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HOUSEHOLD APPLIANCES MANUFACTURING COMPANY LTD.

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Our Ref. :

Your Ref. :

Date :

Nov. 3, 1998

**FINAL PROGRESSIVE REPORT
(REVISED)
UNIDO CONTRACT No. 97/076**

PRESENTED BY:

HOUSEHOLD APPLIANCES MANUFACTURING CO.

PREPARED BY: H. JABER

AL

Introduction:

This project will include the redesign of all current wooden and/or resin foaming plugs for all refrigerator models cabinets and doors to be used with ODS -free technology by the use of CFC 11 for the production of refrigerators and freezers at Household Appliances Manufacturing Co. Ltd. (HAMCO), Amman, Jordan . The chosen replacement alternatives are Cyclopentane as foam blowing agent.

The redesign of the existing foaming moulds is directly related to the conversion process and covers activities like design, pattern making, machining, testing, trial production, and adaptation.

HAMCO 's background

Household Appliances Manufacturing Co . Ltd. (HAMCO) is a private company 100% owned by Jordanian citizens. The company started production in 1980. It employs 110 people.

HAMCO 's installed capacity per year is about 30,000 units, of different followings models:

- 1 model no-frost upright display refrigerator (bottle cooler), 260 L.
- 1 model one door refrigerator 160 L.
- 1 model no-frost, two-doors fridge/ freezer, 330 L.
- 1 model two-doors, fridge/ freezer, 320 L.
- 1 model no-frost, upright freezer, 260 L.
- 1 model upright freezer, 260 L.

Scope Of Supply:

The foaming plug have been redesigned to be made from caste aluminum, no. 8 wooden pattern for cabinet plug and no. 1 wooden pattern for the lower half mould for doors and no. 7 wooden pattern for the upper half mould for door have been

made. The relevant aluminum casting have been ordered from a casting company.

Using milling and shaping machines, the cast aluminum parts was machined to the relevant foaming plugs, no. 8 for cabinet plug and no. 1 for the lower half mould for doors and no. 7 parts for the upper half mould for door have been made in panels and extendible form as shown on the attached photos of the same. (photos was sent with the final progressive report on May 26, 1998).

The above plugs and door jigs have been tested, the tests results was successful. All the above mentioned foaming plugs was inspected by Dr. Malayeri during his last visit to Jordan,

After the inspection approval of Dr. A. Malayeri, all the cabinet foaming plugs and the foaming doors moulds was put in the production our relevant refrigerator models.

Conclusion:

No. 8 cabinet foaming plug, No. 7 parts for the upper half of doors foaming moulds and 1 general part for the lower half of foaming mould for doors was made from aluminum was done, tested , approved, and set in production.

Annex:

Photographs of the new foaming plugs have sent to UNIDO on May 26, 1998, other photographs are available with Dr. A, Malayeri.