



Photo report Function sequence description_DM3S_mit_HLV_r1

Stand 20092018 hpw_iw_an

CNC-controlled skiving and roller burnishing machine WIAP DM3S
for processing
of foundation bolts



Figure 1: First, a federal foundation raw rods will put on the automation, 50 St. weight to 2 tons. For lengths from 1.6 m to 4 meters \varnothing 20 to \varnothing 40 mm.



Figure 2: Just a few \varnothing 40 x 2.8-meter-long rods are ahead in the bunker, the new covenant is \varnothing 40 x 2200 still bound behind.

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Figure 3: The collar is cut and without manual use it distributes itself through a special vibrating technique, with a WIAP for 5 tons workpiece vibrator V05, the distribution is carried out. The vibrator can be continuously adjusted from 0 up to 750 kg Stimulator energy.



Figure 5: The vibrator WIAP V05 ensures that he can from the eccentric level 0 - 100% can be set with 2 6 mm allen keys.



Figure 4: When the collar is cut, will provide one of the M function M89 automatic expiration expansion software that the federal government will smoothly distributed by itself.



Figure 6: Several rubber provide excellent damping, that no vibrations are further provided.

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Figure 7: Thanks to the great thickness of the damping rubber is very good. The upper part vibrates, the lower part remains calm.



Figure 9: The blank holder waits for blanks.



Figure 8: The blank holder ensures that a controlled workpiece forward move is possible. 2 photocells ensure that when workpieces blank press the barrier 5 seconds that the cylinder opens the blank holder. He opens up at one of the following mounted thereon light barrier, the signal is drove through workpiece. Then, this cylinder closes again. It may be that several parts are the same, but that does not bother, because the structure is designed.



Figure 10: The blanks come slowly forward.



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Figure 11:



Figure 12: 2 photocells wait for the workpiece.



Figure 13: The blank holder opens one blank, going to the preliminary position Pos.



Figure 14: When the switch blank report in advance position, rotate the RP claw.



Figure 15: The raw part claw goes to the home position. The raw part is in the running. Recording prysma.

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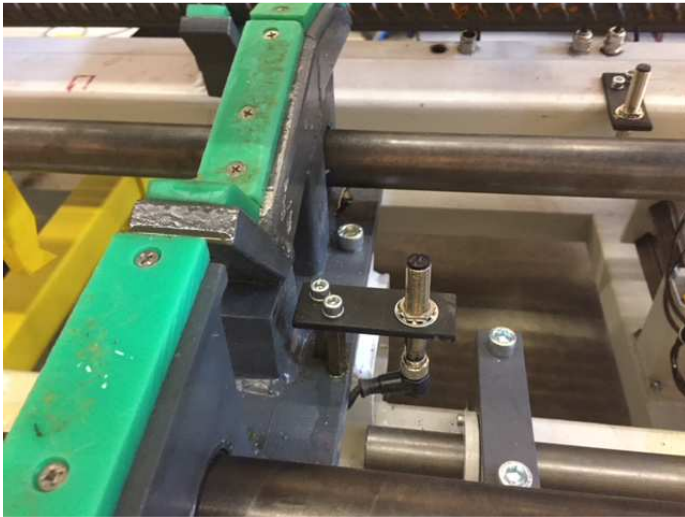


Figure 16: Check the light barrier 1 + 2, if a defect is present.



Figure 18: The workpiece pressing device now moves the workpiece forward.



Figure 17: Checks the second light barrier, if only one photocell is there, the work piece is inclined on the support and handling should stop.



Figure 19: The pressers suppressed to the raw part on the switch.

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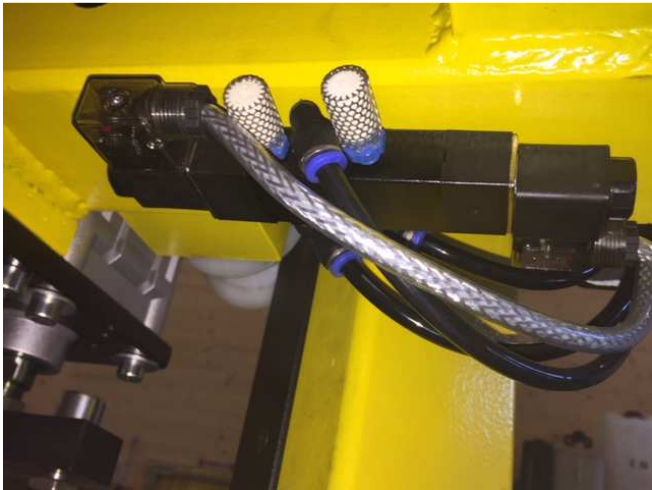


Figure 20: The valve for the movement of the bottom of the HLV. Near the cylinder.

