12 hours.

Standby power

Limited to 500 hours annual usage with an average load factor of 80% of the published Standby Power rating over each 24 hour period. Up to 300 hours of annual usage may be run continuously. No overload is permitted on Standby Power.

Emissions capability

All 4012-46TAG ratings are optimised to the 'best fuel consumption' and do not comply to Harmonised International Regulation Emission Limits. More information on these statements can be obtained by contacting the Applications Department at Perkins Engines Company Limited.

Energy balance

4012-46TAG1A - Temperate

| Designation | Units | Baseload power | Prime power | Standby power |
|--------------------------------|-------|----------------|-------------|---------------|
| Energy in fuel | kW | 2363 | 2988 | 3288 |
| Energy in power output (gross) | kW | 974 | 1213 | 1327 |
| Energy to cooling fan | kW | 64 | | |
| Energy in power output (nett) | kW | 910 | 1149 | 1263 |
| Energy to exhaust | kW | 689 | 901 | 1003 |
| Energy to coolant and oil | kW | 433 | 487 | 513 |
| Energy to radiation | kW | 53 | 71 | 80 |
| Energy to charge coolers | kW | 215 | 316 | 364 |

4012-46TAG1A - Tropical

| Designation | Units | Baseload power | Prime power | Standby power |
|--------------------------------|-------|----------------|-------------|---------------|
| Energy in fuel | kW | 2374 | 2999 | 3299 |
| Energy in power output (gross) | kW | 974 | 1213 | 1327 |
| Energy to cooling fan | kW | 60 | | |
| Energy in power output (nett) | kW | 914 | 1153 | 1267 |
| Energy to exhaust | kW | 692 | 905 | 1007 |
| Energy to coolant and oil | kW | 434 | 488 | 514 |
| Energy to radiation | kW | 57 | 75 | 94 |
| Energy to charge coolers | kW | 217 | 318 | 366 |

4012-46TAG2A - Temperate

| Designation | Units | Baseload power | Prime power | Standby power |
|--------------------------------|-------|----------------|-------------|---------------|
| Energy in fuel | kW | 2450 | 3200 | 3750 |
| Energy in power output (gross) | kW | 1069 | 1331 | 1459 |
| Energy to cooling fan | kW | 42 | | |
| Energy in power output (nett) | kW | 1027 | 1289 | 1417 |
| Energy to exhaust | kW | 805 | 1015 | 1080 |
| Energy to coolant and oil | kW | 288 | 457 | 501 |
| Energy to radiation | kW | 74 | 96 | 107 |
| Energy to charge coolers | kW | 214 | 301 | 423 |

4012-46TAG2A - Tropical

| Designation | Units | Baseload power | Prime power | Standby power |
|--------------------------------|-------|----------------|-------------|---------------|
| Energy in fuel | kW | 2624 | 3310 | 3643 |
| Energy in power output (gross) | kW | 1069 | 1332 | 1459 |
| Energy to cooling fan | kW | 60 | | |
| Energy in power output (nett) | kW | 1009 | 1272 | 1399 |
| Energy to exhaust | kW | 778 | 1010 | 1124 |
| Energy to coolant and oil | kW | 456 | 515 | 544 |
| Energy to radiation | kW | 64 | 84 | 94 |
| Energy to charge coolers | kW | 257 | 368 | 422 |

Note: Not to be used for combined heat and power (CHP) purposes (indicative figures only). If necessary, please consult the Applications Department, Perkins Engines Company Limited, Stafford.

Cooling system

Recommended coolant: 50% inhibited ethylene glycol or 50% inhibited propylene glycol and 50% clean fresh water. Where there is no likelihood of ambient temperature below 10 °C, then clean 'soft' water may be used, treated with 1% by volume of Perkins inhibitor in the cooling system. The inhibitor is available in 1 litre bottles from Perkins, part number 21825 735.

Maximum pressure in cooling circuit... 170 kPa
 Maximum top tank temperature (standby) ... 98 °C
 Maximum static pressure head on pump ... 7 kPa

Total coolant capacity

Electrounit (engine only) ... 73 litres
 Electropak (engine and radiator):

-temperate... 207 litres
 -tropical ... 210 litres

Maximum permissible restriction to coolant pump flow... 20 kPa
 Thermostat operating range... 71 - 85 °C

Coolant flow ... 1200 litres/min

Ambient cooling clearance is based on air temperature at fan 6 °C above ambient.

Temperature rise across the engines (standby power) with inhibited coolant ... 8 °C

Coolant temperature shutdown switch setting ... 101 °C rising

Coolant immersion heater capacity (2 off) ... 4 kWe each

Radiator temperate

Radiator face area ... 3,36 m²

Material and number of rows:

-charge air and water jacket... copper, 4 rows

Fins per inch and material:

-charge air and water jacket... brass, 12 rows

Width of matrix ... 2100 mm

Height of matrix... 1602 mm

Weight of radiator (dry) ... 1187 kg

Pressure cap setting ... 70 kPa

Radiator tropical

Radiator face area ... 3,51 m²

Material and number of rows:

-charge air and water jacket... copper, 4 rows

Fins per inch and material:

-charge air and water jacket... brass, 12 rows

Width of matrix ... 2112 mm

Height of matrix... 1662 mm

Weight of radiator (dry) ... 1289 kg

Pressure cap setting ... 70 kPa

Water jacket cooling data

Temperate and Tropical

-coolant exit temperature (max) ... 98 °C

-coolant inlet temperature (min) ... thermostatic control

-coolant inlet temperature (max) ... 90 °C

Coolant pump

Speed ... 1.4 x e rev/min

Method of drive ... gear

Fan

Type ... pusher

Diameter

-Temperate ... 1600 mm

-Tropical ... 1600 mm

Number of blades ... 8

Material ... Aluminium

Drive ratio

- Tropical ... 0.67:1

- Temperate ... 0.75:1

4012-46TAG1A - Temperate, Standby power

| Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow | | |
|--|---------------------|-----------------------------------|
| Ambient clearance: 50% Glycol | Duct allowance (Pa) | Min airflow (m ³ /min) |
| 40 °C | 250 | 1608 |

4012-46TAG1A - Tropical, Standby power

| Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow | | |
|--|---------------------|-----------------------------------|
| Ambient clearance: 50% Glycol | Duct allowance (Pa) | Min airflow (m ³ /min) |
| 50 °C | 125 | 1888 |

4012-46TAG2A - Temperate, Standby power

| Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow | | |
|--|---------------------|-----------------------------------|
| Ambient clearance: 50% Glycol | Duct allowance (Pa) | Min airflow (m ³ /min) |
| 40 °C | 250 | 1608 |

4012-46TAG2A - Tropical, Standby power

| Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow | | |
|--|---------------------|-----------------------------------|
| Ambient clearance: 50% Glycol | Duct allowance (Pa) | Min airflow (m ³ /min) |
| 50 °C | 125 | 1888 |

Lubrication system

Recommended SAE viscosity: A multigrade oil conforming to the following must be used: API CH4 15W/40.

