

MILOP Design and Consulting Pty Ltd

Mechanical and steel structure engineering, design & consulting. Concrete pumping equipment, tower cranes, inspection and certification. Professional engineer
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STG Pumps Pty Ltd
Po Box 134
MOOREBANK, NSW, 1875

Attn: Joe



RE: Concrete Boom Pump, Flowcrete– **STG 28, Mitsubishi, PERIODIC INSPECTION Certificate no 2768/23, 01st May 2023**

A visual inspection of the concrete boom pump Flowcrete was performed on 01st May 2023 in the yard of STG Pumps. The inspection was a regular periodic boom inspection, and it presents an assessment of continued service and structural conditions of the concrete boom pump at the time of the inspection. The concrete boom pump was inspected in assembly conditions. The boom arms and outriggers were opened. Each structural component has been visually inspected, checking general appearance, distortion, cracks, pin retainers, hydraulic pipes, hoses and connection, pins and bushings clearance.

Concrete boom pump's specifications:

| | |
|------------------------------|-------------------|
| Boom/ pump manufacturer: | Flowcrete / Jacon |
| Boom and pump size: | 27/25/4/100 |
| Boom model: | FC748H |
| Boom pump serial number: | 0804404 |
| Year of pump manufacture: | 2004 |
| Max hydraulic pressure | 150 bar |
| Max concrete pressure | 30 bar |
| Operating Hours | 00571 hr |
| Truck Mitsubishi FM600, 2004 | XO 17CE |

The concrete boom pump has received a periodic inspection in accordance with the criteria in AS 2550.15:2019, Clause 6.4.

Details of the periodic inspection are enclosed.

Next inspection is recommended after 250 boom operating hours or before 01st May 2024.

01st May 2023

Inspected by:

Michael Podinic, BScME, MIEAust) *

PERIODIC INSPECTION REPORT - Summary

| Pump details | | |
|---|--|-----------------------------------|
| Manufacturer / Model Jacon | Serial number: 0804404 | Year of pump manufacture: 2004 |
| Max hydraulic system pressure: 150 bar | Max concrete delivery pressure: Rod side 30 bar N | |

| Boom details | | |
|---|---|--|
| Flowcrete 27/25/4/100 | Boom serial number: 0804404 | Year of boom manufacture 2004 |
| Type of boom Truck-mounted, four boom arms | Max vertical reach 25 m (from the centre of the slew ring) | Max rated working pressure of the pipe 85 bar (for 4.2mm thickness) |
| Max pipe diameter 100 mm (5") | Max pipe wall thickness 4.2 mm | Max hydraulic pressure 230 bar |
| Max drop hose diameter 100 mm (5") | Max drop hose length 4m | Operating boom hours Total 00571 |

| Carrier information (Truck) | | |
|--|--------------------------|-----------------------|
| Carrier manufacturer / model Mitsubishi FM600 | VIN JLFFM65FHOKK00095 | Rego plate XO 17CE |

01st May 2023

No. of defects and safe to use **None**
 Stop operation until defects are addressed **No**
 Reinspection required **No**

Inspected:
 Michael Podinic
 m. 0413 424 819.
milop@tpg.com.au



PERIODIC INSPECTION REPORT – Details

| Owner/Controller details | |
|---|-------------------------------|
| Owner/Controller of the concrete equipment: | STG Pumps Pty Ltd |
| Location of inspection (street address): | Riverside Rd, Chipping Norton |
| Names of people involved in inspection: | Mark |

