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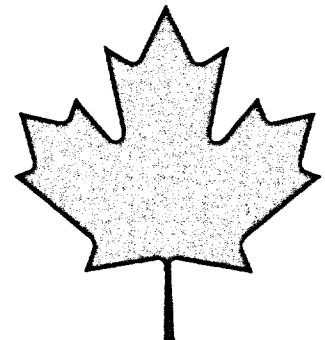
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No. 29

Opportunities for Canadian High Pressure Industrial Washing and Degreasing Equipment in the U.S. Great Lakes Region



OPPORTUNITIES FOR CANADIAN
HIGH PRESSURE INDUSTRIAL
WASHING AND DEGREASING
EQUIPMENT IN THE U.S.
GREAT LAKES REGION

U.S.A. Trade and Investment
Development Division

Department of External Affairs
Government of Canada

October, 1985

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Min. des Affaires extérieures

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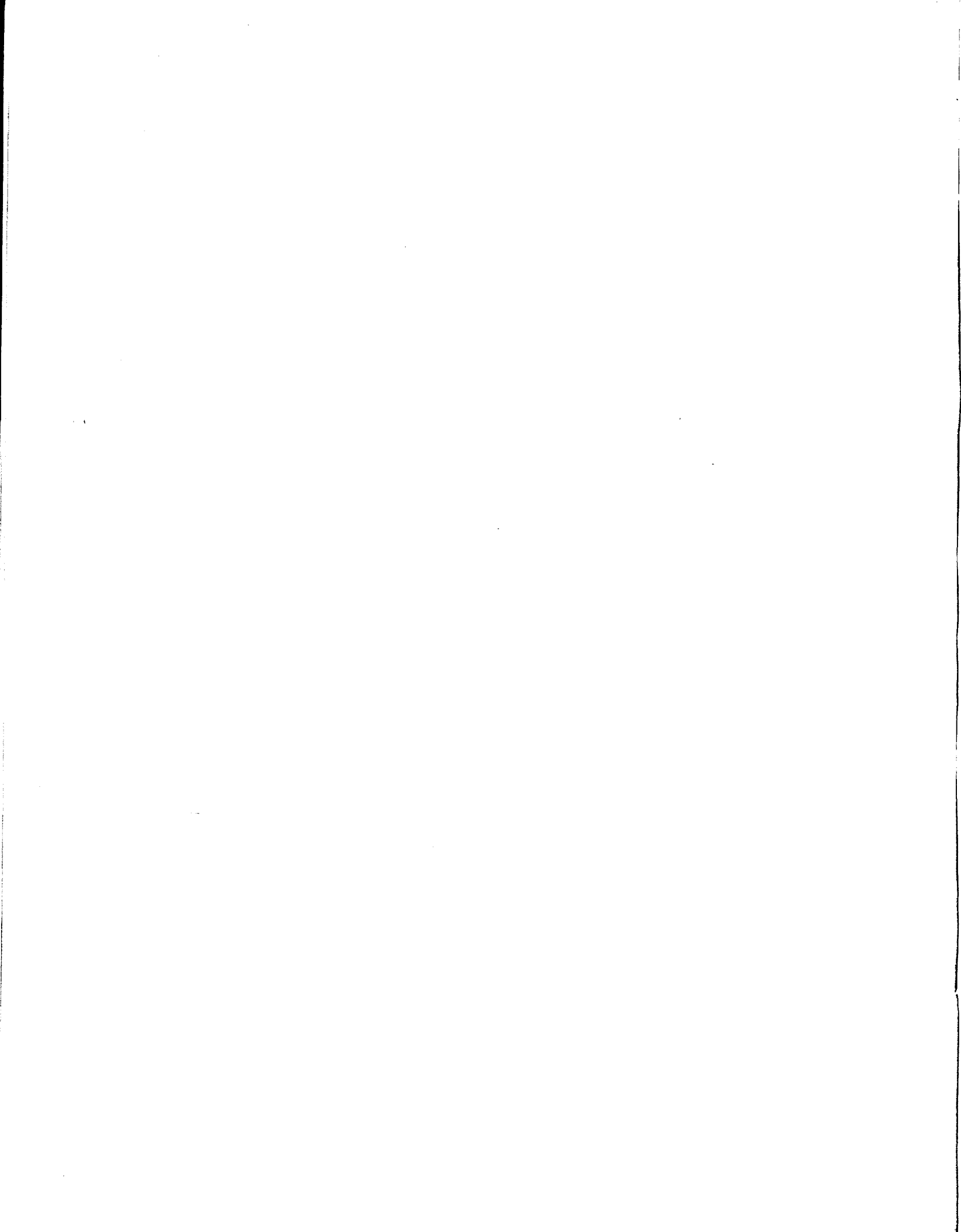
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RÉSUMÉ À L'INTENTION DES CADRES

Le présent sommaire recense les débouchés offerts aux fabricants canadiens de matériel industriel de lavage et de dégraissage à haute pression dans la région américaine des Grands Lacs. L'ouvrage résumé ici a été réalisé par Hayes/Hill Incorporated pour le compte de la Direction de l'expansion du commerce et de l'investissement - États-Unis du ministère des Affaires extérieures du Canada. Ses résultats sont décrits de façon détaillée dans le corps du rapport.

Les produits visés par ce rapport sont regroupés en deux catégories : les laveuses à pression et les nettoyeuses.

- Les produits classés comme laveuses à pression utilisent un jet d'eau à forte pression (plus de 500 livres/pouce carré) pour remplir des fonctions de nettoyage et d'entretien. Ce matériel est portatif ou fixe, et peut être adapté à des utilisations particulières.
- Les produits classés comme nettoyeuses comprennent aussi bien les nettoyeuses simples à cuve d'immersion utilisées pour le nettoyage de pièces individuelles, que les systèmes complexes de nettoyage utilisés pour les grandes opérations de production en série.

Il s'ouvre de nouvelles possibilités aux entreprises canadiennes voulant vendre des produits de ces catégories dans la région américaine des Grands Lacs. Pour le moment, très peu de participants à ce marché -- fabricants, distributeurs ou utilisateurs -- connaissent les capacités des fabricants canadiens de ces produits.

Mais ces mêmes distributeurs et utilisateurs affirment qu'ils seraient très réceptifs aux produits canadiens, s'ils étaient disponibles. Le plus souvent, les participants de l'étude ont l'impression que l'actuel taux de change permettrait aux entreprises canadiennes de vendre des produits de bonne qualité à des prix sensiblement moins élevés que ceux demandés par les producteurs américains.

L'actuel taux de change d'environ 1,36 \$CAN pour un dollar américain contribue à donner aux entreprises canadiennes un avantage concurrentiel sur le plan des prix. Cet avantage n'est que partiellement compensé par des droits de douane allant de 4,0 à 6,7 %, selon la classification du produit.

Les frais de transport et de livraison ne constituent pas un désavantage pour les fabricants canadiens, puisqu'une large part de leurs installations de production sont aussi sinon

plus rapprochées de la région des Grands Lacs que ne le sont la plupart des fournisseurs américains de laveuses à pression et de nettoyeuses.

Les paragraphes qui suivent résument les caractéristiques de la région américaine des Grands Lacs ainsi que les grandes questions propres à chacune des catégories de produits étudiées.

1. Description de la région américaine des Grands Lacs

La région américaine des Grands Lacs est définie comme englobant les États du Michigan, de l'Indiana, de l'Ohio, de New York (ouest, centre et nord) et de la Pennsylvanie (ouest).

La région a les grandes caractéristiques suivantes:

- C'est une région à croissance faible par rapport à l'ensemble des États-Unis, tant sur le plan de la production industrielle que de l'accroissement démographique.
- C'est une région fortement industrialisée et peuplée d'industries qui constituent de bons marchés pour le matériel industriel de lavage et de dégraissage à haute pression.
- C'est une région située à proximité des grands centres industriels canadiens.
- C'est une grande région. Sa population totale représente à peu près une fois et demie celle du Canada.

L'industrie automobile y joue une grande importance. Les quatre grands producteurs nationaux d'automobiles ont leur siège dans la région et y maintiennent plus de 70 usines. Une bonne partie de l'industrie de la région est fortement tributaire de la prospérité de l'industrie automobile.