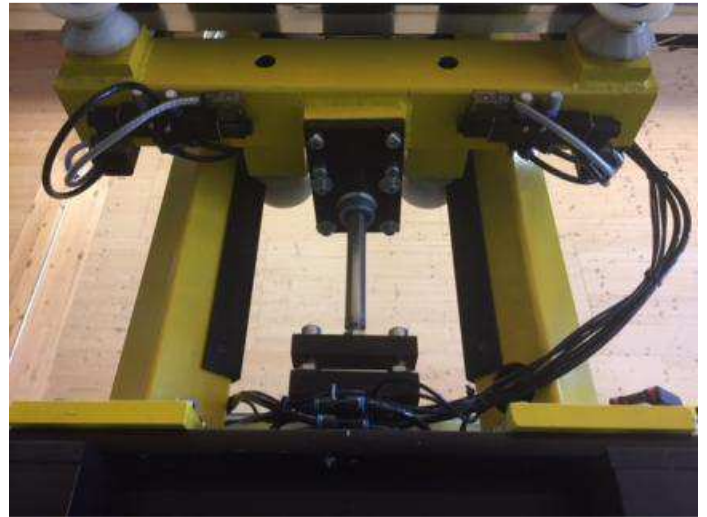


Figure 22: The gripper then lowers 150 mm, close the grippers, which are monitored. If no workpiece would be present and he raises again to 150 mm.



Figure 21: The switch is important for process safety. The raw part can be brought into the lining to 0.1 mm.



Figure 23: 2 check photocells if the grippers are up or down.

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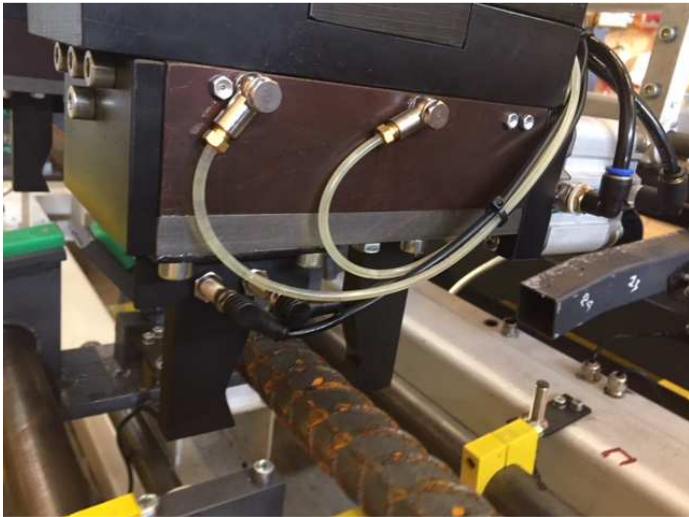


Figure 24: Close the grippers, which are monitored by proximity switch 4, if no workpiece were present and it raises again to 150 mm.



Figure 26: Here, the workpiece is moved into the machine with the HLV loader.

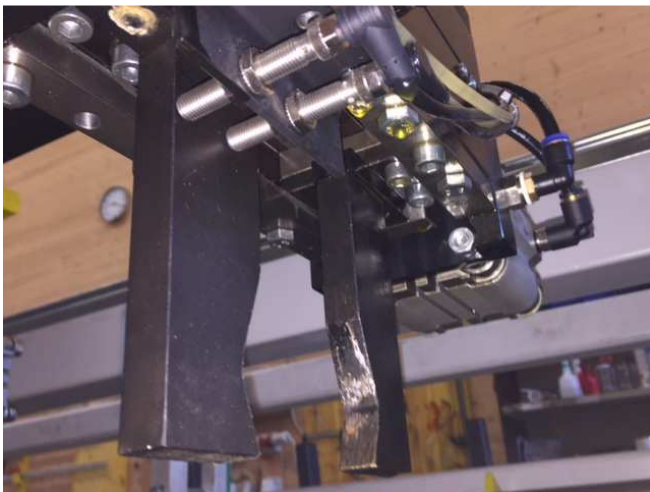


Figure 25: Gripper monitoring. Open is checked. Full interior = No work or to and no switch is ok. Both gripper left and right with the same monitoring.



Figure 27: A chuck in the machine is a geared motor of 180 Nm reach can be closed and opened.