Fault code

| | | | | | | | |
|----|---------------|----|------------------------|----|---------------|----|------------------------|
| 00 | No objections | 08 | Corrosion | 16 | Porous | 24 | Deformation |
| 01 | Cracks | 09 | Damaged paint | 17 | Burnt out | 25 | Bearing clearance |
| 02 | Broken | 10 | Worn through | 18 | Loose | 26 | Lubrication |
| 03 | Leaking | 11 | Scored | 19 | Jammed | 27 | Legibility |
| 04 | No function | 12 | Bent | 20 | Judders | 28 | Parts missing |
| 05 | Short life | 13 | Noise | 21 | Soiled | 29 | Hydraulic |
| 06 | Wear | 14 | Vibration | 22 | Loose contact | 30 | Electrical |
| 07 | Chips | 15 | Others | 23 | Temperature | 31 | Re-inspection required |
| A1 | Not available | A2 | Inadequate information | | | | |

| Item | Description | Fault code | Method of inspection | Acceptance criterion | Observation | Status | Photo (Y/N) Remarks |
|------------|-------------------------------|------------|----------------------|-----------------------------------|--------------|--------|---------------------|
| 100 | Machine documents | | | | | | |
| | Instruction handbook | | Visual | Exist | | | N |
| | Spare-parts list | | Visual | Exist | | | N |
| 200 | Support structure | | | | | | |
| | Frame attachment | | Visual | No faults | No objection | Ok | N |
| 300 | Front outriggers R + L | | | | | | |
| | Outriggers | | Visual | No crack, no corrosion distortion | No objection | Ok | N |
| | Extension box 1 | | Visual | No crack, no corrosion | No objection | Ok | N |
| | Outrigger safeguard | | Visual | No faults | No objection | Ok | N |
| | Outrigger lock | | Visual | locking device | Not designed | | N |
| | Outrigger cylinder attachment | | Visual | No faults | No Objection | Ok | N |
| | Outrigger cylinder | | Visual | No faults | No objection | Ok | N |
| | Pivot cylinder | | Visual | No faults | No objection | Ok | N |
| | Extension hydraulics | | Visual | No leak | No objection | Ok | N |
| | Remark | | | | | | |
| 400 | Rear outriggers R+L | | | | | | |
| | Transport lock | | Visual | Locking device | Not designed | Ok | N |
| | Outriggers | | Visual | No faults | No objection | Ok | N |
| | Pivot cylinder | | Visual | No faults | No objection | Ok | N |
| | Pivot pin | | Visual | No crack, no corrosion | Check it | | Y |
| | Extension hydraulics | | Visual | No faults | No objection | ok | N |

Disclaimer: This inspection is only a visual inspection and does not mean that the machine could not have other hidden defects.

| | | | | | | | |
|---------|--|--|----------------------------|--------------------------------|--|----|---|
| | Pressure setting | | Visual | Factory setting | No Objection | Ok | N |
| Remarks | | | | | | | |
| 500 | Concrete-placing boom pedestal (common) | | | | | | |
| | Concrete-placing boom pedestal attachment | | Visual | No faults | No objection | Ok | N |
| | Superstructure frame | | Visual | No faults | No objection | Ok | N |
| | Chassis frame | | Visual | No faults | No objection | Ok | N |
| | Concrete-placing boom support structure | | Visual | No faults | No objection | Ok | N |
| | Transport locks and seats | | Visual | No faults | No objection | Ok | N |
| | Hydraulic line | | Visual | No faults | No objection | Ok | N |
| 600 | Slewing head with a ball pivot connection | | | | | | |
| | Slewing head | | Visual | No faults | Slewing head | Ok | N |
| | Ball-mounted slewing ring | | Visual, measuring | Max play between rings 1.5 mm | Play 1.2mm | Ok | N |
| | Ball-mounted slewing ring attachment | | Visual and hammer knocking | All bolts tightened | Ball-mounted slewing ring | Ok | N |
| | Drive pinion | | Visual | No faults | Drive pinion | Ok | N |
| | Slewing drive attachment | | Visual | No faults | Slewing drive attachment. No excessive playing | Ok | N |
| | Slewing limitation | | Visual | Slewing is limited by switches | Slewing limitation | Ok | N |
| | Slewing drive (gearing clearance) | | Visual and measuring | 1.5 mm | Slewing drive 0.5mm(backlash) | Ok | N |
| | Slewing drive | | Visual | No faults | Slewing drive | Ok | N |
| | Brake function | | Visual | No faults | Brake function | Ok | N |
| | Speed | | Measuring | 1 rev/ 2.5 min | Speed | Ok | N |
| | Pressure setting | | Visual | Factory Setting | Pressure setting | Ok | N |
| | Hydraulic lines | | Visual | No faults | Hydraulic lines | Ok | N |
| Remarks | | | | | | | |
| | Concrete-placing boom | | | | | | |
| 810 | Arm 1 | | Visual | No faults | No objection | Ok | N |
| | Guide and rest of arm | | Visual | No faults | No objection | Ok | N |
| | Delivery-line support | | Visual | No faults | No objection | Ok | N |
| 820 | Arm 2 | | Visual | No faults | No objection | Ok | N |
| | Guide and rest of arm | | Visual | No faults | No objection | Ok | N |
| | Delivery-line support | | Visual | No faults | No objection | Ok | N |
| 830 | Arm 3 | | Visual | No faults | No objection | Ok | N |
| | Guide and rest of arm | | Visual | No faults | No objection | Ok | N |
| | Delivery-line support | | Visual | No faults | No objection | Ok | N |
| 840 | Arm 4 | | Visual | No faults | Fix crack | | Y |
| | Guide and rest of arm | | Visual | No faults | No objection | Ok | N |
| | Delivery-line support | | Visual | No faults | No objection | Ok | N |
| Remarks | | | | | | | |
| 900 | Joint 'A'—Arm 1 - Turret | | | | | | |

