

MARINE DIESEL & ENGINEERING, INC.
525 Greaton Avenue
Davie, FL 33325
(954) 260-5250

VISUAL ENGINE INSPECTION REPORT

DATE:	JULY 26, 2024	INSPECTOR:	CODY DIBELLA
PURCHASER:	██████████	VESSEL:	68
PHONE:	██████████	BUILDER:	UNIESSE
EMAIL:		YEAR:	2009
BROKER:	██████████	VESSEL NAME:	EQUINOX
SURVEYOR:	ROLLIE GORDON	LOCATION:	PALM BEACH
		HULL NO.:	IT-UNS65S041809

IDENTIFICATION AND COLD CHECK INFORMATION

	PORT	STARBOARD
ENGINE MANUFACTURER	MAN	MAN
ENGINE SERIAL NUMBER	69019148071878	69019148091878
ENGINE MODEL NUMBER	D2842LE423	D2842LE423
ENGINE HOURS	994	991
TRANSMISSION MAKE	ZF	ZF
TRANSMISSION MODEL	ZF 665 A	ZF 665 A
TRANSMISSION SERIAL	20104211	20104210
TRANSMISSION RATIO	1.971	1.971

FLUID SYSTEMS CHECK

	PORT	STARBOARD
COOLANT LEVEL	FULL	FULL
COOLANT CONDITION	SERVICEABLE	SERVICEABLE
ENGINE OIL LEVEL	FULL	FULL
ENGINE OIL CONDITION	SERVICEABLE	SERVICEABLE
TRANSMISSION OIL LEVEL	FULL	FULL
TRANSMISSION OIL CONDITION	CLEAN	CLEAN
TRANSMISSION STRAINER	SPIN ON FILTER	SPIN ON FILTER

INSPECTION OF PORT ENGINE

SEA WATER INLET VALVE	FREE
SEA WATER INLET HOSE	SERVICEABLE
SEA WATER STRAINER	CLEAN
RAW WATER PUMP	SECURE
RAW WATER PIPING	SECURE
FUEL COOLERS	NO LEAKS OBSERVED
AFTER COOLERS	NO LEAKS OBSERVED
TRANSMISSION OIL COOLER	SOME CORROSION
RAW WATER DISCHARGE HOSE	SERVICEABLE
RAW WATER HOSES	SERVICEABLE
RAW WATER CLAMPS	SECURE

EXHAUST

DISCHARGE RISERS	DUAL METAL COVERINGS
EXHAUST HOSE	SERVICEABLE
EXHAUST CLAMPS	SECURE

COOLING SYSTEM

HEAT EXCHANGERS	TUBE AND BUNDLE/NO LEAKS OBSERVED
FRESH WATER PUMP	NO LEAKS OBSERVED
COOLANT HOSES	SECURE
CLAMPS	SECURE
HIGH PRESSURE LINES	SECURE

FUEL SYSTEM

PRIMARY FUEL FILTERS	DUAL RACOR 1000
SECONDARY FILTERS	HUMMEL/ CARTRIDGE
FUEL SUPPLY HOSE	SECURE
ENGINE FUEL LINES	SECURE
FUEL MANIFOLD	VALVE AT HUMMEL
FUEL PRIMING SYSTEM	HAND PUMP

INSPECTION OF PORT ENGINE (CONT'D)

ENGINE AIR INTAKE

TYPE	M.A.N K&N FILTER
AIR SEP REGULATOR	MAINTENANCE FREE
AIR SEP DRAIN LINES	N/A

ENGINE ASPIRATION

TURBO CHARGERS	DUAL WATER COOLED
BLOWERS	N/A
AFTER COOLERS	RAW WATER COOLED
AIR SHUT DOWN SYSTEM	N/A
BOOST HOSE & PIPING	SECURE

ENGINE MOUNTING

TYPE	SINGLE STUD ISOLATOR
CONDITION	OK

CONTROLS

TYPE	AVENTICS
OPERATION	GOOD
SYNCHRONIZER	YES

INSPECTION OF STARBOARD ENGINE

SEA WATER INLET VALVE	FREE
SEA WATER INLET HOSE	SERVICEABLE
SEA WATER STRAINER	CLEAN
RAW WATER PUMP	SECURE
RAW WATER PIPING	SECURE
FUEL COOLERS	NO LEAKS OBSERVED
AFTER COOLERS	NO LEAKS OBSERVED
TRANSMISSION OIL COOLER	SOME CORROSION
RAW WATER DISCHARGE HOSE	AGED
RAW WATER HOSES	SERVICEABLE
RAW WATER CLAMPS	SECURE

EXHAUST

DISCHARGE RISERS	DUAL METAL COVERINGS
EXHAUST HOSE	SERVICEABLE
EXHAUST CLAMPS	SECURE

COOLING SYSTEM

HEAT EXCHANGERS	TUBE AND BUNDLE/NO LEAKS OBSERVED
FRESH WATER PUMP	NO LEAKS OBSERVED
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FUEL SYSTEM