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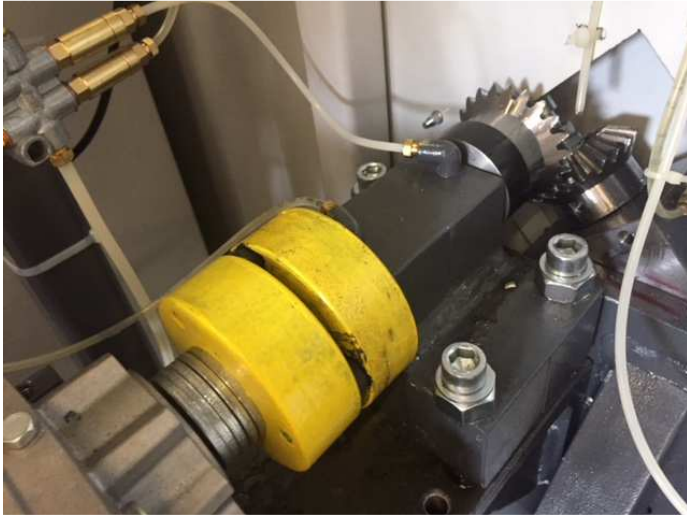


Figure 28: The feed voltage is gear motor with a 180 Nm. All major elements are force-lubricated.



Figure 29: Links of forced opener for the rolling head. Since the position is always the same place, must of not changed for the different workpieces.

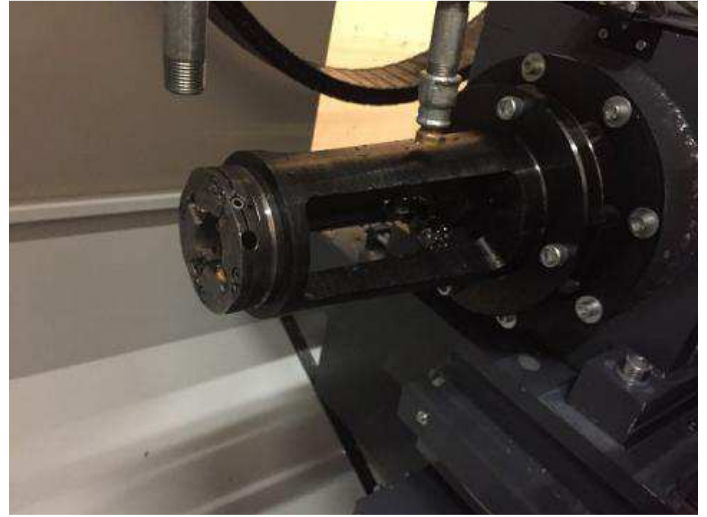


Figure 30: In the machine, the part is tensioned with a feed, then peeled with a 4-blade tool. The tool peels front with 4 plates. Each travels with 0.15 mm feed which gives 0.6 mm per revolution for four plates. Back is still a chamfering tool that does the running for the roles chamfering. He makes a 20 ° bevel. The chamfering must be respectively set manually for different lengths.



Figure 31: The peeling head is cooled with emulsion.

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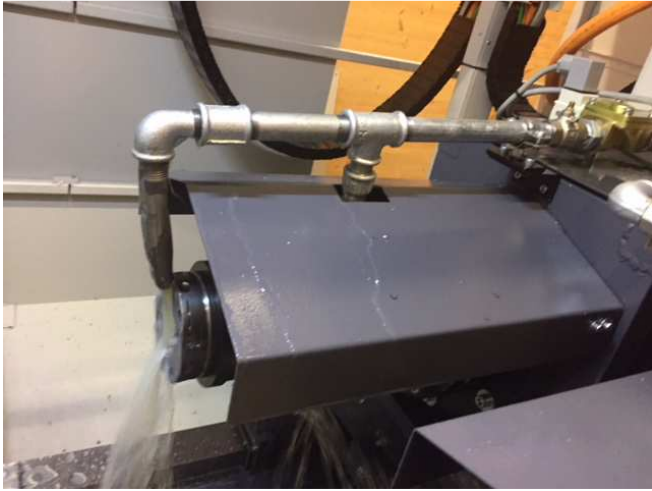


Figure 32: The guard reduces the spraying of emulsion in the engine room.



Figure 33: The amount of water can with the tap be adjusted.



Figure 35: After peeling the finished part looks ready for rolling like this. Diameter minimum with pitch diameter.



Figure 36:



37: 100 rods give about this chip volume.

