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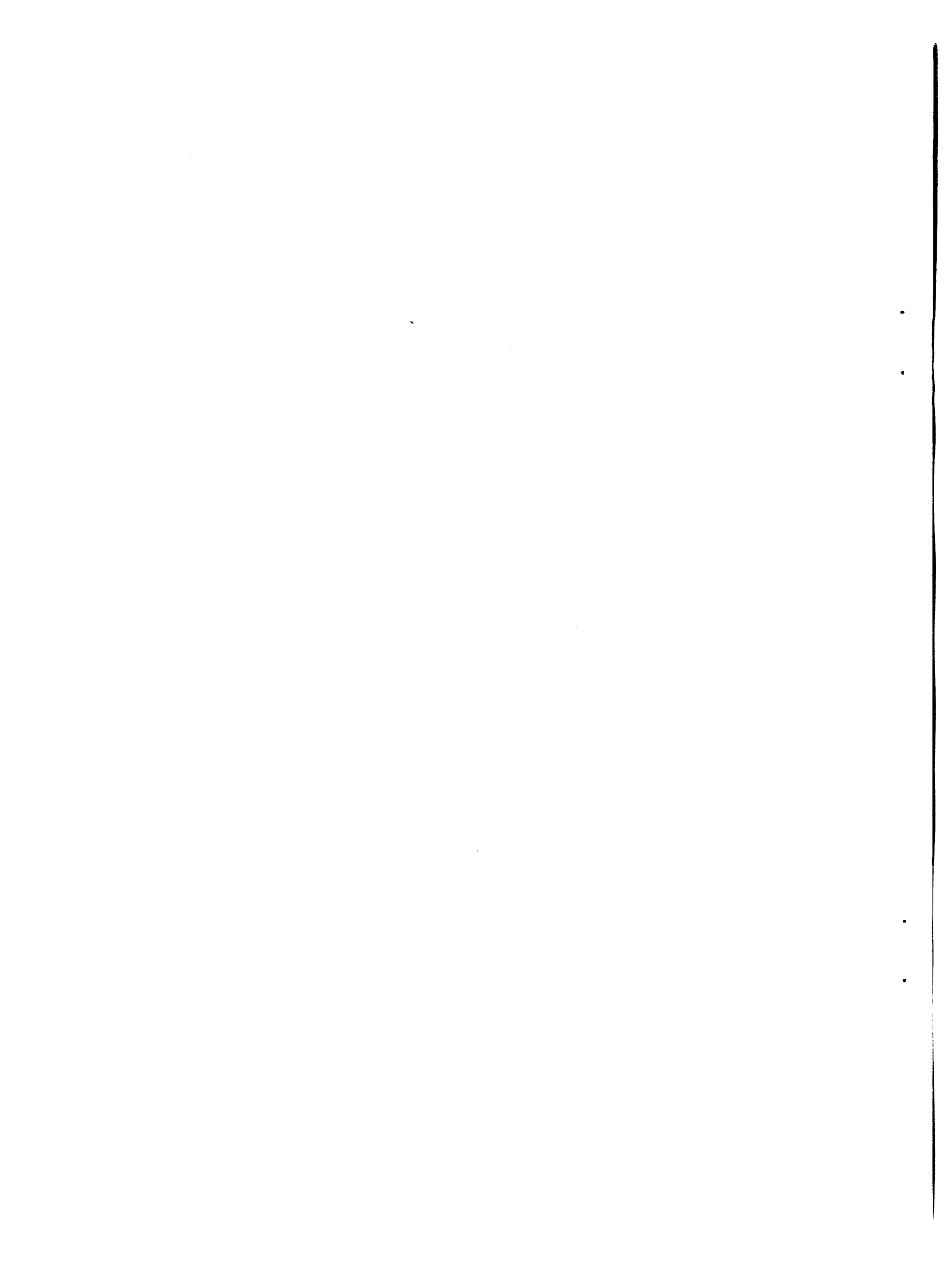
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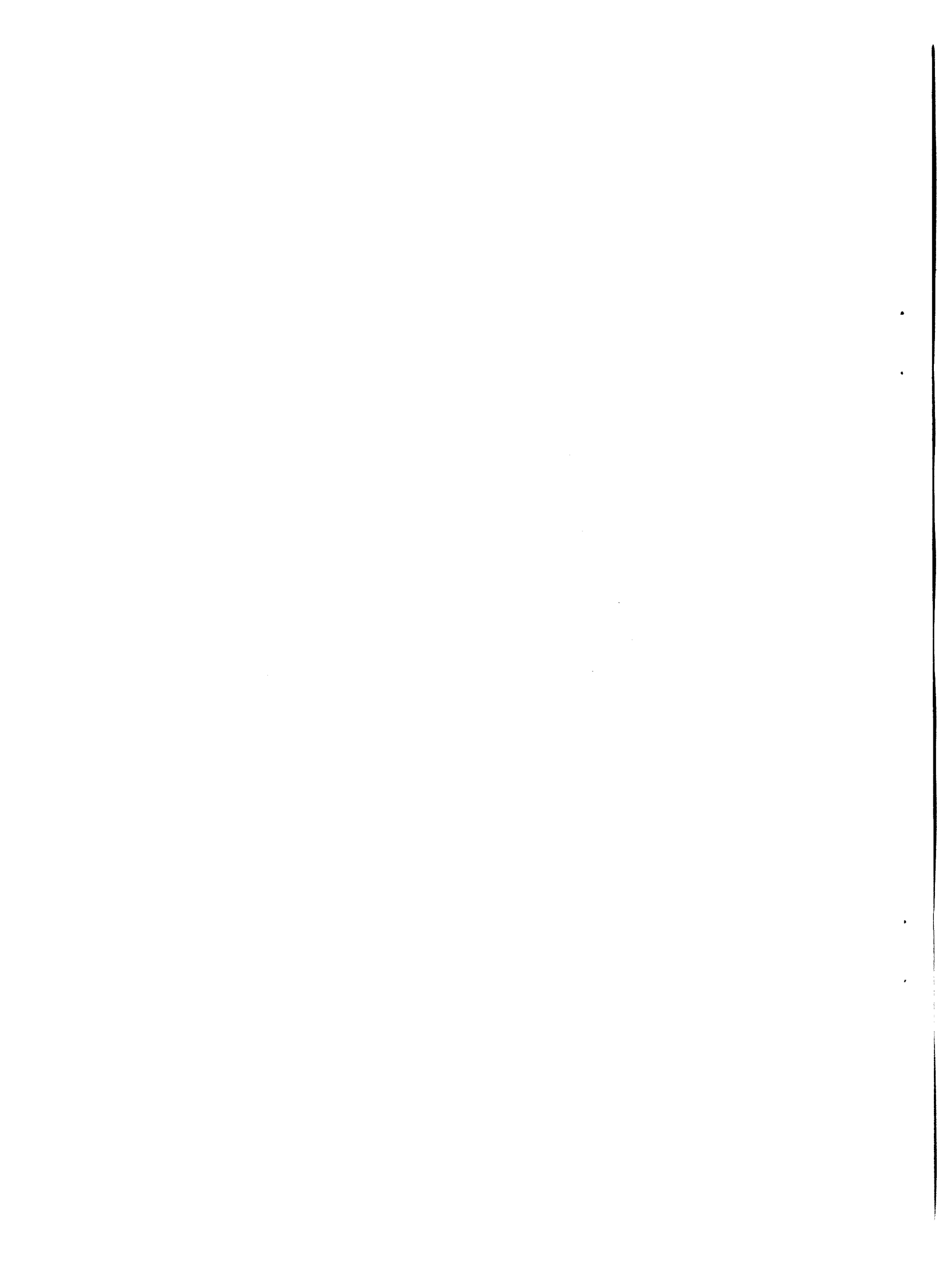
ملاحح اساسية عن  
مشروع تصنيع مساحات زجاج السيارات  
مقدمة الى  
مؤتمر رجال الاعمال والمستثمرين العرب الثالث  
٢٨ - ٣٠ نيسان ١٩٨٦  
الكويت

