



Umbauten, Erneuerungen, Retrofit

Photo report WU_232

Photo report Angola remodeling Mega Bore Oil Field Lathe WU232

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Control exchange Fanuc 18i on Sinumerik 802D sl

A hole in the casing of the Mega Bore CNC machine has caused damage to the water control Fanuc 18i. It was so complicated by the spare parts warranty and the support of the manufacturer's control, that we decided to replace the CNC control incl. All engines with a new CNC control Sinumerik 802 D. We had no spare parts of Fanuc's stock and control, even after the third time in Fanuc repair, still not running. The respective repair costs with screen replacement and CPU did not lead to the goal. The stoppage lasted nearly 3 months. After the conversion decision, the machine was running in 2 weeks. The electric plans everything in Asian writing to the PLC program text. nevertheless it went well thanks to the experience of the many CNC machines that are already in use in Europe.



Figure 1: Here was a lamp. Above, where the screw is, there was a hole through which at leaking roof by a storm, the CNC control Fanuc was 18 i destroyed.

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Figure 2: Due to the climate in Angola see the devices cheaply built like this in 2 years. Good to know from which countries better and from which countries, comes lower quality. WU_232_20



Figure 3: The old panel of Fanuc, which we replaced. WU_232_30



Figure 4: Here is the inside view from the old panel. It is striking that the CNC is connected to a 50-pin cable. We will replace it with a 2-pole Profibus cable. WU_232_40



Figure 5: Prayer, in-training, maintenance man Alberto in the preparation of removal. WU_232_50



Figure 6: Removal of the old Fanuc material and in Africa. WU_232_60



Figure 7: thickness cables are in use here. The thickest is 80 mm / 2. Since Japan, like the US, works with lower voltage, are all cable diameters more than twice as thick as ours. WU_232_70



Figure 8: Removed old Fanuc cable. WU_232_80



Figure 9: Mixed cable networking. It is striking the machine manufacturer has the 0 conductor and the supply with various colors wired for 220 volts. Cables that were too short were extended in the

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electrical cabinet with cables with different colors. Recognized quality assurance for machines to Africa is not very good. WU_232_90



Figure 10: Ausgebautes control material of the Fanuc 18i. WU_232_100



Figure 11: The Z motor. The X motor has a brake. WU_232_110



Figure 12: The Fanuc spindle motor seen in Angola after a short period of use very battered. The climate is very angriffig here it verfrisst almost all products.

WU_232_120



Figure 13: Trained we Maintenance Chief Yoba Casimiro the main motor development. He removed the V-belt from the old Fanuc motor. WU_232_130



Figure 14: The material, which we incorporate axis for the X and Z. WU_232_350



Figure 15: The feed motor was manufactured with an extension and a reduction. WU_232_360



Figure 16: X motor mounting. A very complicated construction, because we have limited space. WU_232_370



Figure 18: This is the brake construction. This was originally in the engine. We now have the same engine on all CNC machines, so we wanted to order any engine brake. WU_232_390



Figure 17: The X motor 1/3 stocky with 3 KW. The old engine had 7 kW and was 1: 1. However, only 10 M Rapid with a 10-er ball screw. WU_232_380



Figure 19: At the Motor Extension, we have made the motor with a rotary flange so that we can rotate the motor in each position. WU_232_400



Figure 20: The new engine is a foot motor. We had to make a stand hole. Because of spare parts we use the same type of engine on all machines. Which is in some over-sized, but there are thus virtually never a machine downtime due to lack of spare parts. WU_232_140



Figure 22: Yoba builds the Sinumerik a 802nd The front plate was made from stainless steel. The thread cutting in stainless steel is more difficult than in normal structural steel. WU_232_160



Figure 21: Panel remodeling in preparation. The old Fanuc was dismantled here and we build here is the new Sinumerik 802 DSL pure. WU_232_150