| | | | | | | | |
|-------------|---|--|--------|--|---------------------------|----|---|
| | Joint Pin/Bushes/Linkage | | Visual | No cracks, no corrosion, wear <0.8 mm | No objection wear 0.65 mm | Ok | N |
| | Cylinder 1- Turret – Arm1 | | Visual | No faults | No objection | | N |
| | Pressure setting | | | Factory setting | | | |
| | Hydraulic lines | | Visual | No faults | No objection | Ok | N |
| | Safety valves: piston/rod side | | Visual | No faults | No objection | Ok | N |
| | Remark | | | | | | |
| 1000 | Joint ‘B’—Arm 1–2 | | | | | | |
| | Joint Pin/Bushes/Linkage | | Visual | Cracks, wear <0.8mm | No cracks, wear 0.60 | Ok | N |
| | Cylinder B | | Visual | No faults | No objection | Ok | N |
| | Speed | | Visual | Depend on engine revs | Variable | Ok | N |
| | Pressure setting | | | Factory setting | | | |
| | Hydraulic lines | | Visual | No faults | No objection | Ok | N |
| | Safety valves: piston/rod side | | Visual | No faults | No objection | Ok | N |
| | Remarks: | | | | | | |
| 1100 | Joint ‘C’—Arm 2 - 3 | | | | | | |
| | Forcing lever | | Visual | No faults | No objection | Ok | N |
| | Pressure rod | | Visual | No faults | No objection | Ok | N |
| | Joint Pin/Bushes/Linkage | | Visual | Wear <0.7mm | Linkage pin wear 0.60mm | | Y |
| | Cylinder C | | Visual | No faults | No objection | Ok | N |
| | Speed | | Visual | Depend on engine revs | Variable | Ok | N |
| | Pressure setting | | | Factory setting | | | |
| | Hydraulic lines | | Visual | No faults | No objection | Ok | N |
| | Safety valves: piston/rod side | | Visual | No faults | No objection | Ok | N |
| 1200 | Joint ‘D’—Arm 3 - 4 | | | | | | |
| | Forcing lever | | Visual | No faults | No objection | Ok | N |
| | Pressure rod | | Visual | No faults | No objection | Ok | N |
| | Joint Pin/Bushes/Linkage | | Visual | Cracks, wear <0.60mm | No cracks, wear 0.50mm | | N |
| | Cylinder D | | Visual | No leak, no cracks | No objection | Ok | N |
| | Speed | | Visual | Depend on engine revs | Variable | Ok | N |
| | Pressure setting | | | Factory setting | | | N |
| | Hydraulic lines | | Visual | No leak, no damage | No objection | Ok | N |
| | Safety valves: piston/rod side | | Visual | No faults | No objection | Ok | N |
| | Remarks | | | | | | |
| 1400 | Concrete-delivery line | | | | | | |
| | Fitted delivery line: DN 100 mm | | Visual | Max concrete pressure 85bar | No faults | Ok | N |
| | End hose DN and length | | Visual | 4” (100mm) , length 4 m | No faults | Ok | N |
| | Remaining line wall thickness adequate | | Visual | Min thickness 2 mm | No objection | OK | N |
| | Alignment of delivery line and pivot points | | Visual | need to be aligned to pivot pins | No Objection | Ok | N |
| | Coupling safety pins | | Visual | installed | All installed | Ok | N |
| | End hose safety sling/chain | | Visual | Chain or sling tightened to end hose and reducer | All installed | OK | N |
| | End hose connector | | Visual | Safely attached to end reducer | Safe attached | OK | N |