Note: For additional notes on lubricating oil specifications, please refer to the Operation and Maintenance Manual (OMM)

Oil temperature in rail (Max. continuous operation) ... 105 °C

Oil filter spacing... 20 microns

Sump drain plug tapping size... G1

Method of drive ... gear

Oil pump flow... 7,0 litres/sec

Lubricating oil capacity

-total system capacity... 177 litres

-sump maximum... 157,5 litres

-sump minimum... 115 litres

Lubrication oil pressure

-at rated speed ... 400 kPa

-minimum at 80 °C... 340 kPa

-oil relief valves open ... 400 kPa

-shutdown switch pressure setting (where fitted) .. 193 kPa falling

Normal operating angles

Front and rear... 5°

Side tilt... 10°

Oil consumption

As a percentage of fuel consumption... 0,2 (typically after 250 hrs running in)

Induction system

Maximum air intake restriction of engine:

-clean filter... 4 kPa
 -dirty filter... 18 kPa
 -air filter type... paper element

Exhaust system

Exhaust outlet flange size... 2 x 254 mm Table D flanges
 Back pressure for total system at standby power... 5 kPa
 For recommended pipe sizes, refer to the Installation Manual.

Fuel system

Recommended fuel to conform to:

... BS2869 1998 Class A2 or BS EN590
 Injection system... direct
 Fuel injection pump and injector type... combined unit injector
 Injector pressure... 140 MPa
 Lift pump type... Tuthill TCH 1-089

Delivery

Lift pump fuel delivery at rated speed... 1224 litres/hour
 Heat retained in fuel to tank... 8 kWt
 Maximum fuel inlet temperature... 58 °C
 Delivery pressure... 300 kPa
 Maximum suction head at pump inlet... 2,5 m
 Maximum static pressure head... see installation manual for details
 Fuel filter spacing... 10 microns
 Governor type... electronic
 Governing to... ISO 8528-12 CLASS 3 & 4; ISO 8528-5 CLASS G2
 Tolerance on fuel consumption... +5%

Fuel consumption - 4012-46TAG1A

| Ratings | g/kWhr | litres/hr |
|--------------------------|--------|-----------|
| Temperate cooling | | |
| Standby | 212,7 | 314 |
| Prime | 212,0 | 284 |
| Baseload | 213,2 | 229 |
| 75% Prime | 220,0 | 221 |
| 50% Prime | 236,3 | 158 |
| Tropical cooling | | |
| Standby | 212,7 | 314 |
| Prime | 212,1 | 284 |
| Baseload | 213,2 | 229 |
| 75% Prime | 220,0 | 221 |
| 50% Prime | 236,2 | 158 |

Fuel consumption calculated on nett rated powers.

Fuel consumption - 4012-46TAG2A

| Ratings | g/kWhr | litres/hr |
|--------------------------|--------|-----------|
| Temperate cooling | | |
| Standby | 211,6 | 344 |
| Prime | 213,2 | 315 |
| Baseload | 213,7 | 251 |
| 75% Prime | 222,0 | 246 |
| 50% Prime | 229,3 | 169 |
| Tropical cooling | | |
| Standby | 211,6 | 344 |
| Prime | 213,3 | 315 |
| Baseload | 213,7 | 251 |
| 75% Prime | 222,0 | 246 |
| 50% Prime | 229,1 | 169 |

Fuel consumption calculated on nett rated powers.

Electrical system

Type... negative ground / insulated return
 Alternator voltage... 24 volts with integral regulator
 Alternator output... 40 amps output, 28 volts at 20 °C ambient
 Starter type... axial
 Starter motor voltage... 24 volts
 Starter motor power... 16,4 kW
 Number of teeth on flywheel... 156
 Number of teeth on starter pinion... 12
 Minimum cranking speed... 120 rev/min
 Pull in current of starter motor
 solenoid @ 0°C max ⁽¹⁾... 30 amps at 24 volts
 Hold in current of starter motor
 solenoid @ 0°C max... 9 amps at 24 volts
 Stop solenoid max pull-in current @ 0°C ⁽¹⁾... 31 amps at 24 volts
 Stop solenoid max hold-in current @ 0°C... 0,6A at 24 volts
 1. All leads to be rated at 10 amps minimum.

Cold start recommendations

| Temperature range | |
|--------------------------------------|---|
| 5 °C down to -10 °C (41 °F to 14 °F) | Oil SAE grade: 15W40 CH4 Starter: 2 x 24 volts Battery: 4 x 12V 286 Ah Max breakaway current: 1600 amps Cranking current: 810 amps Aids: block heaters Min mean cranking speed: 120 rev/min |

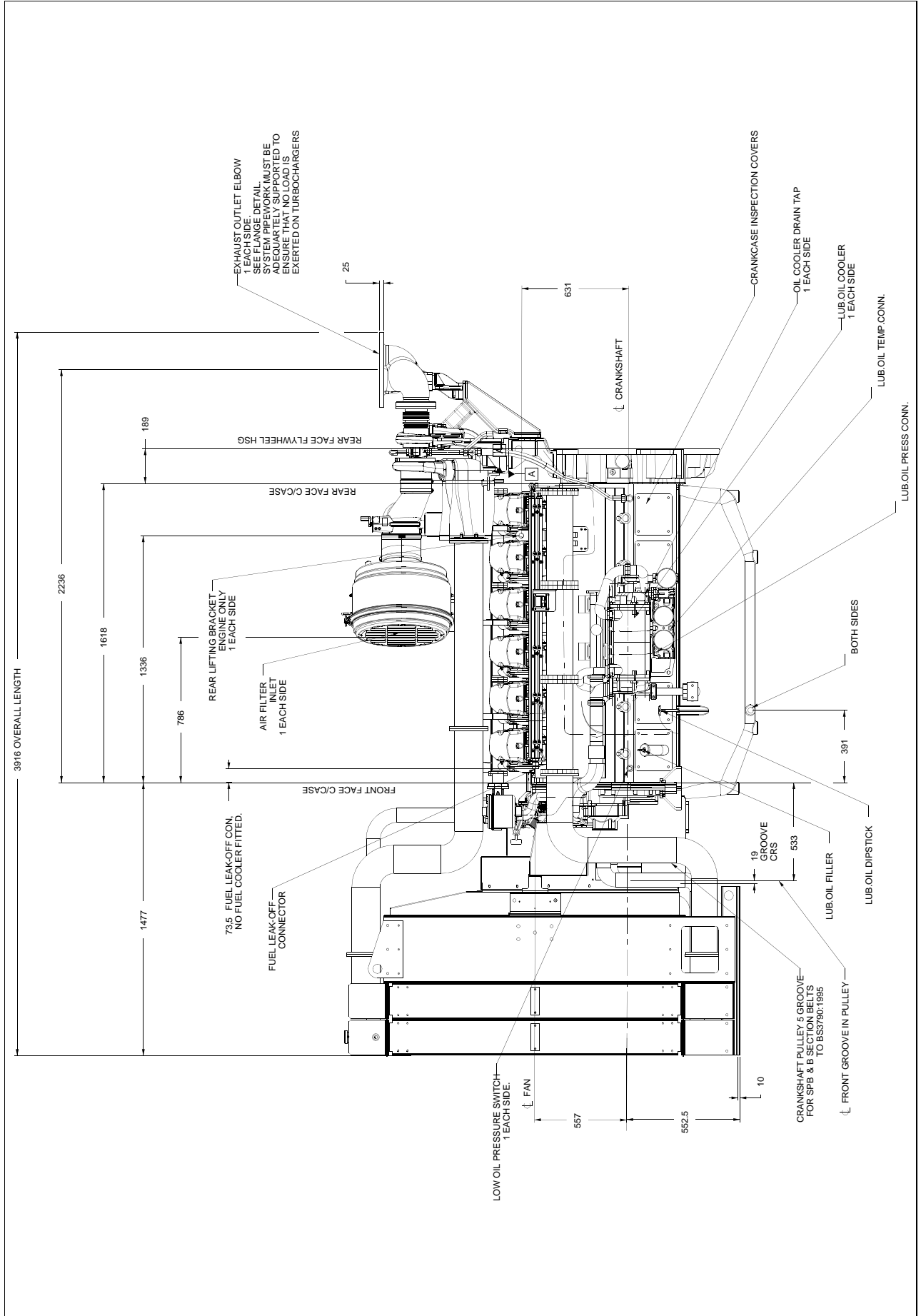
Notes:

- The battery capacity is defined by the 20 hour rate
- The oil specification should be for the minimum ambient temperature as the oil will not be warmed by the immersion heater
- Breakaway current is dependant on battery capacity available. Cables should be capable of handling the transient current which may be up to double the steady cranking current.

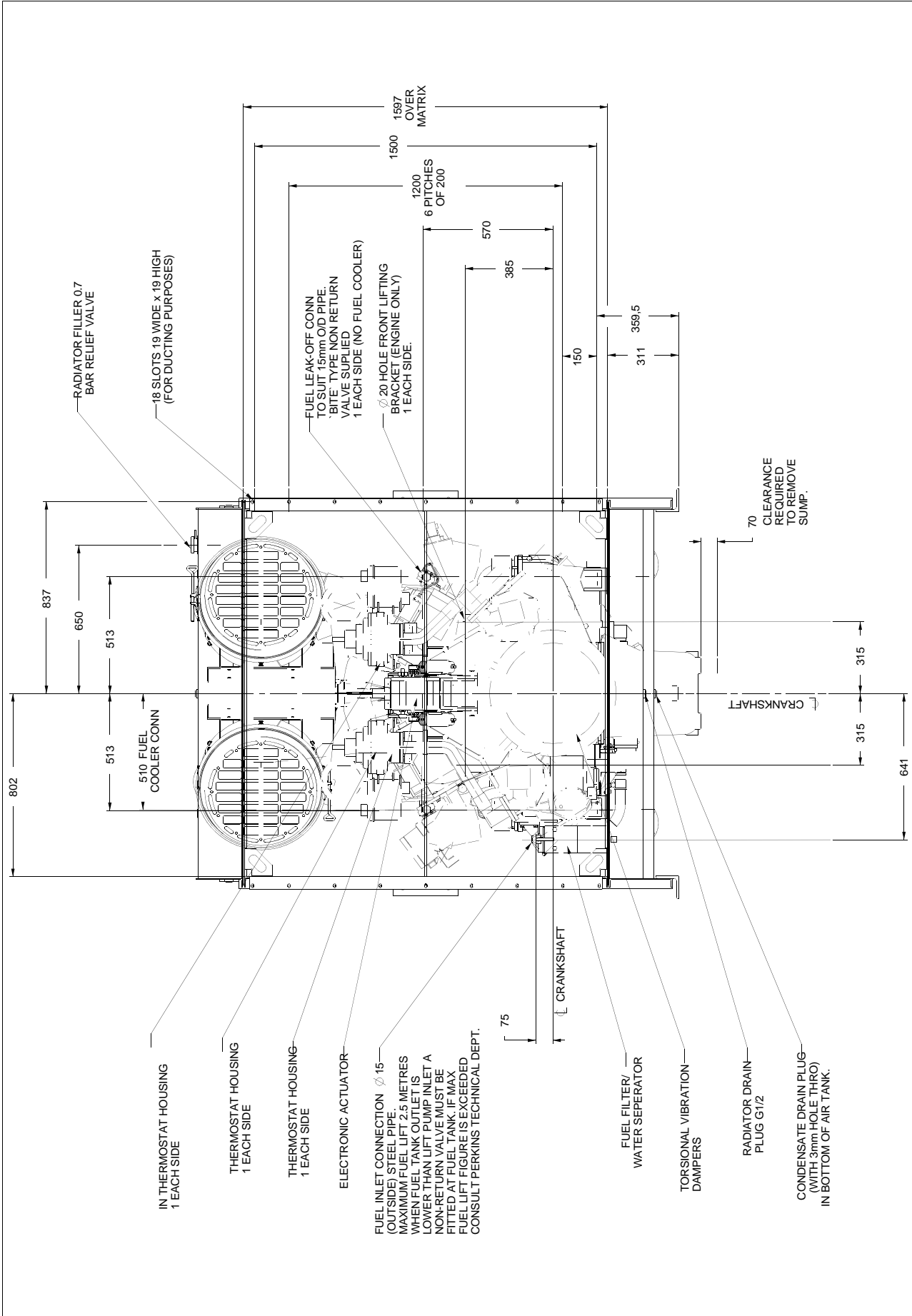
Engine mounting

Maximum static bending moment at rear face of block... 1356 Nm
 Maximum additional load applied to flywheel due to all rotating components... 850 kg