Figure 23: material requiring the new engine. As we have on all machines the same engines, we need a reduction of 1: make the third WU_232_170



Figure 24: Alberto prepares the installation. WU_232_180



Figure 26: cable 80 mm / 2. Since the machine is operated in the country of origin to 115/220 volts, these thick cables are required. WU_232_200



Figure 25: Machine weight of Mega Bore: over 20 tons. WU_232_190



Figure 27: The security system is improved. No wires without protection. WU_232_210



Figure 28: Front 80 mm / 2; rear 10 mm / 2. Unsafe we close the 10 mm / 2 directly to a backup. WU_232_220



Figure 30: We had to explain to the boys when they do not cover the drilling, there can be a blast on power. Why must everything always be off-covered when drilling. WU_232_240



Figure 29: A large transformer, which reduces the 230/400 volts to 115/220 volts. WU_232_230



Figure 31: Bald is all well built and it has a little reserve place. WU_232_250



Figure 32: The old Fanuc encoder is missing. A new one is installed.
WU_232_260



Figure 34: Carlo prepares the new CNC away from control. You are happy because they know these by heart. WU_232_280



Figure 33: The Fanuc spindle encoder has a lot Pass rust because it was installed without Achsflechterfehler clutch. The shaft and the Pully did not look good. We have installed the encoder with a misalignment compensation. WU_232_270



Figure 35: Significant reduction in cables that hang around there. Sure, only about 30%. WU_232_290



Figure 36: The material was made available in Switzerland and comes to us via DHL. It's still in Dulliken. WU_232_300



38: We will soon make the first test's with external 24V. WU_232_320



Figure 37: A photograph of the tool turret of the machine without the cover. WU_232_310



Figure 39: The X motor with the new brake. The brake was made, so that everything can be used the same feed motors.



Figure 40: The whole engine design 1: 3 stocky. A belt, H300, 70 mm wide, thus certainly not a broken belt occurs.



Figure 41: brake cylinder. The cylinder is used as standard.



Figure 42: Robust, proprietary brake construction. braked with switches and unrestrained. Set so that a pressure below 3 bar is detected.



Figure 43: Little room for the arrangement at the 60 ° slant bed CNC lathe.



Figure 44: New X braking system



Figure 45: New lubrication schedule. The maintenance people in education have had to draw everything. Under grips with 0:06 quantities. Large areas with file units of 0:16 and the ball screws with the double amount of 0.32



Figure 47: New Dossier unit for controlled lubrication. The CNC lathe Mega Bore simply pumped oil, without volume control. The X axis got too much oil, the Z axis far too little. That is why now spindle already again broken the second Kugelroll-. It sounds like a tractor transmission.



Figure 46: Lubrication remodeling. The ball screw gets a double amount of oil.



Figure 48: lubricating material which is grown.



Figure 49: Additional lubrication points for the Z-axis. Normal makes a good mechanical engineers in short-stroke machines more lubrication points in the traverse axis. Mega Bore made only in the Z axis. Now, if ever thread is cut with a moving stroke of less than 200 mm, the long slide with only a lubrication point is lubricated insufficient. We now made three lubrication points per guideway. would be ideal for the long slide 5 lubrication points. But then we would have to dismantle the slide.



Figure 51: The more oil came, the more abrasion of the sliding coating came out because it ran dry a long time.



Figure 50: The machine has a faulty lubrication. Only when oil came, the brown sliding coating abrasion appeared.



Figure 52:



Figure 53:



Figure 55: Carlo (left) and Alberto (right) prepare the lubrication.



54: And then Carlo Aurujo the CNC is turned on, let PLC program in and completed the commissioning. We all have 110-volt cable from the panel and only 24 volts DC. This has the advantage that the personal injury, as well as lightening strikes, the damage is reduced. On all previous machines no controls are more failed due to severe weather influences. No heat problems.
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End: Photo report remodeling CNC Fanuc on Sinumerik



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