2. Laveuses à pression

Cette catégorie de produits comprend (1) les laveuses à faible pression (de 500 à 4 000 lb/po²) et (2) les laveuses à forte pression d'utilisation courante ou spécialisée (de 2 000 à 20 000 lb/po²).

a. Laveuses à faible pression

- . Le marché de la région américaine des Grands Lacs représentait de 13 à 18 millions de dollars en 1982, et il connaît une croissance d'environ 10 % par année.
- . Les laveuses à forte pression utilisées dans la région le sont surtout pour l'entretien générale des installations et l'entretien des parcs automobiles.
- . Le marché est peuplé de très nombreux concurrents locaux offrant des produits considérés comme essentiellement similaires.
- . Environ 90 % de tous les produits sont vendus par le biais de distributeurs.
- . Les distributeurs jouent un rôle central dans cette industrie, puisque les démonstrations de produits, le service après vente et la disponibilité des pièces de rechange sont les principaux critères de vente des laveuses à faible pression.
- . Pour un fabricant canadien, l'objectif primordial devrait être d'établir un solide réseau de distributeurs.

b. Laveuses à forte pression (d'utilisation courante ou spécialisée)

- . Le marché des laveuses à forte pression dans cette région représentait approximativement de 9 à 11 millions de dollars en 1982. Pour les prochaines années, on ne s'attend à une croissance que pour les ventes de matériel d'utilisation spécialisée.
- . Les entreprises de nettoyage industriel composent le principal marché dans cette région. Les installations de production d'automobiles et de produits chimiques et les centrales énergétiques représentent également une demande importante.
- . Les marchés des Grands Lacs sont dominés par un grand fabricant -- la National Liquid Blasting Corp. (NLB). La NLB s'est taillé

cette position prédominante par des innovations sur le plan des produits, par un programme de location de matériel à des entreprises de nettoyage à contrat, et par l'implantation de son siège en plein centre de la région.

- . Dans cette région, les laveuses à forte pression sont surtout vendues directement aux utilisateurs, par le biais des vendeurs de l'entreprise ou des représentants du fabricant. Bien qu'il existe certains distributeurs spécialisés dans ce matériel, leur rôle premier est de fournir les pièces de rechange, le service et les programmes de location requis.
- . Le marché du matériel d'utilisation courante est actuellement caractérisé par une faible croissance et par de faibles marges de profit sur les unités et les pièces. On croit généralement qu'il est difficile de soutenir un réseau de distribution dans cet environnement.
- . Pour réussir, les fabricants canadiens devront offrir des produits innovateurs, avoir de solides compétences techniques, avoir un bon service après vente et disposer de capitaux suffisants.

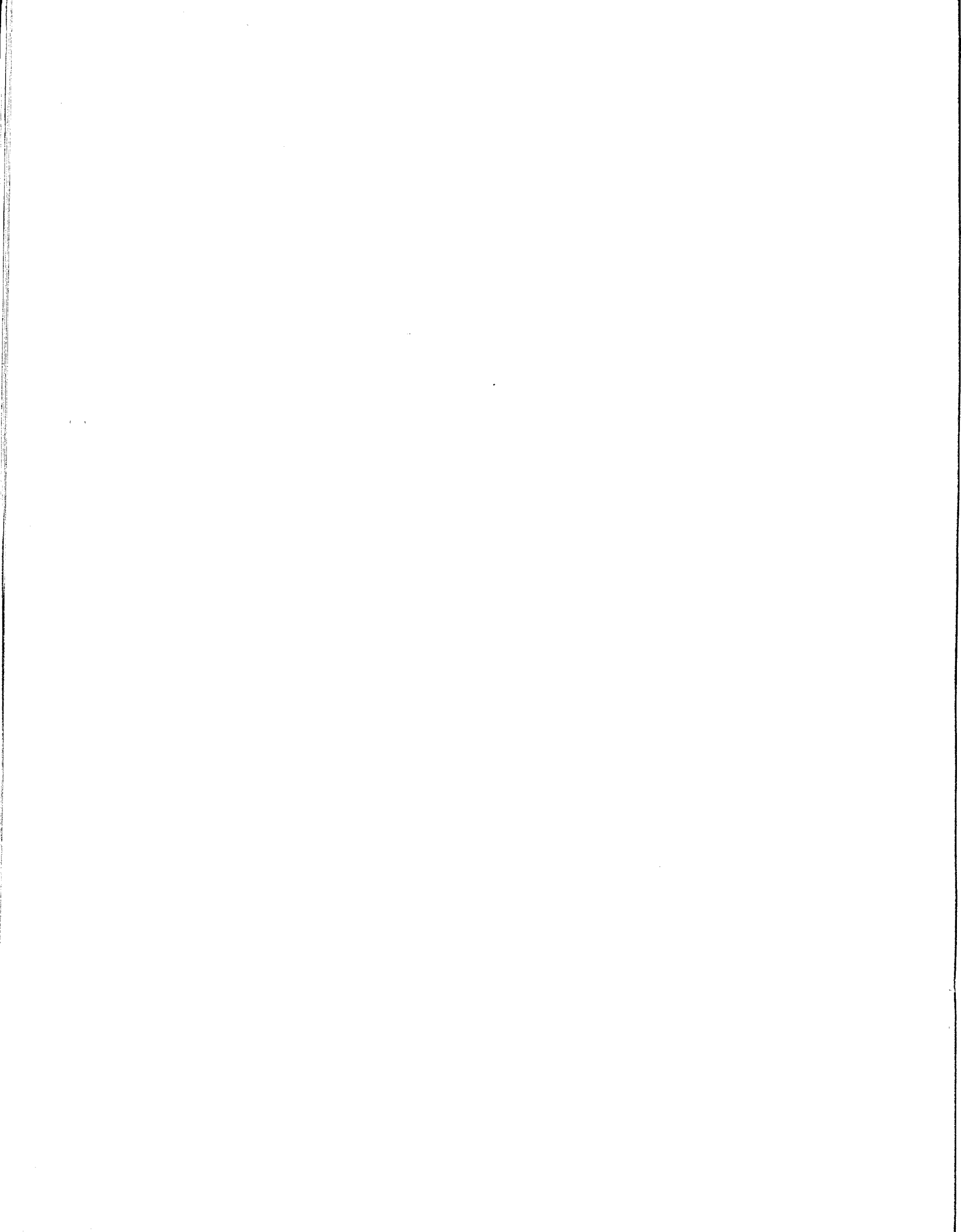
3. Nettoyeuses

Cette catégorie de produits comprend (1) les nettoyeuses de pièces et (2) les dégraisseuses au solvant et les nettoyeuses à l'eau, d'utilisation courante ou spécialisée.

a. Nettoyeuses de pièces

- . Le marché des nettoyeuses de pièces dans la région américaine des Grands Lacs représentait de 2 à 3 millions de dollars en 1982, et une très faible croissance est attendue dans l'avenir prévisible.
- . Les principales industries utilisatrices sont les établissements de service automobile, les entreprises de refabrication et les ateliers d'usinage.

- . Le principal concurrent dans la région -- Safety-Kleen Corp. -- fournit des nettoyeuses de pièces dans le cadre de son programme global de services d'entretien et de recyclage des solvants. Il pourrait y avoir des possibilités de fabriquer des produits pour la Safety-Kleen.
 - . Il existe nombre de débouchés pour la distribution de nettoyeuses de pièces dans la région. La plupart des fabricants vendent en utilisant leurs représentants qui desservent les nombreux membres du réseau d'approvisionnement des installations de production automobile et d'usinage.
- b. Dégraissage au solvant et nettoyeuses à l'eau (d'utilisation courante ou spécialisée)
- . Le marché de la région américaine des Grands Lacs représentait en 1982 de 9 à 14 millions de dollars pour les dégraissage au solvant, et de 35 à 45 millions de dollars pour les nettoyeuses à l'eau. La croissance sur ces marchés dépendra de la croissance industrielle générale dans la région, laquelle a été relativement faible.
 - . Les principales industries utilisatrices de la région sont les fabricants d'automobiles et les fournisseurs de pièces d'automobiles.
 - . Ce matériel est vendu directement aux utilisateurs par les vendeurs de l'entreprise ou les représentants du fabricant. Étant donné la complexité des systèmes auxquels s'applique largement ce type de matériel, il est essentiel de maintenir une interaction étroite entre fabricant et client.
 - . La réputation et l'expérience acquises dans la région des Grands Lacs sont importantes lorsqu'il s'agit d'y vendre. Comme stratégie, il est donc recommandé d'établir une relation avec une entreprise établie fabriquant une gamme de produits similaires, mais non concurrentiels.



EXECUTIVE SUMMARY

This summary is a review of the market opportunities for Canadian manufacturers of high pressure industrial washing and degreasing equipment in the U.S. Great Lakes Region. The work summarized here was performed by Hayes/Hill Incorporated for the U.S. Trade and Investment Development Division of the Department of External Affairs of the Government of Canada. The results are described in full in the main body of the report.

The products included in this report are grouped into two distinct categories — Pressure Washers and Cleaners.

- The products categorized as pressure washers utilize a high pressure (greater than 500 p.s.i.) stream of water to accomplish cleaning and maintenance functions. This equipment is either portable or stationary and can be customized for special applications.
- The products categorized as cleaners include products ranging from simple dip tank parts cleaners used for cleaning individual piece parts to sophisticated cleaning systems used in high volume assembly-line operations.

Many opportunities exist for Canadian companies wishing to sell products in these categories to the U.S. Great Lakes Region. At the present time, very few participants in the market — manufacturers, distributors, or end-users — have any awareness of Canadian manufacturers of these products.

Distributors and end-users also say, however, that they would be very receptive to Canadian products, were they made available. In most cases, this mainly reflects participants' perceptions that the current exchange rate environment would allow Canadian companies to sell quality products at significantly lower prices than are available from U.S. sources.