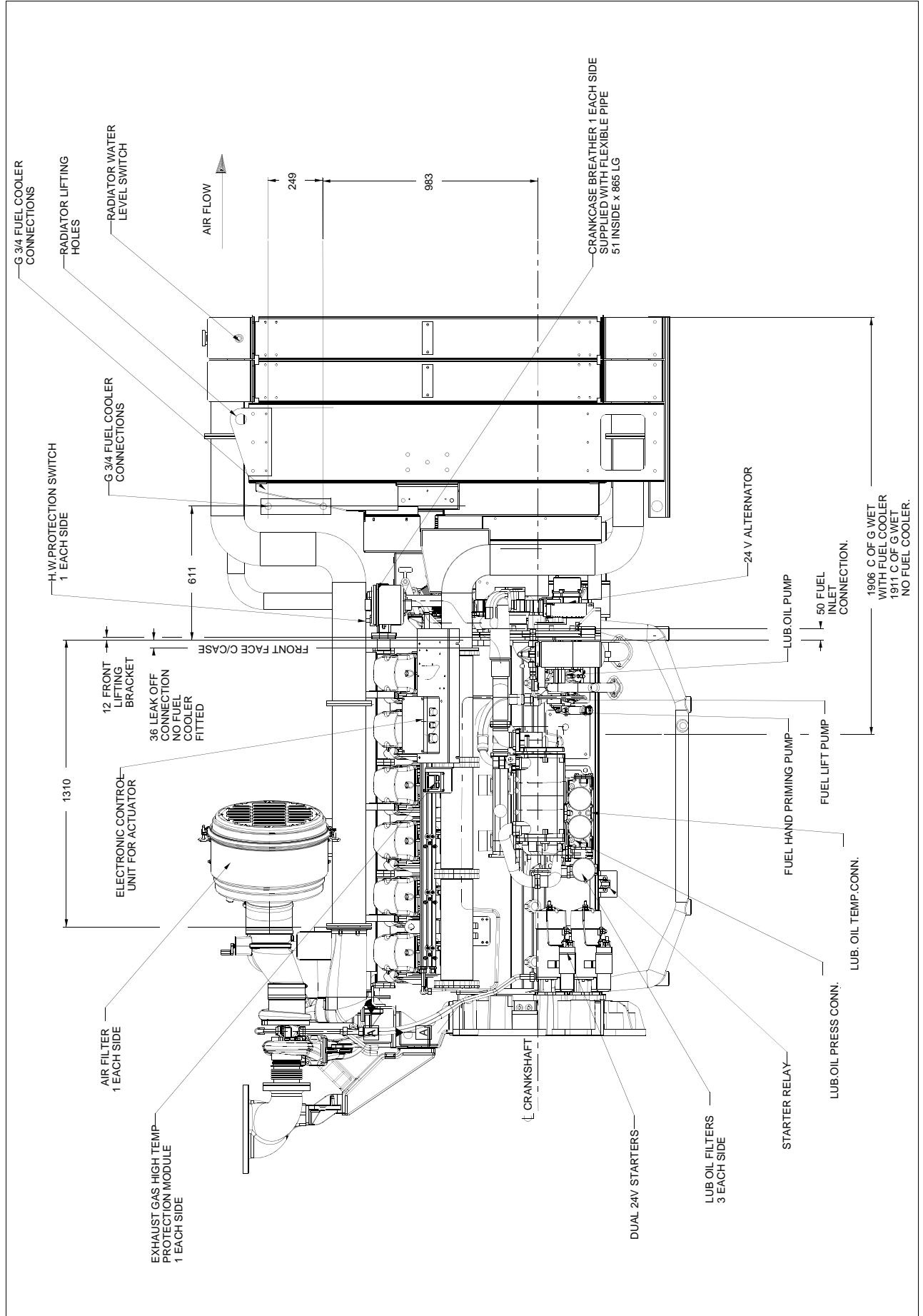
4012-46TAG1A / 4012-46TAG2A Temperate - Left hand side view



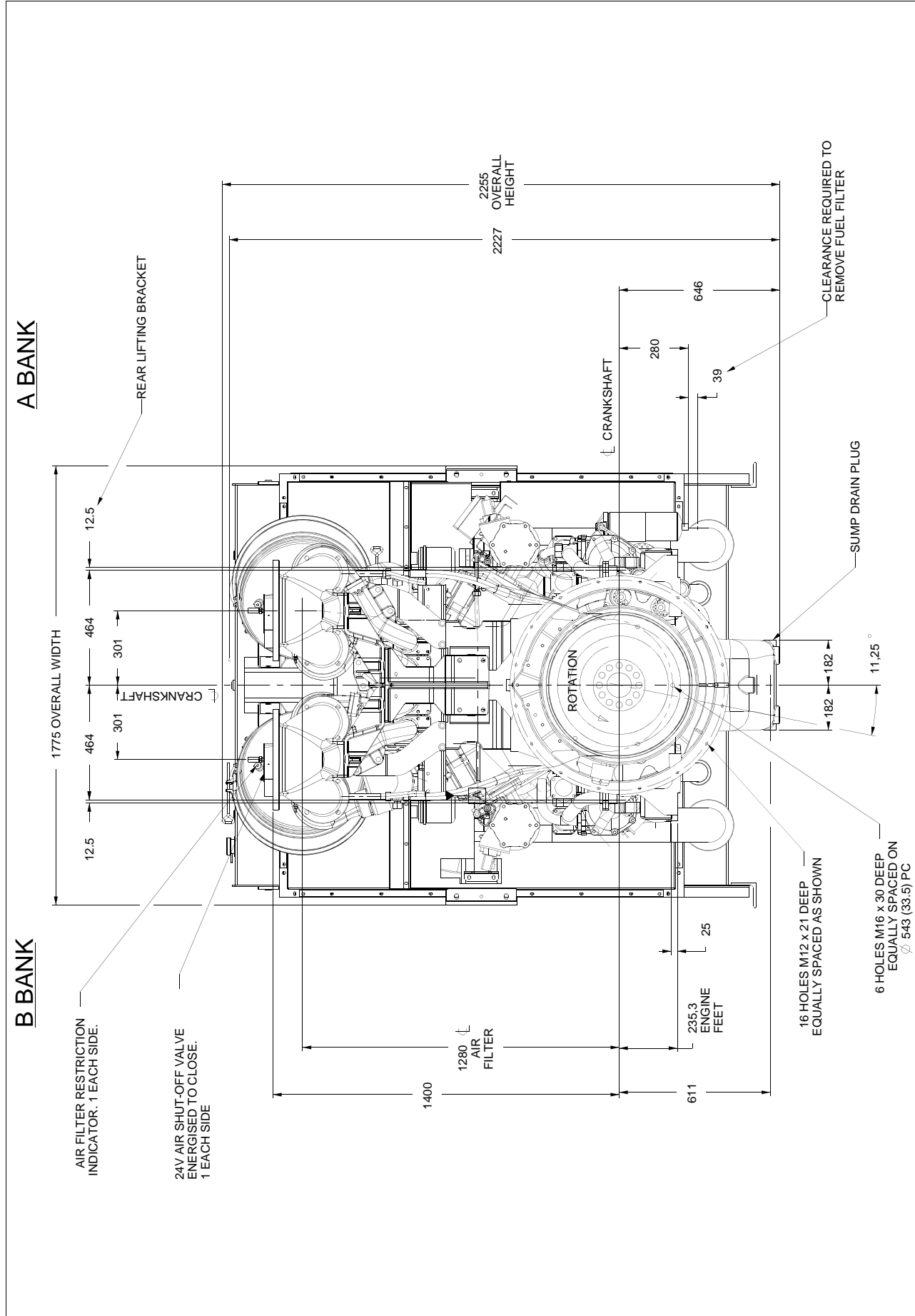
4012-46TAG1A / 4012-46TAG2A Temperate - Front view



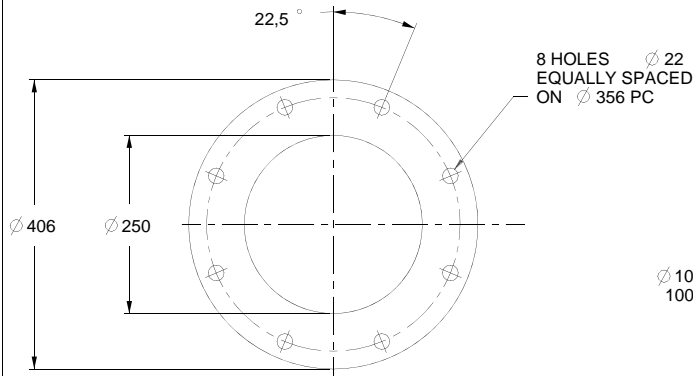
4012-46TAG1A / 4012-46TAG2A Temperate - Right hand side view



