

~~CONFIDENTIAL - NOV 1978~~

RBH

ASEA MANIPULATOR

11-15-78 - RBH

Our unit is now operational and several programming tests have been run. Measurements were made on the force that the arm exerts in various positions. They were found stronger than the specifications indicated. From parameter data obtained in a visit ~~to~~ to Norton's belt plant, the exerted forces appear quite adequate to polish Receivers.

Sweden has modified their gripper somewhat and has requested that we try it out. It is rather flimsy and the tenon locator is still at an incorrect angle. They claim that this doesn't matter. We should receive both it, and the remaining fittings we need to operate it, shortly.

We are preparing a nest of (7) dial gages to test the systems repeatability on the outside of machined Receivers. ~~Statistical analysis of the results will be compared to Receiver measurements.~~ A statistical analysis of the results will be compared to Receiver measurements. It may be necessary to design a position correction system to realign the gripped Receivers, so that their outside surfaces are at program zero, prior to polishing.

Polishing Jacks have not been ordered. The latest quotes are still being reviewed with the vendors. ~~It may be that only (2) new ones will be necessary. It appears that the (2) fixed location Divine Radius Polishers may be declared surplus. The polishing part of this equipment is quite adequate for some of our needs.~~

~~The experimental area in Bldg 78 is currently scheduled to be available in Dec.~~

Since the manipulator appears stronger than anticipated, another loading test will be tried. Fingers will be fabricated for the standard gripper furnished with the machine. An attempt will be made to pick up centerfire barrel blanks on end, to simulate loading a machine such as the Ajax Upsetter.

CENTERFIRE RIVETLESS EXTRACTORS

11-15-78 - RBH

A complete review of the history of this item was made this month.

Currently we are fabricating at Ilion (10) of each size out of reworked regular blanks. These will incorporate smaller radius detents for snappier action. They will be tested in M/7400 & M/700 actions under extremely adverse conditions - cold, humid & dirty.

Regular in	270	& 30-06
Magnum in	300 Win Mag & 7mm Mag	
Small in	222	& 223

The proposed new regular design incorporates a thicker cross section behind the claw. Since we cannot make this here, we have ordered (1000) to be made on temporary tooling by H. & P. Their final piece price by their process is \$.1295 each for all sizes, which results in the following approximate cost savings, based on the 1979 forecast for all centerfire rifles.

\$ 89,000.	Purchased Part Savings
80,000.	Reduction in Assembly Costs
\$ 169,000.	Total Gross Savings

It is expected that we will phase in the rivetless Extractor into the existing bolt action centerfire rifles in 1980 ~~and~~, but not in the M/742 or 760. It is also expected that it will be incorporated in the M7400 - 7600 introduction.

ILION ENGINEERING - NOV. 1978

RBH

AUTO-DRILL LINE

~~11-15-78~~ RBH

As the initial vendor floor plans proved inadequate, a new layout was prepared at Ilion, using prior detail data, plus a review of the assembly drawings sent in for approval. This layout now incorporates official centerline distances between the various units. The layout was validated by a thorough check of the detail drawings at Albion on Nov. 1st. Some corrections to their drawings were found necessary to conform to the established centerlines, and to properly handle tool changes. They still lack a committed design for the conveying system between the saw and the gantry drill loader. The machine bases are nearly complete and will be laid on the line keel early in December. It is possible that the June scheduled completion will be beaten.

On Nov. 2nd, there was a meeting at Albion with the selected chip system people. The Ilion layout incorporated their equipment plus a Hoffman Vacu-matic rough filter system. A courtsey representative from Hoffman was also present and the entire system reviewed and finalized. A final quote is due shortly. It appears that the installation excavation can be scheduled for April 1979. The chip system vendor will furnish construction drawings.

Two oil/chip separation systems were also visited, with the last one incorporating automatic solids separation just prior to the wringer. This will remove any sawed bar wafers or small tools that inadvertently find their way into the system. Coarse screens under the machines will keep out larger parts such as barrel blanks.

In early Dec. Sandvik will be visited to review their life tests on Ejector drills. They have 600 of our blanks and these will be made into usable 870-12-30 parts. In early tests they ran at 16" per minute penetration rate with this type of tool and this is the basis for potential increased production on this line. The Albion Drills are being constructed to accept either conventional or ejector drill systems.

The saw vendor will also be visited on this trip to review the inclusion of their controls into the overall automation.

M/1100 FORMED EJECTOR

~~11-15-78~~ RBH

Prototype formed Ejectors for 12 Ga. 2-3/4" shells were made up in various positions along the Barrel Extensions. The current location appeared the best in preliminary field testing. Testing of other gages and shell lengths is continuing. A phase in during the last part of 1979 appears realistic. An initial estimate indicates \$ 57,000. per year gross savings.