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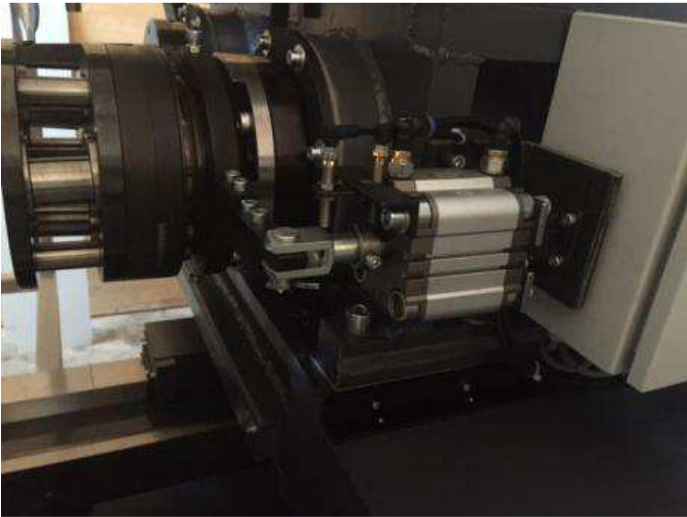


Figure 38: The rolling head which was pressed previously, is now not closed. A cylinder is the impulse and closes the rolling head over an M function.

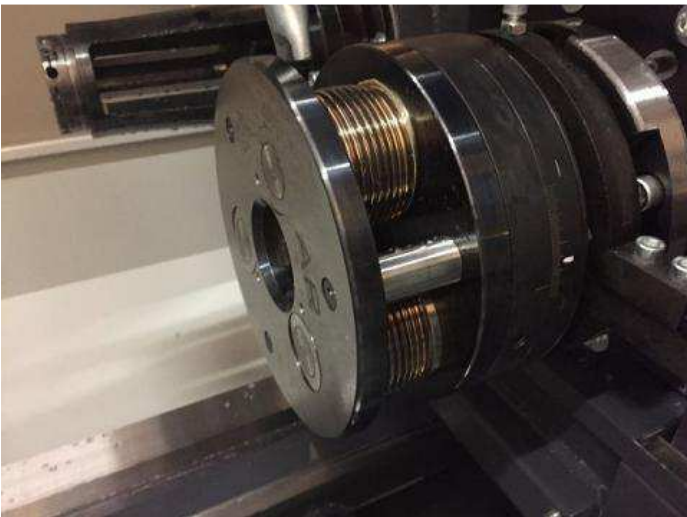


Figure 39: After peeling rolled with the thread rolling head. The rolling head is pressed back in the lining and closed via an M function before the new rolling. Since the workpiece expands in length when rolling, we must have an increased slope of 1% at the thread pitch.



Figure 40: Also, the burnishing head is cooled with emulsion, a M08 M09 off.

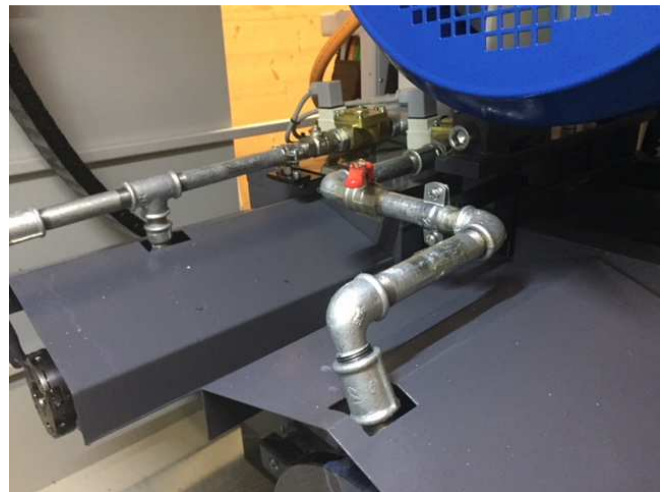
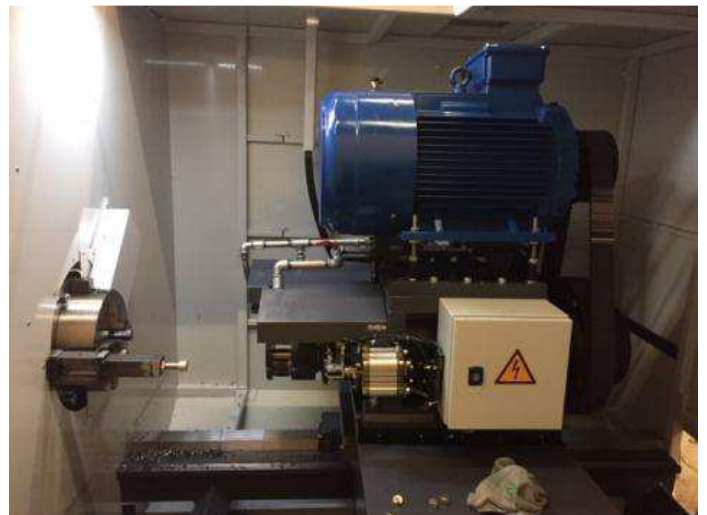


Figure 41: Even the rolling head can be adjusted to the water flow regulator.