The current exchange rate of about \$1.36 Canadian to one U.S. dollar does help to give Canadian companies a competitive price advantage. This is only partially offset by customs duties ranging from 4.0 percent to 6.7 percent, depending on product classification.

Transportation and delivery costs do not present a competitive disadvantage for Canadian manufacturers since much of Canadian industry is located as close, if not closer, to the Great Lakes Region than most of the U.S. suppliers of pressure washers and cleaners.

The following paragraphs summarize the characteristics of the U.S. Great Lakes Region and the key issues specific to each of the product areas studied.

1. Description of the U.S. Great Lakes Region

The U.S. Great Lakes Region is defined to include the states of Michigan, Indiana, Ohio, New York (western, central, and upstate) and Pennsylvania (western).

EXECUTIVE SUMMARY . . .

The key characteristics of this region are as follows.

- It is a slow growth region relative to the U.S. as a whole, in both industrial output and population.
- It is heavily industrialized, populated by industries that provide ready markets for high pressure industrial washing and degreasing equipment.
- It is conveniently situated nearby major Canadian industrial centers.
- It is large. Total population in the Great Lakes Region is roughly one and one-half times that of Canada.

The importance of the automobile industry to the region is great. The headquarters of the four major domestic automobile manufacturers, as well as over 70 of their manufacturing plants are located in the region. Much of the industry in the region is heavily dependent upon the health of the automobile industry.

2. Pressure Washers

This category of products is composed of (1) low pressure washers (500 to 4,000 p.s.i.), and (2) standard and custom high pressure washers (2,000 to 20,000 p.s.i.).

a. Low Pressure Washers

- The size of the market in the U.S. Great Lakes Region in 1982 was \$13 to \$18 million, with growth at about 10 percent per year.
- The primary uses of low pressure washers in the region are general plant maintenance and fleet maintenance.
- The market is populated by very many domestic competitors with products that are perceived to be basically similar.
- Roughly 90 percent of all products are sold through distributors.
- Distributors play a central role in this industry since product demonstration, service and replacement parts availability are the primary bases upon which low pressure washers are sold.

EXECUTIVE SUMMARY . . .

- The most important objective for a Canadian manufacturer should be to develop a strong network of distributors.

b. High Pressure Washers (Standard and Custom)

- The size of the market in the U.S. Great Lakes Region for high pressure washers was roughly \$9 to \$11 million in 1982. Growth is expected only in custom equipment in coming years.
- Industrial cleaning contractors make up the primary market in the region. Automotive, chemical and power plants also provide significant demand.
- The Great Lakes' markets are dominated by one manufacturer — National Liquid Blasting Corp. (NLB). NLB has achieved its dominance through product innovations, a leasing program for contract cleaners, and a headquarters location central to the region.
- High pressure washers in the region are sold primarily on a direct basis to end-users, using either company salesmen or manufacturers' representatives. Although some distributors specializing in this equipment exist in the region, their primary role is to provide parts, service and rental programs.
- The existing market for standard equipment is characterized by slow growth and low margins on units and parts. It is generally thought to be difficult to support a distribution network in this environment.
- To be successful, Canadian manufacturers will need to possess innovative products, strong technical ability, timely service support and financial strength.

3. Cleaners

This category of products is composed of (1) parts cleaners and (2) solvent degreasers and aqueous cleaners, both standard and custom.

EXECUTIVE SUMMARY . . .

a. Parts Cleaners

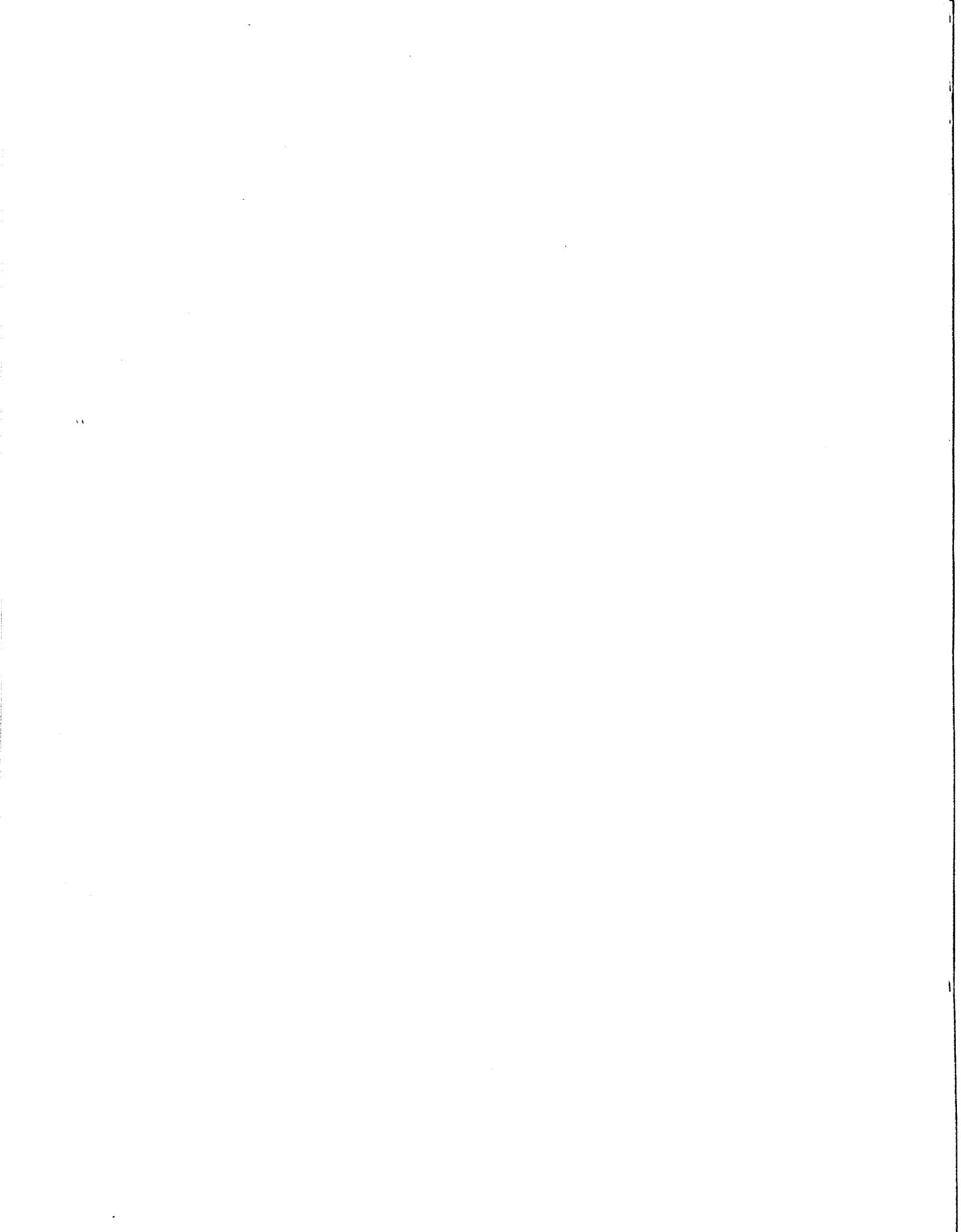
- The size of the market for parts cleaners in the U.S. Great Lakes Region in 1982 was \$2 to \$3 million, with very little growth expected in the foreseeable future.
- Primary user industries include automotive service establishments, remanufacturers and machine shops.
- The largest competitor in the region — Safety-Kleen Corp. — provides parts cleaners as part of an overall solvent recycling and maintenance service program. An opportunity may exist to manufacture products for Safety-Kleen.
- Many opportunities exist for distribution of parts cleaners in the region. Most manufacturers sell using manufacturers' representatives that cater to the many automotive and mill supply distribution channel members.

b. Solvent Degreasers and Aqueous Cleaners (Standard and Custom)

- The size of the market in the U.S. Great Lakes Region in 1982 for solvent degreasers was \$9 to \$14 million, and for aqueous cleaners was \$35 to \$45 million. Growth in these markets is dependent upon overall industrial growth in the region, which has been relatively slow.
- Primary user industries in the region include the automobile manufacturers and suppliers of automobile components.
- This equipment is sold direct to end-users, using either company salesmen or manufacturers' representatives. Because of the sophistication of the systems that much of this equipment is component to, close interaction between manufacturer and customer is essential.
- An established reputation and past experience within the Great Lakes Region is important when selling in the region. A recommended strategy, then, is to develop a relationship with an existing manufacturer of a similar, but non-competing line.

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- C. Pressure Washer Applications in Selected Industries
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I. INTRODUCTION

This report is written for Canadian manufacturers of high pressure industrial washing and degreasing equipment, and for the Canadian government to aid its effort in assisting those manufacturers.

A. Objectives

Hayes/Hill Incorporated has been commissioned by the U.S.A. Trade and Investment Development Division of the Department of External Affairs of the Government of Canada to assess the "Opportunities for Canadian High Pressure Industrial Washing and Degreasing Equipment in the U.S. Great Lakes Region."