| Remarks | | | | | | |
|-------------|---|--|---------------|--|--------------|------|
| 1500 | Hydraulics, control and hydraulic valves | | | | | |
| | Pressure relief valves | | Visual | Factory setting | | Ok N |
| | Pressure setting | | Visual | Factory setting | | OK N |
| | Hydraulic lines | | Visual | No faults | No Objection | Ok N |
| | Manual operation (switching function) | | | operation from control valve | No Objection | Ok N |
| | Concrete-placing boom control block | | Visual | All levers returning in a neutral position, no leaks | No objection | OK N |
| | Hydraulic pumps | | Visual | No leaks | No objection | Ok N |
| 1600 | Electrical system | | | | | OK N |
| | Remote control (switching function) | | Visual | to be functional | No objection | Ok N |
| | Emergency-stops function | | Visual, check | Cut off the boom and pump movement | No objection | Ok N |
| | Electrical selector switch for concrete-placing boom function | | Visual, check | Switch functional | In function | OK N |
| | Electrical control switch for concrete-placing boom movement | | Visual | Switch functional | In function | Ok N |
| | Electrical cable harnesses | | Visual | cable to be harnessed | No objection | OK N |
| 1700 | Warning and safety signs | | | | | |
| | Warning signs | | Visual | On place | installed | OK N |
| | Information signs | | Visual | On place | installed | OK N |
| | Operational information signs | | Visual | On place | installed | OK N |
| | Operating instructions signs | | Visual | On place | installed | OK N |
| | Use as crane prohibited signs | | Visual | On place | installed | OK N |
| | High-voltage warning signs | | Visual | On place | installed | OK N |
| 2000 | Machine documents | | | On place | | OK N |
| | Instruction handbook | | Visual | On place | OK | OK N |
| | Spare-parts list | | Visual | On place | | N |
| 2001 | Drive unit | | | | | |
| | Coupling and flange | | Visual | Firm flange connection | No objection | OK N |
| 2200 | Gear unit | | Visual | Hydraulic motor installed | No objection | OK N |
| 2300 | Hydraulic pumps | | Visual | No oil leak, firmly attached | No objection | OK N |
| 2400 | Oil tank | | Visual | No oil leak | No objection | Ok N |
| 2800 | Oil cooler | | Visual | No faults | No objection | OK N |
| Remarks | | | | | | |
| 3100 | Hydraulic motor | | Visual | water pump | No objection | OK N |
| 3200 | Hydraulic line | | Visual | No leak, no damage | No objection | OK N |
| 3400 | Switch cabinet | | Visual | Protected, no oil leak | No objection | OK N |
| 3700 | S-transfer tube | | Visual | shaft lubricated no excessive gap on the wear plate | No objection | OK N |
| 3800 | Concrete hopper | | | | | |
| | Concrete paddles | | Visual | 150mm from the hopper grate | Not designed | N |
| Remarks | | | | | | |
| 4100 | Frame | | Visual | No cracks, corrosion | No objection | OK N |