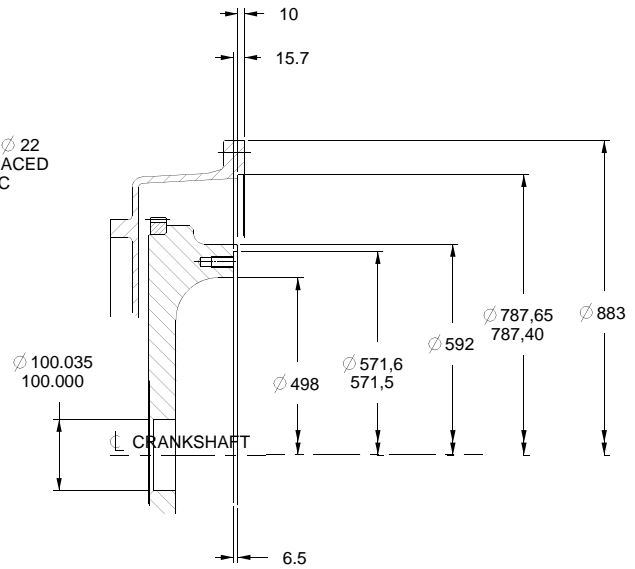
4012-46TAG1A / 4012-46TAG2A Temperate - Rear view



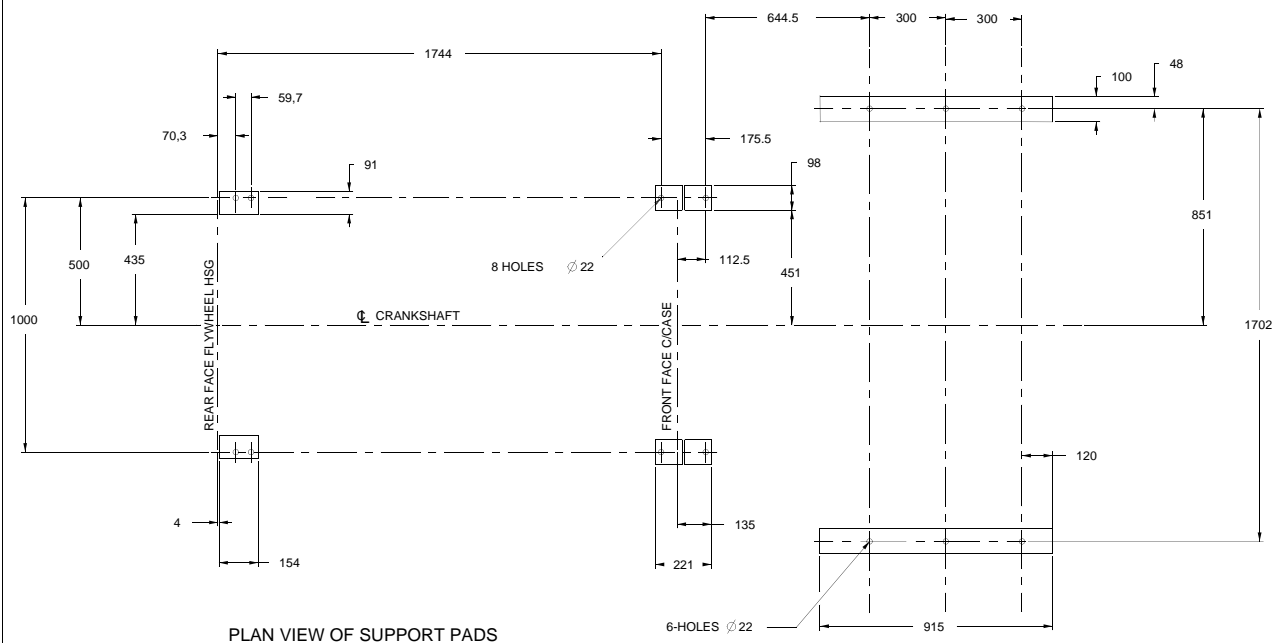
4012-46TAG1A / 4012-46TAG2A Temperate - Plan view of support pads, exhaust outlet flange and flywheel