1. The purpose of this report is to provide information and guidance to assist Canadian companies in entering the U.S. market and in developing appropriate marketing strategies.
2. Specifically, the objectives of this report include the following.
 - To give an overview of the high pressure industrial washing and degreasing equipment industry in the Great Lakes Region in terms of market supply and demand, industry structure, product and distribution requirements, and the regulatory environment.
 - To determine and evaluate the market potential and opportunities for Canadian manufacturers of high pressure industrial washing and degreasing equipment in the U.S. Great Lakes Region.
 - To outline the means by which Canadian manufacturers can enter specific markets, and the particular requirements that will need to be met.

B. Geographic Boundaries

While many of the results of this study can be generalized to include all of the United States, the focus is on the U.S. Great Lakes Region. This region includes the states of Michigan, Indiana, Ohio, New York (western, central, and upstate) and Pennsylvania (western). Considering its proximity to Canada, this region is thought to provide the best opportunities for initial export efforts.

I. INTRODUCTION . . .

C. Project Scope

This report is primarily qualitative in nature. A certain amount of statistical information has been developed to support the analysis contained in the report, but the concern here is more with the methods of approaching the market, not in detailing its dimensions.¹

The main body of the report is organized into five sections and appendices, each with several sub-parts. The basic structure revolves around the analysis of two distinct industries termed "Pressure Washers" and "Cleaners."

Specifically, the five sections of the report are as follows.

Section I is the Introduction.

Section II, The U.S. Great Lakes Region, provides an overview description of the region of the United States located in proximity to the Great Lakes.

Each state within the region is described in terms of population growth, value of industrial output, and predominant industries.

While there are many differences between the states in the region, these differences do not have a central bearing on the issues discussed in this report. Consequently, this report treats the entire region as one, with special state-specific matters discussed where appropriate.

Section III, Pressure Washers, outlines in detail the key elements of supplying pressure washers to the U.S. Great Lakes Region. The scope of the industry is carefully defined and segmented to make it easier for Canadian manufacturers of specific types of products to identify the issues most relevant to them.

The final part of the section ties together all previous parts and discusses the attractiveness of opportunities in the region.

Section IV, Cleaners, is structured identically to Section III and details key elements of supplying various types of cleaners to the U.S. Great Lakes Region. Again, in this section, a distinction is made between similar, but mostly differing types of cleaners so that each Canadian manufacturer can concentrate on the most appropriate segments.

As with Section III, the final part of this section considers the attractiveness of opportunities for Canadian manufacturers of cleaning equipment.

¹Throughout this report, all dollar values are stated in U.S. dollars.

I. INTRODUCTION . . .

C. Project Scope (Continued)

Section V, entitled Market Penetration, outlines matters that are common to both the pressure washer industry and the cleaner industry.

Matters discussed include the special role of the automobile industry, tariffs and customs, transportation requirements, and the receptivity to Canadian products among existing market participants.

The Appendices contain supporting materials including detailed directories of manufacturers' representatives, distributors and other channel members operating in the Great Lakes Region. Also provided is information on promotional organizations such as trade show organizers, publishers and trade associations.

Also included is a discussion of the methodology used by Hayes/Hill to compile the information included in this report.

D. Glossary of Terms

The following list of terms is provided as an aid to the reader. Further clarification of these terms can be obtained within the context of the report.

Automotive Aftermarket. The market for automobile replacement and repair parts and equipment.

Chlorinated Solvents. Hydrogen, chlorine and carbon-based solvents used for the cleaning of metal in vapor degreasers. The most common chlorinated solvents are trichloroethylene, 1,1,1 - trichloroethane, perchloroethylene and methylene chloride.

Common Carrier. A carrier that is licensed to carry all goods offered to it within the terms of its operating authority for compensation.

Direct Salesman. An employee of a company engaged in selling the products of that company, normally on a base salary plus commission basis.

Fluorinated Solvents. Hydrogen, fluorine and carbon-based solvents used for cleaning metal and plastic parts in vapor degreasers. The most common fluorinated solvents are trichlorotrifluoroethane - TF and trichlorotrifluoroethane - TMC, an azeotrope made up of methylene chloride.

Free on Board (F.O.B.). The point at which responsibility for risk and expense of products loaded aboard a carrier's vehicle passes from seller to buyer.

I. INTRODUCTION . . .

D. Glossary of Terms (Continued)

Industry-Specific Distributor. A company engaged in the purchase and resale of products to a specific industry or type of end-user. Industry-specific distributors may or may not stock equipment but will almost always stock a line of replacement parts. These distributors may carry the products of one or more manufacturers and will take ownership of the goods.

Jobber. A company engaged in purchasing, limited stocking, and resale of goods to the automotive aftermarket. Jobbers purchase from either WDs or manufacturers and sell directly to end-users. Jobbers take ownership of the goods.

Manufacturers' Representative. An independent company or individual engaged in representing the products of one or more manufacturers on a commission basis. Representatives will either carry a broad line of unrelated products for sale to a specific industry or will specialize in a particular type of product for sale to many industries. At no time will a manufacturers' representative take ownership of the goods being sold.

Original Equipment Manufacturer (OEM). A term used in the automobile industry to designate those manufacturers engaged in the manufacture and sale of finished automobiles and trucks.

Warehouse Distributor (WD). A company engaged primarily in the purchase, warehousing and resale of automobile parts and related products in the automotive aftermarket. WDs, carrying the products of many manufacturers, act as regional points of distribution to jobbers and end-users. WDs take ownership of the goods.

II. THE U.S. GREAT LAKES REGION

This section of the report provides an overview description of the region of the United States located in proximity to the Great Lakes, known as the U.S. Great Lakes Region.

A. Geography

The geographic focus of this study is the U.S. Great Lakes Region as defined by the bold line in the map below. The eastern boundary of this region includes the cities of Albany, New York, and Scranton, Pennsylvania.



B. Population and Concentration

The population of the region comprises 16 percent of the total population of the United States. This population is roughly one and one-half times that of Canada. The region experienced a slower population growth than the U.S. overall during the period from 1980 to 1983. This trend is expected to continue at least through 1988, as shown in Exhibit 1.

II. THE U.S. GREAT LAKES REGION . . .

B. Population and Concentration (Continued)

Exhibit 1

Population of the Great Lakes Region

	<u>Population in Millions</u>			<u>Percent Change 1980 - 1988</u>
	<u>1980</u>	<u>1983</u>	<u>Projected 1988¹</u>	
Michigan	9.3	9.1	9.2	-1.1%
Indiana	5.5	5.5	5.6	1.8%
Ohio	10.8	10.8	10.8	N.C.
Northern New York	5.9	6.3	6.4	8.5%
Western Pennsylvania	<u>4.9</u>	<u>4.9</u>	<u>4.9</u>	N.C.
Total Region	<u>36.4</u>	<u>36.6</u>	<u>36.9</u>	1.4%
Total U.S.	226.6	235.5	248.6	9.7%
Total Canada (1981)		24.3		

¹The projected 1988 population is based upon expected trends in births, deaths, out-migration and in-migration.

Source: Sales & Marketing Management

Over the past decade, the United States has experienced a marked shift in population. This shift has been away from the traditional population centers of the Northeast and the upper Midwest, of which the Great Lakes Region is a major part. The beneficiaries of this shift have been the Western and Southern regions of the country, i.e., the area known as the Sunbelt.

There are several possible explanations for this shift in population.

- A decline of the industrial base in the traditional population centers relative to the Sunbelt.
- Increasing mobility of the population resulting in a migration to newer cities and more comfortable climates.
- The increasing size of the retired population resulting in the same migration.

II. THE U.S. GREAT LAKES REGION . . .

B. Population and Concentration (Continued)

In the Great Lakes Region there are 17 city centers, called Metropolitan Statistical Areas (MSAs), with populations in excess of 500,000 people. For comparison purposes, that is roughly the same size as the Ottawa metropolitan area.

By state, these MSAs include the following. A map showing their locations is found on the following page.