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Figure 42: The pressure pin proximate the liner opens the rolling head mechanically, when it has reached the front notching position.



Figure 43: The finished workpiece. Here M36x4 180 mm thread length.



Figure 44: Then, the FW (prefabricated) is passed back out of the machine with the HLV (auxiliary charging device). The loader lowers the part. Part removal station moves to the horizontal position.

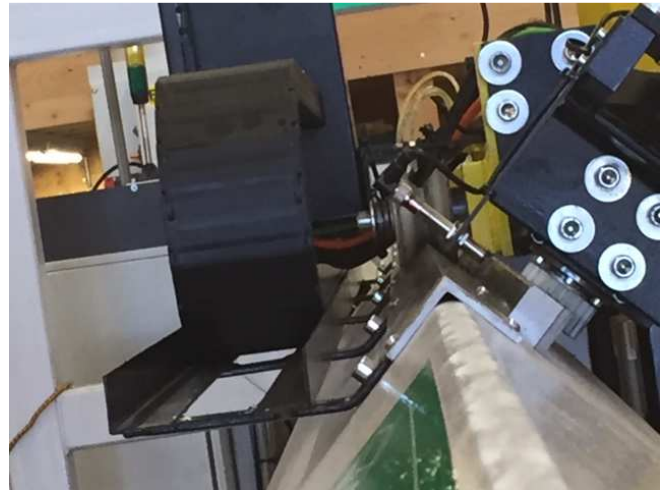


Figure 45: The racks prevents end position monitoring is that when the Y axis motor would be removed once and the machine will lose the position that no unwanted cross the racks is possible.



Figure 46: The finished part has to get to the top shelf.

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Figure 47: The File "avenging" moves up on the CNC program. In the off-time with an M function.



Figure 49: Then, the finished claw rotates the sprocket left under the protective grid, and places the part away on the finished part deposit, which must be available for these tasks above.



Figure 48: The finished part claw lifts upwards that the finished part can be intercepted, ie uncontrolled fall to the finished parts.



Figure 50: The finished part is lifted with the rotary claws.

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Figure 51: The FW keeps behind the stop.



Figure 53: The prefabricated holder lowers slowly, parallel to production time
And down to open the claw that the thread side
from falling later.

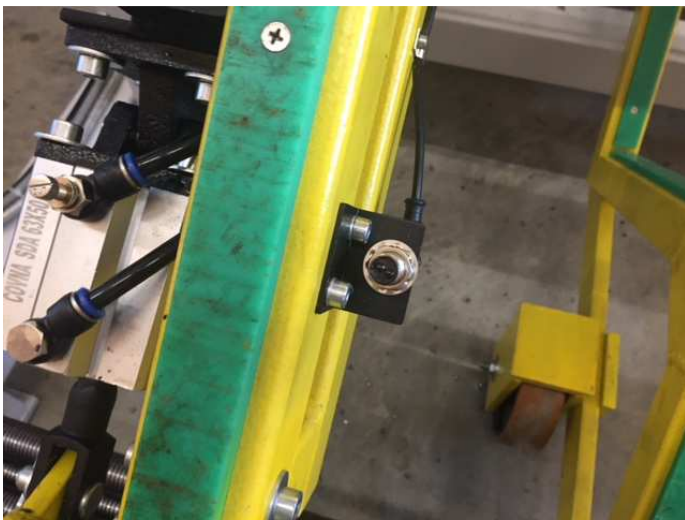


Figure 52: If the FW is on the photocell over, it
can lower only.



Figure 54: The whole collar is carried out without
manual intervention and the prefabricated rear
stored in the FW bunker. Again 50 piece. Then,
the machine goes into the hold.
The finished collar can then be removed with the
forklift or the crane from the FW bunker. Ideally,
the best ever bind right here.

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Figure 55: Finished parts thread length 180 mm M36x4.



Figure 57:

- The whole peeling and rolling plant WIAP DM3S with the latest CNC technology.
- Integrated with tool breakage detection in CNC.
- With vibration function for the blank feeder which automatically regulates the supply, the speed, depending on the weight of the blanks also calculated and it controls itself.
- Lining way and clamping force can be programmed for various. Component sizes lining full tension distance of over 100 mm travel drive without clamping jaw change.



Figure 56: The HLV 40 is called the auxiliary charger 40 for 40 Kg workpiece weights. The maximum length of the parts may be 4010 mm.

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