DETAIL OF EXHAUST OUTLET FLANGE
(B.S.10 TABLE D)
SCALE 1:5

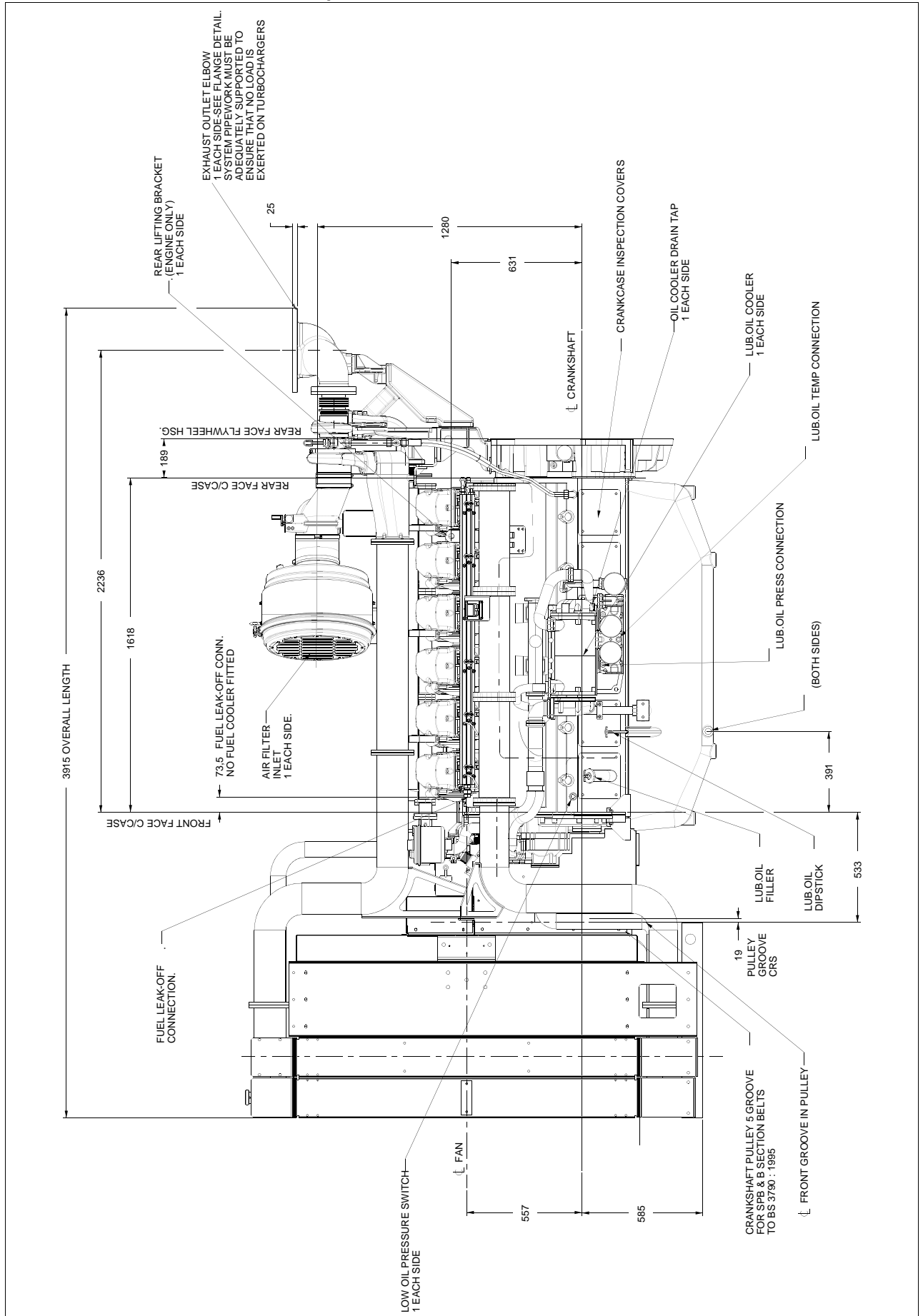


DETAIL OF SAE 518 FLYWHEEL
AND SAE 00 FLYWHEEL HOUSING
(METRIC TAPPINGS)
SCALE 1:5

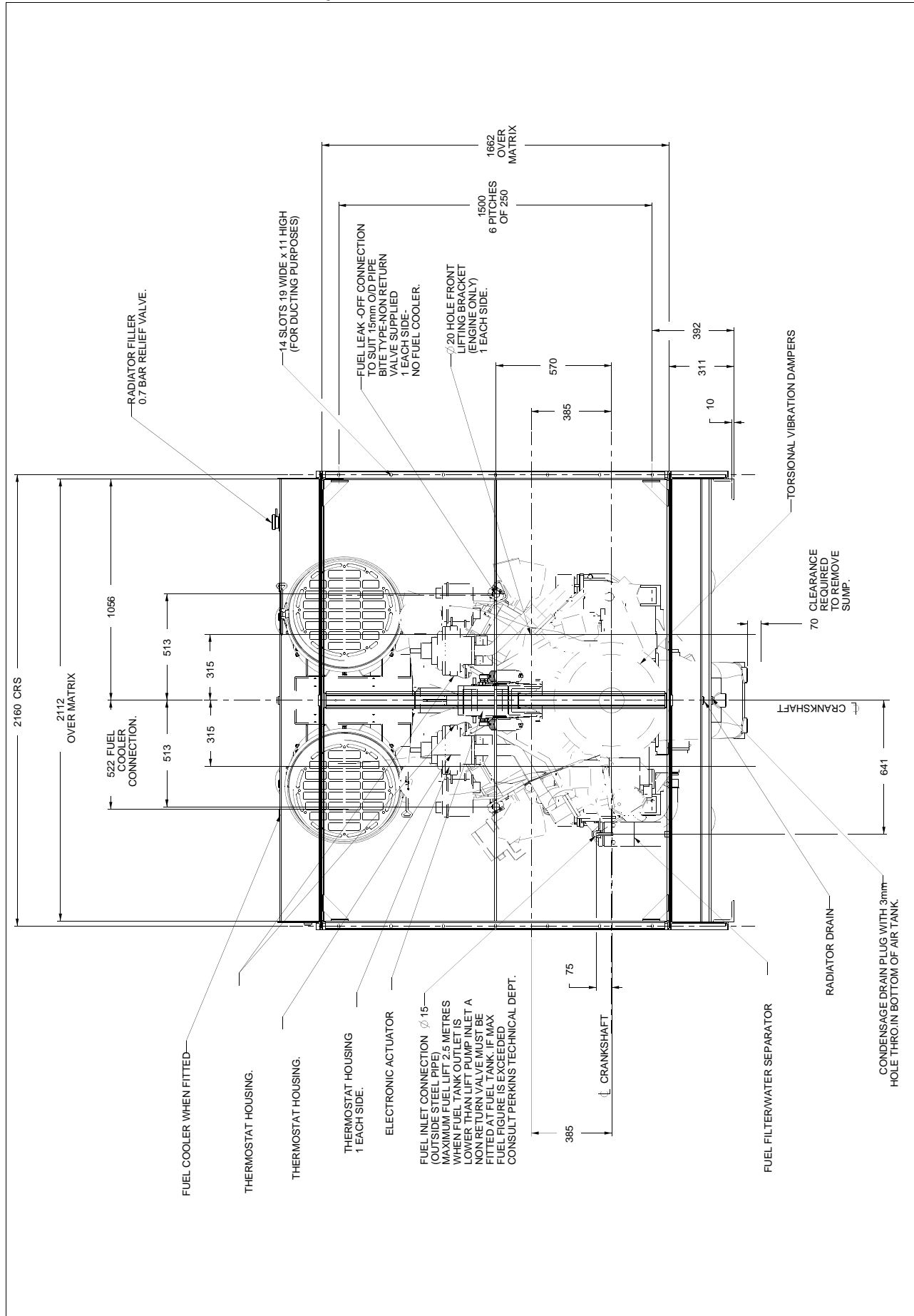


PLAN VIEW OF SUPPORT PADS

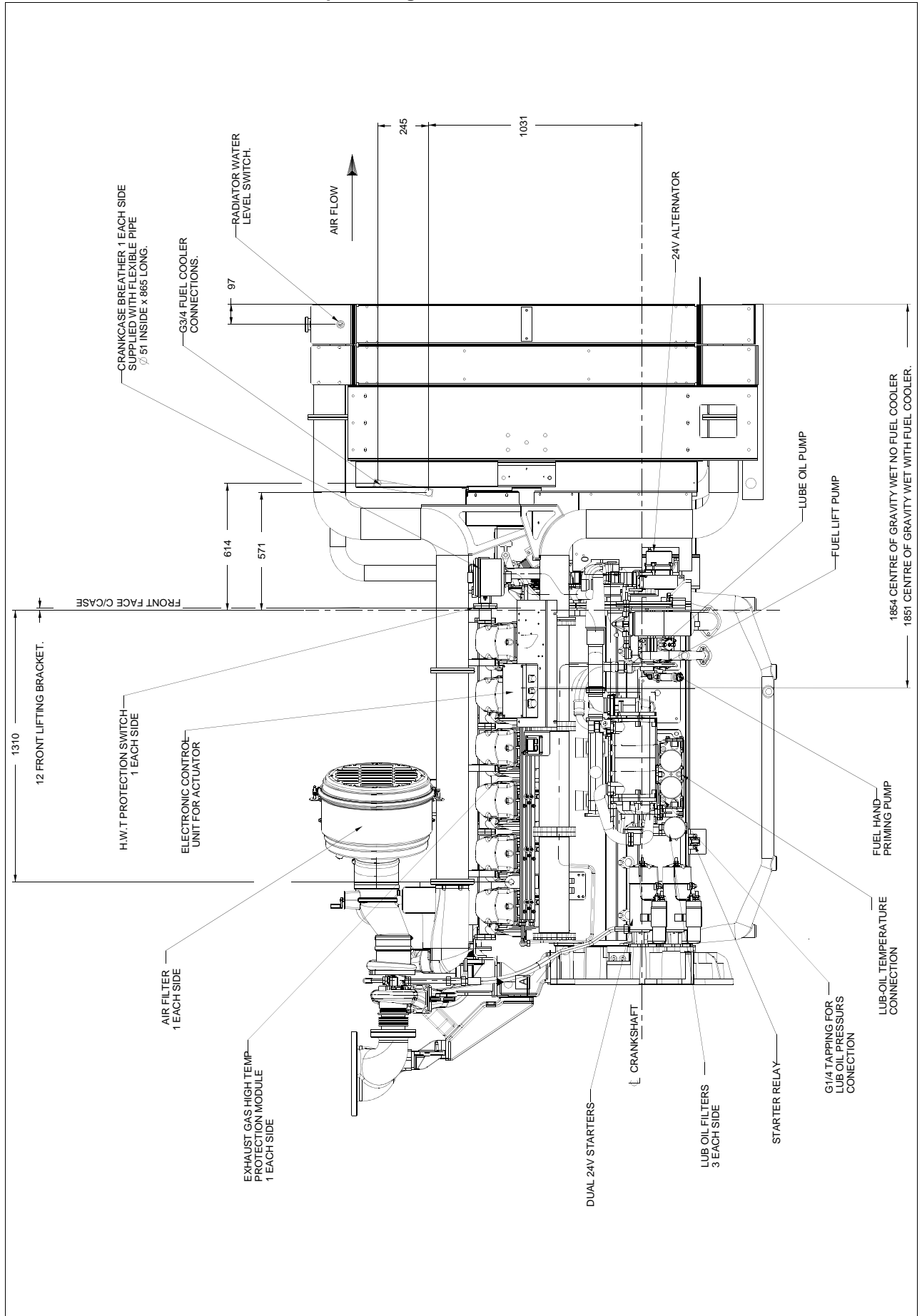
4012-46TAG1A / 4012-46TAG2A Tropical - Left hand side view