Exhibit 2

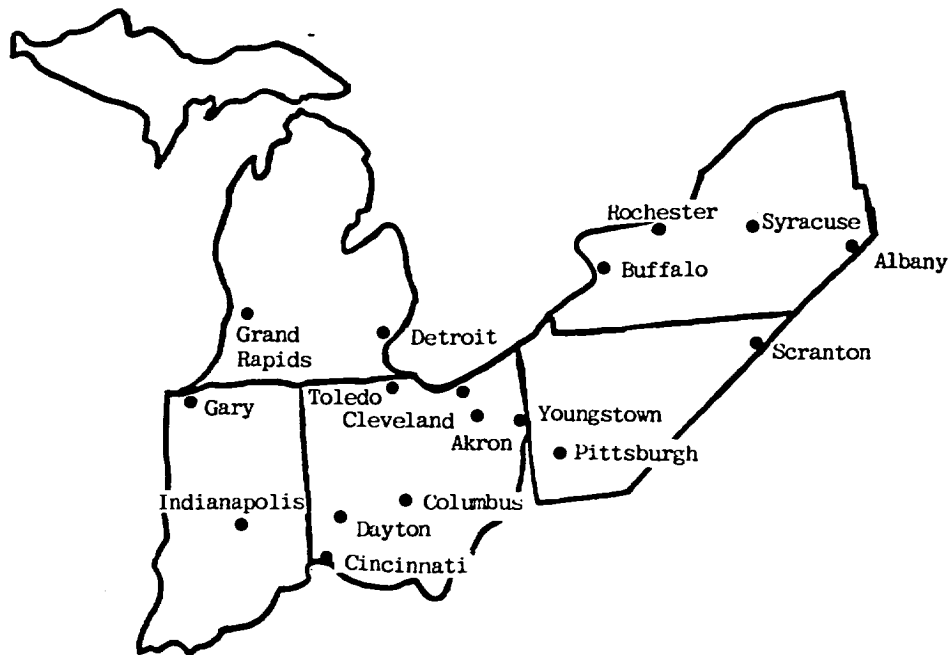
Major MSAs in the Great Lakes Region

<u>MSA</u>	<u>1980 Population (000)</u>
<u>Michigan</u>	
Detroit	4,488
Grand Rapids	602
<u>Indiana</u>	
Indianapolis	1,167
Gary	643
<u>Ohio</u>	
Cleveland	1,899
Cincinnati	1,401
Columbus	1,244
Dayton	942
Akron	660
Toledo	617
Youngstown	531
<u>New York</u>	
Buffalo	1,015
Rochester	971
Albany	836
Syracuse	643
<u>Pennsylvania</u>	
Pittsburgh	2,219
Scranton	729

Source: U.S. Department of Commerce, Bureau of the Census

II. THE U.S. GREAT LAKES REGION . . .

B. Population and Concentration (Continued)



The historical industrial development of this region dictated that centers of commerce be located near the primary mode of transportation of the day — the waterways. As a result, the major population centers are located either along one of the Great Lakes (Detroit, Cleveland, Buffalo), or one of the major river systems (Pittsburgh, Cincinnati). The exception is Indianapolis, which owes its present size to the fact that seven U.S. interstate highways now converge upon its downtown area.

C. Trade

Each of the three sectors of the Great Lakes' economy - manufacturing, agriculture and service - provide potential opportunities for Canadian manufacturers of high pressure industrial washing and degreasing equipment. General information about these sectors is provided on the following pages.

1. Manufacturing Sector

The Great Lakes Region of the United States is highly industrialized. Sixteen percent of the U.S. population in this region produced roughly 22 percent of the total U.S. industrial output in 1983.

II. THE U.S. GREAT LAKES REGION . . .

C. Trade (Continued)

However, the role that this region plays in the U.S. economy can fluctuate from year to year, as shown in Exhibit 3.

Exhibit 3

Value of Shipments in the Great Lakes Region

	Value of Shipments (Billions of Current Dollars)					
	1976	Percent of Total U.S.	1980	Percent of Total U.S.	1983	Percent of Total U.S.
Michigan	80	6.7%	93	5.0%	128	6.6%
Indiana	45	3.8%	63	3.4%	65	3.3%
Ohio	84	7.1%	114	6.2%	120	6.2%
Northern New York	38	3.2%	70	3.8%	72	3.7%
Western Pennsylvania	<u>35</u>	3.0%	<u>44</u>	2.4%	<u>47</u>	2.4%
Total Region	<u>282</u>		<u>384</u>		<u>432</u>	
Total U.S.	1,186		1,853		1,947	
Percent Region of U.S.	23.8%		20.7%		22.2%	

Note: In 1982 the Gross National Product (GNP) of Canada was approximately nine percent of the U.S. GNP.

Source: U.S. Department of Commerce

This fluctuation is caused in large part by the make-up of the industrial base found in the region.

To illustrate this point, consider Exhibit 4 which shows the primary industries in the region, ranked by importance to the economies of the various states.

II. THE U.S. GREAT LAKES REGION . . .

C. Trade (Continued)

Exhibit 4

Primary Industries by State

Percent of State's
Total 1982 Shipments

Michigan	Transportation equipment Machinery, non-electrical Fabricated metals	44% 11% 9%
Indiana	Primary metals Transportation equipment Electrical equipment	19% 13% 7%
Ohio	Transportation equipment Machinery, non-electrical Fabricated metals	16% 11% 11%
Northern New York	Instruments Electrical equipment Machinery, non-electrical	21% 20% 20%
Western Pennsylvania	Primary metals Machinery, non-electrical Fabricated metals	30% 19% 16%

Source: U.S. Department of Commerce

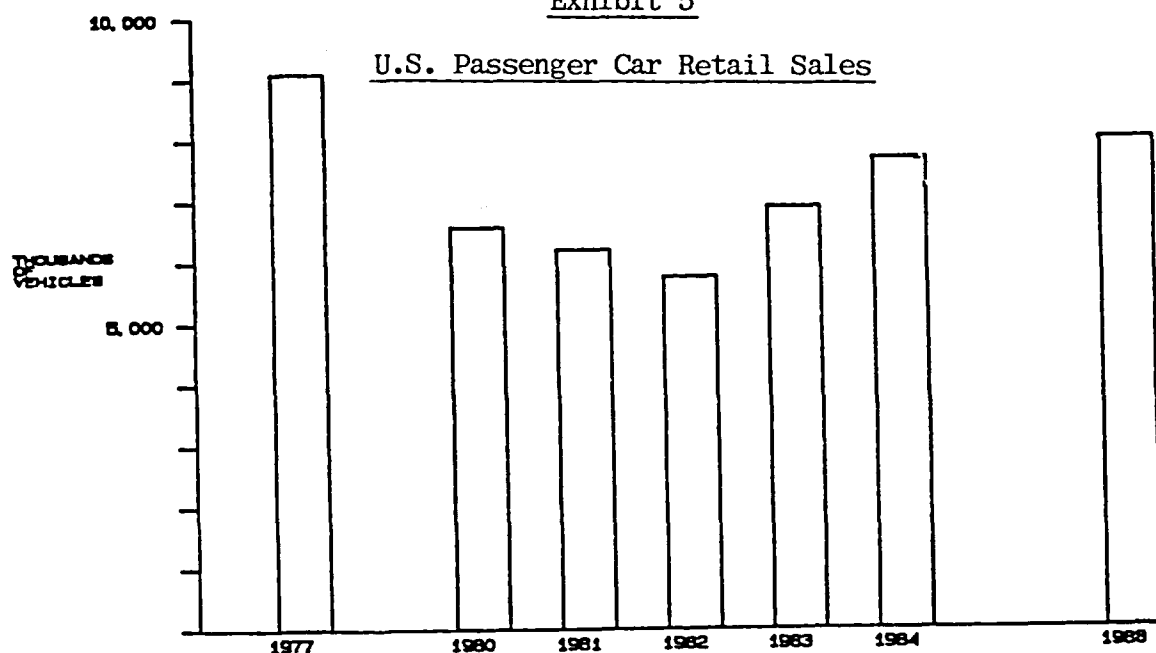
The State of Michigan generated 6.7 percent of total United States output in 1976, and only 5.0 percent in 1980. The reason is that nearly half of Michigan's industrial activity is generated by transportation equipment alone. In 1980, the automobile industry was in the middle of a severe decline.

As seen in Exhibit 5, by 1983 automobile shipments had rebounded. In that year Michigan's overall economic activity rebounded as well, generating 6.6 percent of the nation's output.

II. THE U.S. GREAT LAKES REGION . . .

C. Trade (Continued)

Exhibit 5



SOURCE: MOTOR VEHICLE MANUFACTURER'S ASSOCIATION
ESTIMATES BY BUREAU OF INDUSTRIAL ECONOMICS

As another example, Western Pennsylvania is heavily dependent upon the depressed primary and fabricated metals industries. Pittsburgh, also known as "Steel City" because of its heavy concentration of steel mills and foundries, is in the heart of this region. Youngstown, Ohio, 100 miles to the north, has been the victim since 1977 of three major steel mill closings.

As recently as 1976, the combined output of Western Pennsylvania and Ohio generated 10.1 percent of the total output of the United States. By 1980 it had dropped to a low of 8.6 percent of total output. This represents a 15 percent reduction in industrial activity relative to the rest of the country.

By 1983, that part of the region had not yet recovered. Unlike the automobile industry, the U.S. steel industry has not yet been able to recover from sales lost due to less expensive overseas imports.

Other than the recovery of the automobile industry, the one bright area in the Great Lakes Region in recent years has been northern New York State. In 1976, its industrial output comprised 3.2 percent of the total for the U.S. By 1980, it had risen to 3.8 percent and had nearly maintained that level through 1983.