PRIMARY FUEL FILTERS	DUAL RACOR 1000
SECONDARY FILTERS	HUMMEL/ CARTRIDGE
FUEL SUPPLY HOSE	SECURE
ENGINE FUEL LINES	SECURE
FUEL MANIFOLD	VALVE AT HUMMEL
FUEL PRIMING SYSTEM	HAND PUMP

INSPECTION OF STARBOARD ENGINE (CONT'D)

ENGINE AIR INTAKE

TYPE	M.A.N K&N FILTER
AIR SEP REGULATOR	MAINTENANCE FREE
AIR SEP DRAIN LINES	N/A

ENGINE ASPIRATION

TURBO CHARGERS	DUAL WATER COOLED
BLOWERS	N/A
AFTER COOLERS	RAW WATER COOLED
AIR SHUT DOWN SYSTEM	N/A
BOOST HOSE & PIPING	SECURE

ENGINE MOUNTING

TYPE	SINGLE STUD ISOLATOR
CONDITION	OK

CONTROLS

TYPE	AVENTICS
OPERATION	GOOD
SYNCHRONIZER	YES

STATIONARY INSPECTION OF ACCESSORIES

	PORT	STARBOARD
ENGINE AIR COMPRESSOR	N/A	N/A
STABILIZER PUMPS	N/A	N/A
POWER STEERING PUMPS	N/A	N/A
PTO	N/A	N/A
BELT DRIVEN ADD ONS	ALTERNATOR	ALTERNATOR
OIL UNDER ENGINES	NO	NO
MISC ENGINE OIL LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
TRANS OIL LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
FUEL LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
COOLANT LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
SALT WATER LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
EXHAUST LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
BOOST LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
HYDRAULIC OIL LEAKS	NO LEAKS OBSERVED	NO LEAKS OBSERVED
CONTROLS	ELECTRONIC	ELECTRONIC

INITIAL START UP INSPECTION

	PORT	STARBOARD
BATTERY VOLTAGE	26.3 VDC	26.3 VDC
ALARM OPERATIONAL	OPERATIONAL	OPERATIONAL
ALL GAUGES TO ZERO	YES	YES

ENGINE STARTED COLD DOCKSIDE

	PORT	STARBOARD
EXHAUST SMOKE	NO	NO
OIL PRESSURE	39	38
TRANS PRESSURE	347	345
R.P.M.	600	600
ENGINE VIBRATION	NO	NO
BATTERY VOLTAGE	26.2	26.4
INSPECTED FOR LEAKS	YES	YES
CONTROL OPERATION	OK	OK

IDLE SPEED OPERATING CONDITION

(CHECK AFTER COOL DOWN FROM RUNNING HARD)

	PORT	STARBOARD
ENGINE RPM	600	600
COOLANT TEMP	179	174
ENGINE OIL PRESSURE	21	21
ENGINE OIL TEMP	204	196
TRANS OIL PRESSURE	343	341
TRANS OIL TEMP	132	134

BACK DOWN TEST

(RUN ONE ENGINE AT A TIME FWD & RVRS UP TO 1500 RPM)

	PORT	STARBOARD
MOUNT MOVEMENT OR RUNOUT	NO	NO
TRANS CUPLING RUNOUT	0	0
TRANS REAR SEAL LEAK	NO	NO
SHAFT SEAL LEAKING WATER	NO	NO
SHAFT MOVEMENT	NO	NO
ENGINE STALLING	NO	NO

OIL SAMPLES TAKEN FROM

PORT ENGINE	YES
STARBOARD ENGINE	YES
PORT TRANSMISSION	YES
STBD. TRANSMISSION	YES
GENERATOR(S)	YES

GENERATOR SET(S)
(COLD CHECKS BEFORE STARTING)

MANUFACTURER	ONAN
MODEL	19 MDKBV-7334A
SERIAL	D080172172
SPEC	A
KW	23 KW
HOURS	1614
AC VOLTAGE	240 VAC
DC VOLTAGE	12 VDC
HZ	60
PHASE	SINGLE
WIRED 120 OR 120/240	120/240
OIL LEVEL	FULL
OIL CONDITION	CLEAN
COOLANT LEVEL	LOW
COOLANT CONDITON	WEAK
BELT TENSION	LOOSE
LIFT MUFFLER CONDITION	SECURE
EXHAUST HOSE CONDITION	SEE NOTES
FRESH WATER PUMP	LEAKING
HOSES AND CLAMPS	SERVICEABLE
EXHAUST ELBOW CONDITION	NO LEAKS OBSERVED
GENERAL WIRING	GOOD
SEA STRAINER	CLEAN
SEA VALVE	FREE
CIRCUIT BREAKER	HELD LOAD