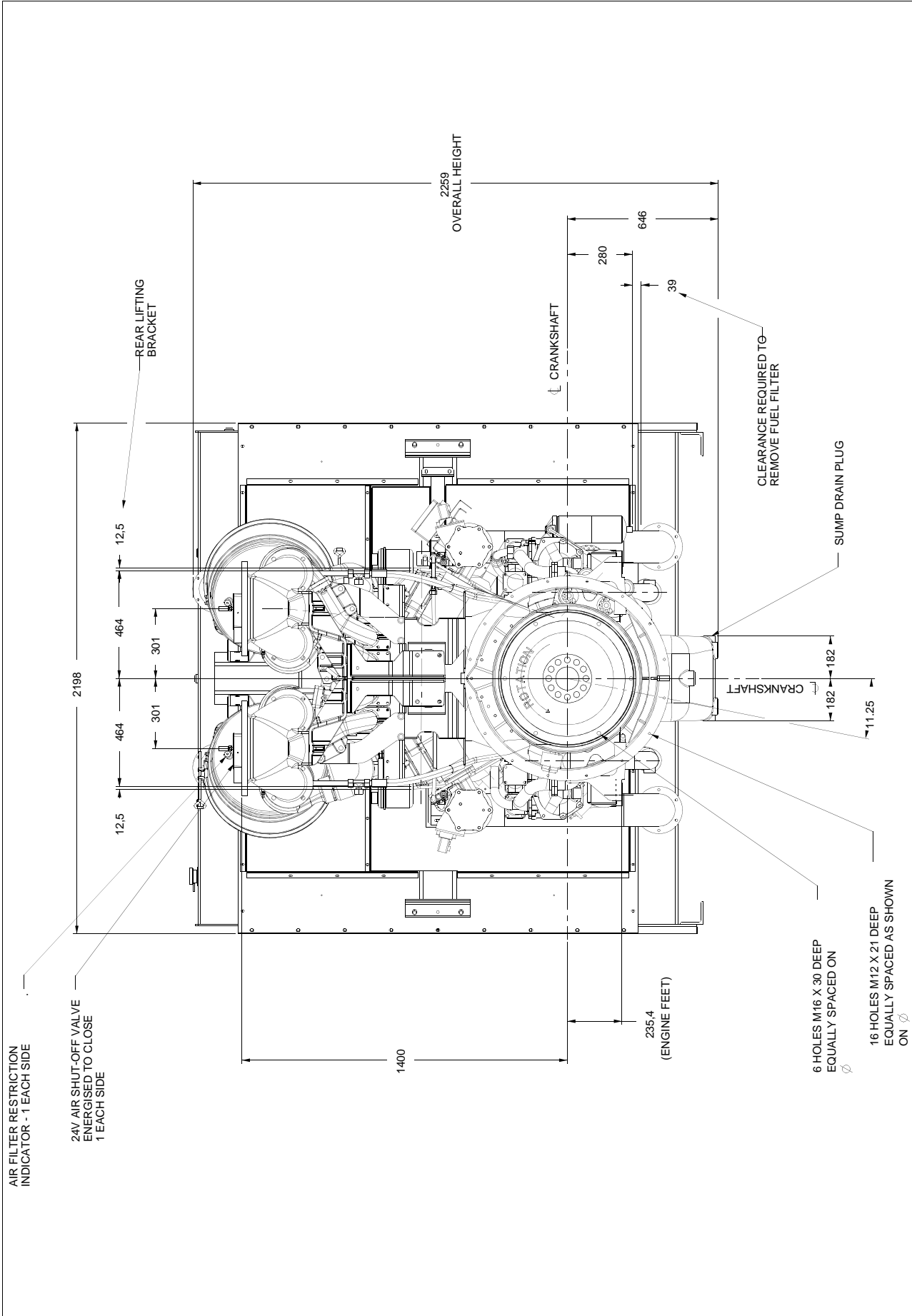
4012-46TAG1A / 4012-46TAG2A Tropical - Front view



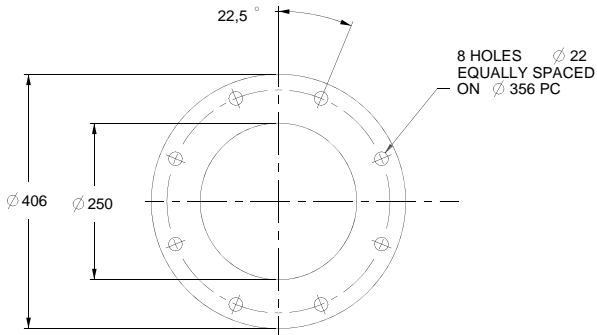
4012-46TAG1A / 4012-46TAG2A Tropical - Right hand side view



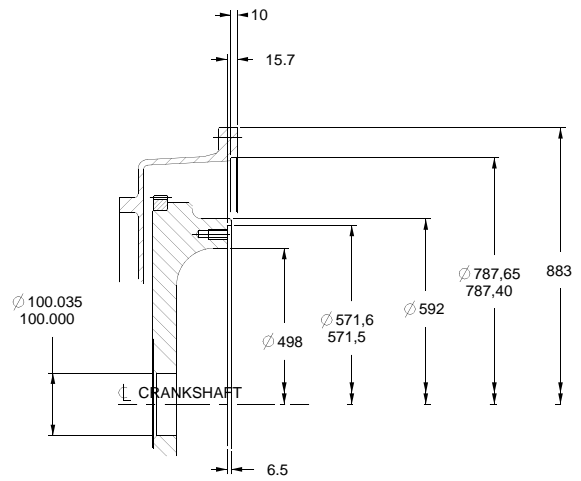
4012-46TAG1A / 4012-46TAG2A Tropical - Rear view