II. THE GREAT LAKES REGION . . .

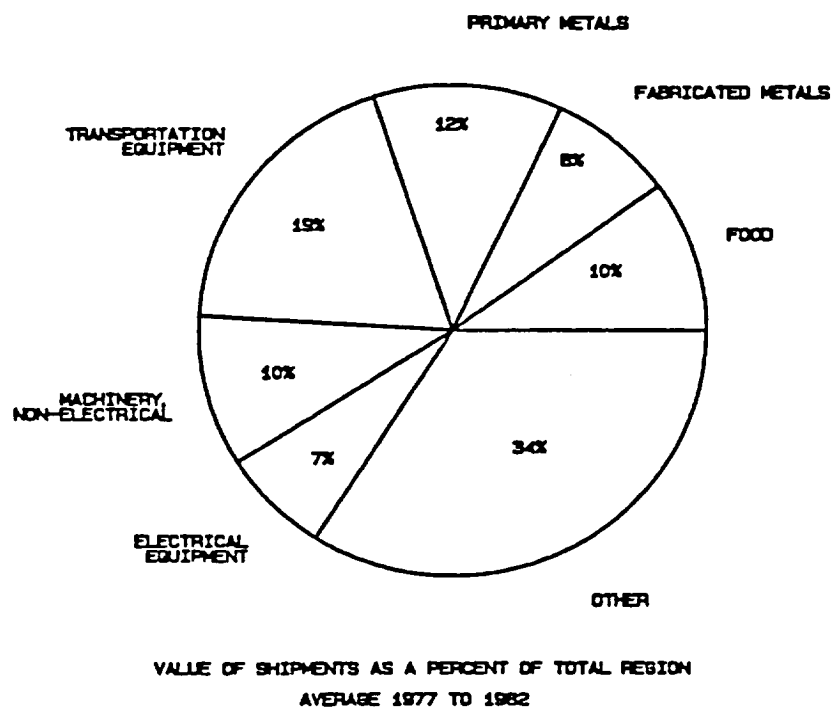
C. Trade (Continued)

The reason for this strong performance is that northern New York State, with the exception of the Buffalo area, is not as dependent upon the basic industries as is the rest of the Great Lakes Region. Instead, a significant portion of its economic activity is generated by the higher technology industries of instruments and electrical equipment, which have not experienced the declines experienced by other industries in the region. Unfortunately for the region, these stronger industries comprise only about 10 percent of the industrial activity of the region as a whole.

For the region as a whole, six industries comprise roughly two-thirds of the industrial output, as shown in Exhibit 6.

Exhibit 6

Primary Industries in the Great Lakes Region



SOURCE: U.S. DEPT. OF COMMERCE

II. THE U.S. GREAT LAKES REGION . . .

C. Trade (Continued)

Each of these industries, with the exception of the food industry, is heavily dependent upon the region's automotive production.

This is not surprising considering the fact that Chrysler Corporation, Ford Motor Company, and General Motors have a combined total of 13 assembly and 60 parts and accessories plants in the region. American Motors Corporation's primary assembly plant is located in nearby Wisconsin. (A listing of these plant locations is found in Appendix B.)

All four of the major U.S. automobile companies are headquartered in the Great Lakes Region.

As previously shown, after several years of declining sales, the U.S. automotive industry made a strong recovery in 1983, and this strength is expected to continue over the next several years.

The strength of the automotive industry, the automotive support industries, and the currently depressed primary metals industries has a direct bearing on opportunities available for Canadian exporters of high pressure washing and degreasing equipment for two reasons.

- i. The economic health of the region as a whole is invariably linked to the health of these industries.
- ii. These industries themselves, as is shown throughout this report, are among the primary users of this type of equipment.

2. Agricultural Sector

In addition to the manufacturing sector, the agricultural sector of this region's economy provides a market for pressure washers. In 1983, the value of farm marketings of crops and livestock comprised 3.6 percent of the region's total output of goods. This proportion varied widely from state to state.

II. THE U.S. GREAT LAKES REGION . . .

C. Trade (Continued)

Exhibit 7

Agricultural Output in the Great Lakes Region

	1983 Farm Marketings (Crops and Livestock) (\$000)	Agriculture as a Percent of Total Output of Goods
Michigan	\$ 3,001	2.3%
Indiana	4,009	5.8%
Ohio	3,674	2.9%
Northern New York	2,672	3.5%
Western Pennsylvania	<u>2,977</u>	6.0%
Total Region	<u>\$16,333</u>	3.6%

Source: U.S. Department of Commerce

The region's percent make-up of agricultural output is somewhat less than the United States average of 4.1 percent. It is significantly less than Canada's at 5.0 percent.

While there is a great diversity of agricultural products produced in the Great Lakes Region, the most predominant of these are dairy products, corn, cattle and soybeans.

3. Service Sector

The service sector in the Great Lakes Region is comprised of the countless activities that are of a non-industrial or non-agricultural nature.

For purposes of this report, it is useful to concentrate on one area of the service sector — Auto Repair Establishments. This group of establishments, which includes automobile dealerships, service stations qualified for automobile repair, and automobile repair shops, represents a significant market for parts cleaners.

As one might expect, the proportion of these establishments in the Great Lakes Region, at 15 percent of the total U.S., is comparable to the proportion of the total U.S. population found in this region, 16 percent.

Exhibit 8 on the following page outlines the number of Auto Repair Establishments by state within the region.

II. THE U.S. GREAT LAKES REGION . . .

C. Trade (Continued)

Exhibit 8

Auto Repair Establishments in the Great Lakes Region

	Number of Auto Repair Establishments ¹
Michigan	8,585
Indiana	6,810
Ohio	10,888
Northern New York	6,026 ²
Western Pennsylvania	<u>6,517²</u>
Total Region	<u>38,826</u>
Total U.S.	265,811
Region as Percent of U.S.	15%

¹Includes car dealers, service stations qualified for automotive repair and service work, and auto repair shops.

²Hayes/Hill estimates based upon population density.

Source: Jobber Topics

D. Summary of the Great Lakes Region

In summary, the key characteristics of the U.S. Great Lakes Region are as follows.

- It is a slow growth region relative to the U.S. as a whole, in both industrial output and population.
- It is heavily industrialized, populated by industries that provide ready markets for high pressure industrial washing and degreasing equipment.
- It is conveniently situated nearby major Canadian industrial centers.
- It is large. Total population in the Great Lakes Region is roughly one and one-half times that of Canada.

III. PRESSURE WASHERS

The first broad category of products included in this report is termed "pressure washers."

Water flowing at high pressures is a very versatile tool. It is beginning to find applications in many different industries for a variety of different tasks.

This report concentrates on the markets that use pressurized water for various cleaning and maintenance applications. Excluded are the much smaller markets that use high pressure water for underground mining and industrial cutting applications.

Pages 16 through 57 of this report describe the markets for pressure washers in detail for the U.S. Great Lakes Region.

A. Product Descriptions

For purposes of this report, the term "pressure washer" is used to describe several groups of products that utilize a relatively high pressure stream of water to accomplish a certain task. It is useful at the outset to make a distinction between these various groups since it will require markedly different strategies for Canadian manufacturers to be successful competing within each.

Strictly speaking, four groups of pressure washers are distinguishable, and are described for this report in the following way based upon their pounds per square inch (p.s.i.) ratings.

1. Low pressure washers (or Jennies)
 - 500 to 4,000 p.s.i.
2. High pressure washers - standard
 - 2,000 to 20,000 p.s.i.
3. High pressure washers - custom
 - 2,000 to 20,000 p.s.i.
4. Ultra-high pressure systems
 - Greater than 20,000 p.s.i.

It is difficult to assign horsepower requirements to each of these groups because of the interrelationship between horsepower, flow rate and pressure. Generally speaking, however, low pressure washers require power in the range of 1 h.p. to 20 h.p., and high pressure washers in the range of 20 h.p. to as high as 200 h.p.

III. PRESSURE WASHERS . . .

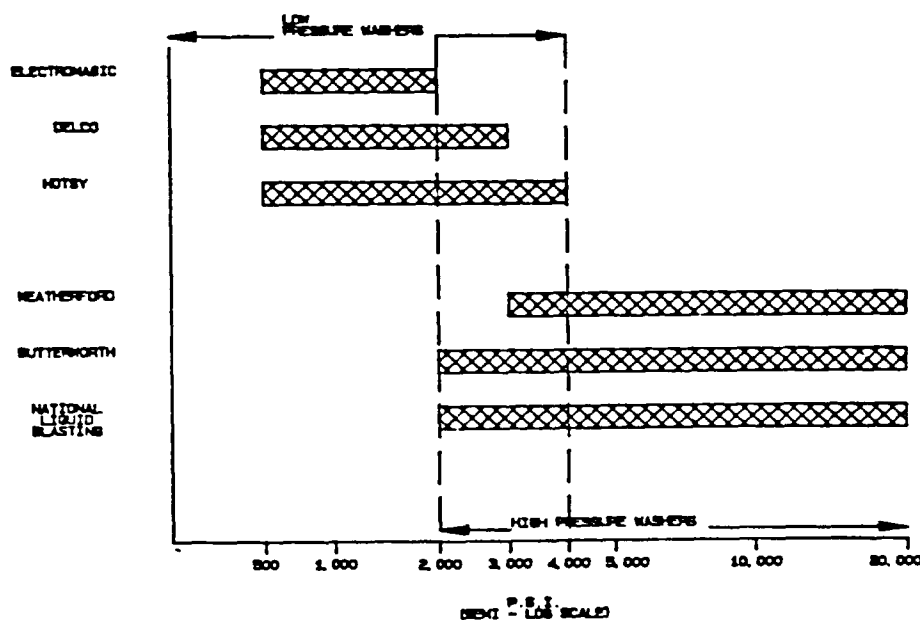
A. Product Descriptions (Continued)

Ultra-high pressure systems are not included in this report. These systems are used almost exclusively in cutting applications in the United States, with two manufacturers comprising nearly 90 percent of domestic production — Flow Systems, Inc., and Ingersoll-Rand. These systems generally operate in 50,000 to 60,000 p.s.i. ranges.