| | | | | | | | |
|------|--|--|--------|--|------------------------|----|---|
| 4200 | Water tank | | Visual | No leak, firmly attached, structurally safe | No objection | OK | N |
| 4400 | Flushing water pump | | Visual | Firmly attached, no oil or water leaks | No objection | OK | N |
| 4500 | Vibrator | | Visual | attached to the grate | Not installed | | N |
| 4600 | Other protective devices | | | | | | |
| | Steps | | Visual | No faults | No objection | OK | N |
| | Non-slip surface of steps | | Visual | Non-slip surface | | OK | N |
| | Safety rail | | Visual | Safe walking on the deck | No objection | OK | N |
| | Hinged grill-type guard on hopper (incorporates a safety device) | | Visual | safe fixed when is opened | To be fixed | | N |
| | Distance between grill bars | | Visual | Max 50 mm | Visual | OK | N |
| | Distance between grill and crushing point | | Visual | Min 100 mm | Visual | OK | N |
| | Hinged grill-type guard | | Visual | No faults | Visual | OK | N |
| | Concrete paddles stopped on opening of movable grill-type guard | | Visual | Switch off valve installed to stop remixing shaft | Remix not designed | | |
| | Transfer tube stopped on opening of movable grill-type guard | | Visual | Transfer tube stopped on opening of movable grill-type guard | Installed, To be fixed | | N |
| | Safeguard to prevent movable grill-type guard from falling | | Visual | Safeguard to prevent movable grill-type guard from falling | No hopper lid | | |
| | Valve-switching cylinder covered | | Visual | Change over cylinder covered | Incorporated in design | OK | N |
| | All parts with burning/ scalding hazard covered, e.g. exhaust | | Visual | Protection from burning and hot surfaces | No objection | Ok | N |
| 4700 | Electrical equipment | | | | | | |
| | Functioning of control elements | | Visual | Control elements to be functional | All works | Ok | N |
| | Temperature sensor | | Visual | Oil temperature sensor | Installed | Ok | N |

Notes

1. The Rear left-hand side outrigger, pivot pin retainer is damaged, Fig1
2. The linkage between 2nd and 3rd boom arm, worn bushes, if the bushes is replaced then the pin can be saved, Fig 2.
3. The linkage bushes 3rd to 4th boom arm, worn bushes should be replaced, Fig 3.

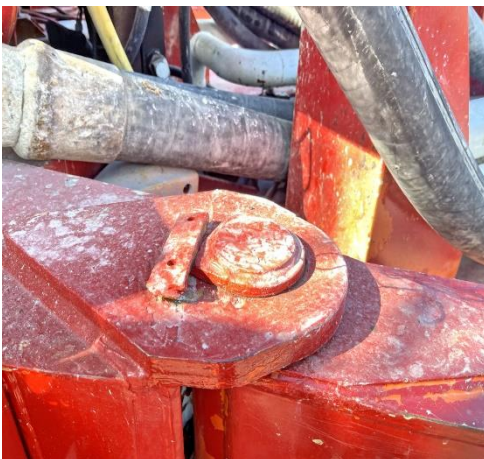


Fig 1. Rear outriggers pivot pin. Pin retainer weld broken



Fig 2. Worn bushes 3rd to 4th boom arm

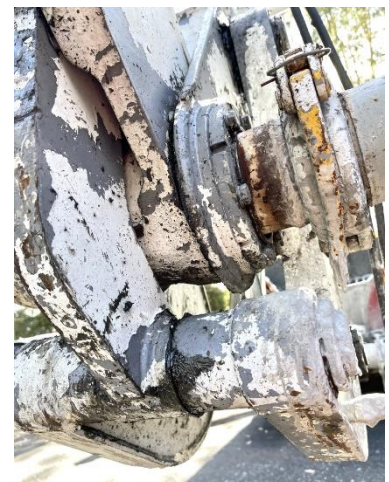


Fig 3. Worn bushes 2nd to 3rd boom arm