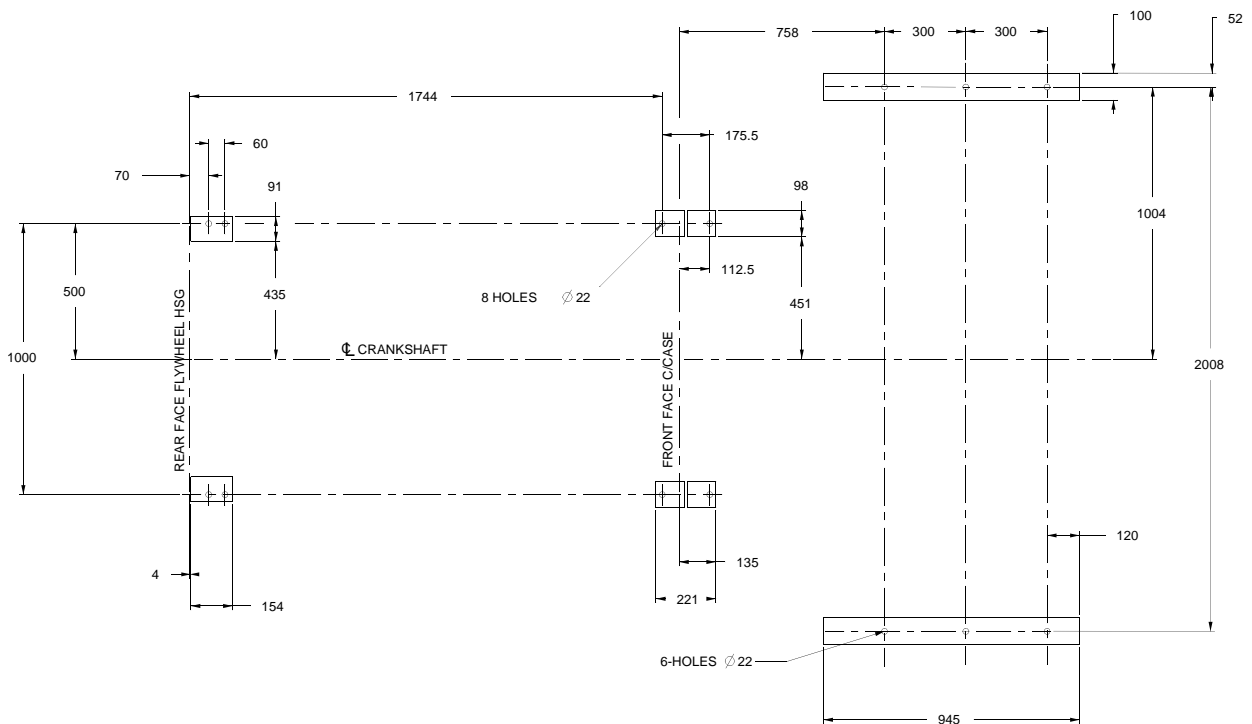
4012-46TAG1A / 4012-46TAG2A Tropical - Plan view of support pads, exhaust outlet flange and flywheel



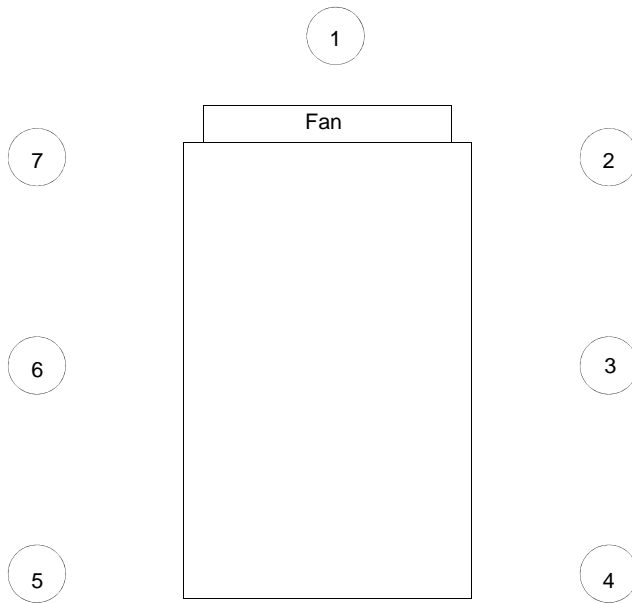
DETAIL OF EXHAUST OUTLET FLANGE
(B.S.10 TABLE D)
SCALE 1:5



DETAIL OF SAE 518 FLYWHEEL
AND SAE 00 FLYWHEEL HOUSING
(METRIC TAPPINGS)
SCALE 1:5



Noise



| 1800 rev/mins standby power | |
|-----------------------------|-------|
| Position | d(B)A |
| 1 | 110 |
| 2 | 114 |
| 3 | 114 |
| 4 | 108 |
| 5 | 109 |
| 6 | 113 |
| 7 | 113 |

| 1800 rev/mins standby power | |
|-----------------------------|-----------------|
| 1/3 (1/1 bandwidth) | |
| Octave analysis | |
| Hz | dB @ position 3 |
| 31.5 | 91 |
| 63 | 99 |
| 125 | 94.6 |
| 250 | 105 |
| 500 | 110 |
| 1k | 104 |
| 2k | 100 |
| 4k | 98 |
| 8k | 96 |

Noise Levels

The figures for total noise levels are typical for an engine running at Standby Power rating in a semi-reverberant environment and measured at a distance of one metre from the periphery of the engine.

Total Noise Level

Sound pressure level re: -20x10 Pa
Ambient noise level 79 dBA

Octave analysis performed at the position of maximum noise.

Typical load acceptance (cold)

| Engine type | Initial load acceptance when engine reaches rated speed (15 seconds maximum after engine starts to crank) | | | | 2nd load application immediately after engine has recovered to rated speed (5 seconds after initial load application) | | | |
|--------------|--|---------------------------|---------------------------------|---------------------------------|--|---------------------------|---------------------------------|---------------------------------|
| | Prime power% | Load kW _e nett | Transient frequency deviation % | Frequency recovery time seconds | Prime power% | Load kW _m nett | Transient frequency deviation % | Frequency recovery time seconds |
| 4012-46TAG1A | 70 | 764 | ≤ 10 | 5 | 30 | 328 | ≤ 10 | 5 |
| 4012-46TAG2A | 70 | 843 | ≤ 10 | 5 | 30 | 361 | ≤ 10 | 5 |

The above figures were obtained under test conditions as follows:

- Min engine block temperature45 °C
 - Ambient temperature 15 °C
 - Governing mode Isochronous
 - Alternator inertia 50 kgm²
 - Under frequency roll off (UFRO) point set to 1 Hz below rated
 - UFRO rate set to 2% voltage/1% frequency
 - LAM on / off on
- All tests were conducted using an engine installed and serviced to Perkins Engines Company Limited recommendations.
Applied load is a percentage of generator electrical output efficiency as published in the general installation section of this data sheet.

The information given on this Technical Data Sheet is for standard engines, and for guidance only. For ratings other than those shown contact Perkins Engines Company Limited, Stafford.

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