An indication that the differences between the groups of pressure washers are significant, particularly with respect to the technical and production differences, is the fact that there are quite separate groups of manufacturers serving these markets. To illustrate this point, the range of pressures offered in the product lines of several domestic manufacturers of low and high pressure washers is shown in Exhibit 9.

Exhibit 9

Representative Pressure Washer Manufacturers



Certain overlap exists in the product lines in the 2,000 to 4,000 p.s.i. range where the upper range of low pressure technology is reached, and the lower range of high pressure technology begins.

These cut off points, 2,000 p.s.i. and 4,000 p.s.i., are not really as distinct as made to appear here. A reasonable case could be made for using a different set of cutoff points. However, for purposes of this report, this distinction is sufficient.

III. PRESSURE WASHERS . . .

A. Product Descriptions (Continued)

1. Low Pressure Washers

This group of pressure washers has been used in the United States for industrial cleaning since the late 1920's. Over the years, the limitations of simple cold water cleaning have been well established, and today the industry is comprised of three basic types of systems -- cold water, hot water, and steam. Generally speaking, hot water is becoming more predominant, while steam is declining in usage.

Chemicals may be introduced into the cleaning stream as a means of improving productivity. The introduction of chemicals either reduces the surface tension holding the dirt onto the surface, or improves the molecular structure of the water, resulting in more efficient cleaning.

The fluid pump in low pressure washers is powered either by a diesel or gasoline engine, or by an electric motor. An electric unit is generally used for stationary applications and most in-plant applications.

Hot water or steam low pressure washers typically use oil-fueled burners. For in-plant applications, burners are fueled by propane, butane or natural gas.

For the past four to five years, virtually all of the major U.S. manufacturers have been using pumps manufactured in Italy and sold through two U.S. distributors -- General Pump and Interpump. Very little research and development work is currently being done in the U.S.

In 1984, Hotsy Corporation, the largest U.S. manufacturer of low pressure washers, acquired controlling interest in Leuco S.p.A., an Italian pump manufacturer. Hotsy not only uses these pumps in its domestic manufacturing, but imports whole units into the U.S. from Italy as well.

Italian pumps are less expensive than U.S. pumps. They are considered to be superior in the sense that they are thought to last longer with better built primary components.

In recent years, several European manufacturers have exported low pressure washers into the U.S. Great Lakes Region. These imports are perceived to be technologically superior to domestic models.

Improvements include more efficient and longer lasting burner systems and direct drive technology. This represents the first major effort toward technological improvements in this type of equipment for several decades, but is being met with poor response by the market. Several reasons for this reluctance have been suggested.

III. PRESSURE WASHERS . . .

A. Product Descriptions (Continued)

- Priced above the market.
- New technology too far ahead to meet what are relatively simple market needs.
- Units not yet thoroughly tested.
- Some resistance in this region to buying products made overseas.

Additional technological developments have included a trend toward units using higher pressures and smaller water volumes to improve washing efficiency, and more sophisticated chemical injection systems.

Within the past five years a specific trade association has been created for manufacturers of low pressure washers called the Cleaning Equipment Manufacturers' Association (CEMA). CEMA is "an international, non-profit trade association through which members coordinate their efforts to promote education, information and standards for the industry."

CEMA is presently working with Underwriters Laboratories to establish the first set of industry-wide standards for both low and high pressure washers. A discussion of these standards is included in Part G of this section.

2. High Pressure Washers - Standard and Custom

Unlike low pressure washers, high pressure washers constitute a relatively new industry, with the first commercially viable unit sold in the U.S. around 1960. The Water Jet Technology Association (WJTA), established several years ago primarily to facilitate industry standardization and safety, has done much to promote the industry in recent years. As a result, new applications in widely differing types of industries are continually being discovered and developed.

Much of the recent growth in the industry is accounted for by the fact that as new applications are discovered, more exposure is given to this type of cleaning equipment.

The challenge facing the industry today can be described as follows.

- Many of the established markets for high pressure washers, such as maintenance in the petrochemical industry, are mature. Growth will need to come from applications that have yet to be discovered.

III. PRESSURE WASHERS . . .

A. Product Descriptions (Continued)

- Those industries that may have a use for this equipment may not be aware of its potential. Manufacturers of high pressure washers may not be sufficiently familiar with most industries to allow them to suggest possible applications.
- Opportunities will exist for those manufacturers that are able to identify and market new applications creatively. This is most likely to occur in the customized, automated segment of the industry.

Generally speaking, a washer is either manual, semi-automated or automated, with the degree of customization increasing with the level of automation.

Manual	Semi-Automated	Automated
Pump, spray gun operator	Pump, spray gun operator Self-propelled carriage	Stationary unit as an integral part of an in-line operation
Standard <-----> Custom		

The most popular manually operated, standard high pressure washer in the industry has a flow rate of 10 GPM and a pressure rating of 10,000 p.s.i.

- It is estimated that five of these units are sold for each one of all of the other configurations combined.
- This is thought by the market to have the most applications at the most reasonable cost.

Up until the late 1970's, the majority of automated systems were created by the user, using standard high pressure washers as components. In an effort to improve safety, many users now look to the pressure washer manufacturers to put together systems for them.

In the high pressure group of washers, the pump constitutes a sizeable portion of the total cost of the equipment. It is the primary component that distinguishes one manufacturer from another. In recent years, the development of more reliable non-pump component parts, such as nozzles, has further contributed to the growth of both manual and automatic systems.

III. PRESSURE WASHERS . . .

A. Product Descriptions (Continued)

Two examples of recent technological developments illustrate the changes taking place in the high pressure washer industry.

1. In the past, the cleaning of a grate in an automotive assembly paint shop normally required four men a total of 16 hours to accomplish by removing the grate and cleaning it in a large tank, which also required a tank operator.

Several years ago, spin jet high pressure washers that move from spray paint booth to spray paint booth were developed, thereby creating significant savings in manual labor time.

The spin jet process itself represents an improvement over the fan spray method of cleaning over a large surface area. The effect of fanning a spray had been to reduce the water's cleaning ability. Since jets placed at intervals around a spinning chassis need not be fanned, their cleaning effectiveness is not sacrificed.

2. Suction rollers used in the pulp and paper industry are hollow cylindrical devices covered with many small holes. During production these holes become plugged with pulp and must be periodically cleaned.

The traditional method of doing this has been to water blast the roller from the outside using standard high pressure washers. Because each hole is tapered with the smaller end on the inside, it is inefficient to clean from the outside.

Recently an automated high pressure washer has been developed that moves within the cylinder. Cleaning from the inside unplugs the holes more quickly and cleans the roller more efficiently.

B. Market Size Estimates

The estimated size of the market for washers is shown on the following page. These estimates are derived from a combination of statistics published by the U.S. government, market studies performed by CEMA, and estimates made by Hayes/Hill based upon field interviews.

III. PRESSURE WASHERS . . .

B. Market Size Estimates (Continued)

	1982	
	Total U.S. (\$MM)	Great Lakes Region (\$MM)
Low pressure washers	\$ 60 - 80	\$13 - 18
High pressure washers (Standard and custom)	<u>40 - 50</u>	<u>9 - 11</u>
Total sales	<u>\$100 - 130</u>	<u>\$22 - 29</u>

Source: Department of Commerce; CEMA; Hayes/Hill Estimates

The volume of replacement parts and chemicals in this industry comprises a significant portion of the total, with estimates ranging from 25 percent to 30 percent. Rentals are estimated to comprise roughly 5 to 10 percent of the total sales volume.

	1982	
	Total U.S. (\$MM)	Great Lakes Region (\$MM)
Equipment	\$ 64 - 84	\$14 - 18
Replacement Parts and Chemicals	28 - 36	6 - 8
Rentals	<u>8 - 10</u>	<u>2 - 3</u>
Total	<u>\$100 - 130</u>	<u>\$22 - 29</u>

Growth in low pressure washers has averaged about ten percent per year in recent years. One maintenance equipment manufacturer that recently purchased a pressure washer manufacturer is using ten percent per year as its estimate for future growth.