Project Profiles  
Wiper Motors and Arms  
Presented to  
Third Arab Entrepreneurs Conference  
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K U W A I T



## ملخص مؤشرات المشروع

- اسم المشروع : مشروع تصنيع مساحات الزجاج
- الانتاج : مساحات الزجاج والمحرك
- حجم السوق (منطقة الإسكوا) : ٨٠.٠٠٠ محرك سنة ١٩٩٠ ويزداد الى ١١٠.٠٠٠ محرك في ٢٠٠٠
- الطاقة التصميمية للمشروع : ٥٠.٠٠٠ محرك و ١٥٠.٠٠٠ فرشة
- مساحة الارض المطلوبة : ٣٠٠٠ م٠م
- كلفة المبانى : ٦٤٠.٠٠٠ دولار
- كلفة المعدات : ٣٠.٠٠٠ دولار
- الاستثمارات الثابتة : ١٠٥٠.٠٠٠ دولار
- عدد العمال : ٦٦
- كلفة الانتاج : ١٦٩٠.٠٠٠ دولار
- المبيعات المتوقعة : ٢.٠٠٠ ر ٢.٠٠٠ دولار
- الارباح المتوقعة : ٣١٠.٠٠٠ دولار



## Wiper Motors

### 1. Introduction

A wind screen wiper is a vital component for all fast moving vehicles to give the driver a clear vision during rain or dense fog. The wiper motor assembly consists of the mechanical linkages including the wiper arms with blades and a DC motor. Relatively the replacement demand for wiper motor is rather limited. On the contrary there is significant replacement for the wiper blades.

### 2. Demand

The major demand for wiper motor assembly comes from the manufacturers of equipment for original equipment fitment. Although the replacement demand for wiper motors is limited, as stated earlier, but taking into account the large population of vehicles projected for ESCWA region\* which is shown below:

<u>Class of vehicle</u>	<u>Population</u>	
	<u>1990</u>	<u>2000</u>
Passenger cars	6,000,000	8,000,000
Light commercial vehicles	1,600,000	2,300,000
Heavy commercial vehicles	400,000	500,000
Buses	130,000	186,000
Total	8,130,000	10,986,000

This large population of vehicles is justified to establish a viable capacity plant for wiper motors. Going by rule of thumb, the replacement demand for all categories of vehicles for wiper motor assembly would be approximately 1 per cent. On this basis, the demand for wiper motors for 1990 and 2000 works out as under:

	<u>Demand (No.)</u>	
	<u>1990</u>	<u>2000</u>
Wiper motor	81,000	110,000

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\* ESCWA region incorporates the following member countries: Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, U.A.E., Yemen Arab Republic (YAR), Yemen People's democratic Republic (PDRY) and PLO.

3. Technology and Process of Manufacture:

Manufacture of wiper motors comes under the category of medium technology. The main characteristics of the wiper motor itself should be (a) simplicity in construction, (b) reliability in operation, (c) minimum maintenance, and (d) low battery drainage.

Basically there are two types of wiper motor assemblies, namely, (1) those fitted with eccentrically mounted connecting rod which operates the wiper shaft, (2) those having rack and pinion mounted eccentrically inside the gear box. The manufacturing process relating to the motor is almost similar to the production of any other fractional horse power motor. The wiper arm blades are made from either stainless steel or from carbon steel. In the latter case oxide treatment is given to prevent corrosion and rusting.

4.	<u>Capacity</u>	Wiper Motors	50,000 nos. per year
		Wiper Arms	150,000 nos. per year

5. Project Cost

	\$
Land 3000 sq.m.	60,000
Building 800 sq.m.	640,000
Plant and machinery	300,000
Misc. expenses	70,000
	1,070,000

6. Manpower Requirement: As estimated under:

Designation	Salary/pm \$	No.	Amount/pm \$
Manager	4,000	1	4,000
Engineers	3,000	1	3,000
Foremen, technicians	1,500	10	15,000
Skilled workers	1,000	20	20,000
Unskilled workers	600	30	18,000
Admin.	1,000	5	5,000

Total per year	\$ 0.780
d) <u>Turnover</u>	\$ 2.0 million
e) <u>Inputs</u>	<u>\$ Million</u>
Raw materials and components	0.40
Consumables	0.14
Power 100 KW	0.02
Salaries and wages	.78
Repair and maintenance	0.03
Misc. Manufacturing expenses	0.02
Sales and services	0.02
Interest	0.20
Depreciation	0.08
	<hr/>
Total	1.69
	<hr/>
f) Profit before tax	\$ 0.31 million