START UP AND TEST RUN

RUNNING AT AVERAGE LOAD

AC VOLTAGE	240
AMP DRAW	41
HZ	60
EXHAUST COLOR	CLEAN
SALT WATER FLOW	GOOD
FRESH WATER TEMP	182
OIL PRESSURE	48

ENGINE SURVEY

THE FOLLOWING ARE RECOMMENDATIONS BASED ON EXTERNAL VISUAL INSPECTION AND SEA TRIAL:

PORT ENGINE:

1. PORT GEAR COOLER IS CORRODED AND OIL LINES ARE AGED AND RUSTY. RECOMMEND SERVICE GEAR COOLER AND REPLACE OIL LINES.
2. RAW WATER DISCHARGE OVERBOARD FITTINGS AT HULL SIDE HAVE RUSTED PIN HOLES. RECOMMEND REPAIR/REPLACE OVERBOARD DISCHARGE FITTINGS.
3. EXHAUST BLANKETS ARE LOOSE AND NOT INSTALLED PROPERLY. METAL COVERINGS ARE LOOSE AND RATTLING. RECOMMEND PROPERLY INSTALL EXHAUST BLANKETS AND METAL COVERS.
4. PORT ENGINE AIR FILTERS ARE DIRTY. RECOMMEND CLEAN AND OIL AIR FILTERS.
5. PORT GEARBOX OIL PRESSURE WAS ERRATIC DURING SEA TRIAL. RECOMMEND DIAGNOSE AND REPAIR BEFORE PURCHASE OF THE VESSEL.
6. PORT ENGINE HAD COOLANT PRESSURE AFT WATER PUMP ALARM GO OFF DURING SEA TRIAL. RECOMMEND DIAGNOSE AND REPAIR.
7. ENGINE AND TRANSMISSION OIL ANALYSIS SHOW COPPER IN THE OIL. RECOMMEND CHANGE OIL, FILTERS, AND RETEST OIL AFTER 10 HOURS OF RUNNING HARD.

STARBOARD ENGINE:

1. STARBOARD GEAR COOLER IS CORRODED AND OIL LINES ARE AGED AND RUSTY. RECOMMEND SERVICE GEAR COOLER AND REPLACE OIL LINES.
2. RAW WATER DISCHARGE OVERBOARD FITTINGS AT HULL SIDE HAVE RUSTED PIN HOLES. RECOMMEND REPAIR/REPLACE OVERBOARD DISCHARGE FITTINGS.
3. STARBOARD RAW WATER DISCHARGE Y-PIPE HAS TAPE THAT GOES UNDER HOSE. RECOMMEND REMOVE TAPE FOR FURTHER INSPECTION.
4. STARBOARD RAW WATER DISCHARGE HOSES ARE AGED. RECOMMEND REPLACE DISCHARGE HOSES.

- 5. EXHAUST BLANKETS ARE LOOSE AND NOT INSTALLED PROPERLY. METAL COVERINGS ARE LOOSE AND RATTLING. RECOMMEND PROPERLY INSTALL EXHAUST BLANKETS AND METAL COVERS.**
- 8. STARBOARD ENGINE AIR FILTERS ARE DIRTY. RECOMMEND CLEAN AND OIL AIR FILTERS.**
- 9. ENGINE AND TRANSMISSION OIL ANALYSIS SHOW COPPER IN THE OIL. RECOMMEND CHANGE OIL, FILTERS, AND RETEST OIL AFTER 10 HOURS OF RUNNING HARD.**

GENERATOR RECOMENDATIONS:

THE FOLLOWING ARE RECOMMENDATIONS BASED UPON AN EXTERNAL VISUAL INSPECTION AND LOAD TEST USING SHIPS EQUIPMENT.

- 1. GENERATORS RAW WATER DISCHARGE EXHAUST HOSES ARE AGED AND CRACKING. RECOMMEND REPLACE HOSES AND CLAMPS.**
- 2. OVERBOARD DISCHARGE VALVE AND FITTINGS ARE HEAVILY CORRODED. RECOMMEND REPLACE VALVE AND FITTINGS.**
- 3. GENERATORS HEAT EXCHANGER IS CORRODED. RECOMMEND REMOVE AND SERVICE HEAT EXCHANGER.**
- 4. COOLANT IS LOW AND WEAK. RECOMMEND REPLACE COOLANT WHEN YOU SERVICE HEAT EXCHANGER.**
- 5. FRESH WATER PUMP IS SHOWING SIGNS OF LEAK FROM WEEP HOLE. RECOMMEND REPLACE PUMP AND ALSO REPLACE BELT WHEN REPLACE FRESH WATER PUMP.**

The Opinions and Recommendations set forth in this report were compiled as of this date stated and do no imply or constitute a warranty of any type. This report issued without prejudice to the rights of whom it may concern.