As stated previously, growth in high pressure washers over the past several years has been primarily in the automated, customized lines. Estimates of the growth in customized high pressure washers over the past five years have averaged roughly 30 to 40 percent per year.

III. PRESSURE WASHERS . . .

B. Market Size Estimates (Continued)

The market for standard high pressure washers has remained relatively stable over the past few years.

Industry participants expect both of these trends in the high pressure washer market to continue into the foreseeable future.

C. End-User Description and Requirements

Washers are used for maintenance purposes in a wide variety of diverse industries, from cleaning the heating and air conditioning unit in a fast food restaurant to blasting barnacles from the support leg of an offshore drilling platform prior to inspection. In fact, there are very few industries where an application for washers cannot be found.

It follows that those industries that are dominant in a certain region will be likely industries on which to concentrate a marketing program. For example, in the heavy agricultural states west of the Mississippi River, the largest applications for low pressure washers are the cleaning of farm implements, and farm building maintenance. In the oil-producing state of Texas, there is a high concentration of manufacturers of high pressure washers serving the petrochemical industry.

Neither of these industries is dominant in the U.S. Great Lakes Region, however.

Based upon estimates provided by manufacturers and distributors, the following picture of the region's primary user industries has been developed. This picture should provide a Canadian manufacturer with reasonable expectations upon entering this region.

Low Pressure Washers		High Pressure Washers (Standard and Custom)	
70%	<ul style="list-style-type: none"> ● General plant maintenance ● Fleet maintenance 	<ul style="list-style-type: none"> ● Industrial cleaning contractors 	40%
30%	<ul style="list-style-type: none"> ● Food Processing ● Agriculture ● Restaurants ● Construction 	<ul style="list-style-type: none"> ● Heavy industrial maintenance: Automotive plants Chemical plants Power plants ● Civil maintenance 	60%

Note: Appendix C outlines the various applications for pressure washers in selected industries.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

As might be expected, the product and sales support needs of particular users in different industries, and even within the same industry, can vary greatly. In order for a Canadian manufacturer to develop an appropriate marketing strategy for this region, considering the diversity of users, it is necessary to develop an initial understanding of the differing user requirements.

The following paragraphs are examples of the key characteristics of representative users in the primary industries of the U.S. Great Lakes Region. Once a decision has been made to enter the market, a more detailed and comprehensive study of user characteristics can be performed with the help of your manufacturers' representatives or distribution network.

1. Low Pressure Washers

The process of compiling data for this report included discussions with several users of various types of low pressure washers, representing six different industries.

Tabulations of these discussions with respect to (1) where product information is obtained, and (2) the purchase criteria used are presented below.

Aside from the efforts of a strong distributor network, the most important method of making your product known to potential end-users is through trade magazines and shows. Promotional requirements are more completely outlined in Part E of this section.

Product Information Sources

	<u>Percent of Respondents Using These Sources</u>
Trade magazines	70%
Trade shows	40%
Telephone Yellow Pages	30%
Past experience	30%
Thomas' Register	20%
Direct mail	20%

For Canadian manufacturers the most important aspect of the marketing approach will be convincing potential customers that parts and service availability will not pose a problem. Once this concern is overcome, price and reliability will be the overriding purchase criteria.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

Purchase Criteria

	<u>Percent Citing These Criteria As Among The Most Important</u>
Service	70%
Parts availability	60%
Reliability/Durability	60%
Price	50%
Special features	50%
Demonstration	40%
Brand/Product experience	40%

Many larger industrial users and all governmental bodies will request the submission of bids when purchasing this equipment. When dealing with a governmental body, the bid process is much less flexible and more dependent upon price than with a typical industrial concern.

The following example of the purchase considerations of a manufacturer of wheels and brakes typifies most industrial concerns.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

	WHEEL AND BRAKE MANUFACTURER
Requirements	1,500 p.s.i., 2,000 p.s.i.
Application	Die cleaning; mobile equipment cleaning
Sales Contact	Material Handling Engineer
Purchase Process	<ul style="list-style-type: none"> ● Compiles list of manufacturers and distributors. ● Submits list and product specifications to purchasing. ● Vendor submits bid explaining cost and how product meets needs. ● Distributor performs demonstration.
Important Buying Criteria	<ol style="list-style-type: none"> 1. Demonstration of superior equipment at a competitive price 2. Service (dealer responsibility) 3. Reliability of product, good tires 4. Past experience with user
Methods by Which Suppliers are Identified	Trade Magazine Action Cards

One of the more predominant applications for low pressure washers in the Great Lakes Region is fleet maintenance. Of those companies that maintain a fleet of vehicles, perhaps the largest group consists of truck leasing establishments. An example of the requirements and purchasing considerations of a truck leasing company is shown on the following chart.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

	TRUCK LEASING COMPANY
Requirements	Stationary and portable up to 1,200 p.s.i.
Application	Fleet maintenance
Sales Contact(s)	Purchasing Manager
Purchase Process	<ul style="list-style-type: none"> ● Members of Maintenance, Technical and Purchasing Departments develop minimum standards for pump size, service-ability, etc. ● Review is made of different products that have been presented in the past and are on file.
Important Buying Criteria	<ol style="list-style-type: none"> 1. Satisfy minimum standards set by committee 2. Service 3. Price 4. Reliability
Methods by Which Suppliers are Identified	<p>Trade Magazines</p> <p>Direct approach from distributor or manufacturer</p>

Food processing plants clean frequently during the course of each 24 hour period. As a result, this places special demands upon a distributor that wishes to make a sale, as well as upon the quality and reliability of the product. The following example illustrates this point.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

	FOOD PROCESSING PLANT
Requirements	150 - 500 p.s.i.
Application	Floor and machinery maintenance
Sales Contact	Purchasing Manager
Purchase Process	<ul style="list-style-type: none"> ● Plant Superintendent sends requisition for new equipment to Buyer. ● When developing supplier list, Buyer prefers local businesses. ● Evaluation of distributor's service quality and parts availability.
Important Buying Criteria	<ol style="list-style-type: none"> 1. 24-hour service and parts availability 2. Low maintenance requirements 3. Product and distributor track record 4. Demonstrations 5. Price
Methods by Which Suppliers are Identified	<p>Yellow Pages</p> <p>Thomas' Register</p> <p>Direct mail introductory price offerings</p>

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

2. High Pressure Washers

With few exceptions in the Great Lakes Region, users are accustomed to dealing directly with the manufacturer when buying high pressure washers. This reflects the method of sale used by manufacturers in the region, as outlined in Part D of this section.

Most users contacted rely upon their past experience with manufacturers, their product literature files, and trade publications for their information on companies and products.

One major factor has certainly affected the decision of the majority of contract cleaners to use equipment sold by the dominant Great Lakes Region supplier — National Liquid Blasting. National Liquid Blasting is apparently the only manufacturer offering lease financing packages to this segment of the market.

An example of the buying characteristics of a typical contract cleaner is shown on the next page.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

	CONTRACT CLEANER
Requirements	10,000 p.s.i. (standard)
Application	Cleaning boiler tubes, waste treatment tanks
Sales Contact	Owner
Purchase Process	<ul style="list-style-type: none"> ● Creates specifications for current need. ● Deals directly with manufacturer. ● Requires demonstration for new, unproven equipment. ● Needs to be assured of parts availability. ● If demand seems temporary, will rent.
Important Buying Criteria	<ol style="list-style-type: none"> 1. Safety 2. Quality of the training program offered by the manufacturer 3. Experience with unit 4. Price
Methods by Which Suppliers are Identified	<p>Product Literature</p> <p>Engineering Magazines</p>

Maintenance equipment at the automobile companies is purchased at the plant level. An example of such a purchase is illustrated on the following chart.

III. PRESSURE WASHERS . . .

C. End-User Description and Requirements (Continued)

	AUTOMOBILE MANUFACTURER
Requirements	8,000 p.s.i. spin jet (custom)
Application	Paint shop grate and chain cleaning
Sales Contract	Plant Engineering
Purchase Process	<ul style="list-style-type: none"> ● Lasts 9 to 12 weeks. ● Compiles list of 7 to 8 manufacturers. ● Dealing direct with manufacturer, receives cost estimates for equipment and maintenance; also requires list of parts numbers. ● Checks to see if manufacturer is on company's Safety Approval List. ● Reviews experience in other plants. ● Makes decision. ● Credit subsidiary administers purchase.
Important Buying Criteria	<ol style="list-style-type: none"> 1. On Safety Approval List 2. Training - required as part of contract 3. Price
Methods by Which Suppliers are Identified	<p>Trade Magazines</p> <p>Direct Mail File</p>

High pressure washers used as components in in-line systems, however, are not necessarily purchased in this manner. Section V of this report, beginning on page 91, describes in detail the purchase process and decision criteria used by automobile manufacturers when making this type of purchase.

III. PRESSURE WASHERS . . .

D. Sales and Distribution

The method of sales and distribution of pressure washers in the Great Lakes Region depends on two things.

1. The industry segment being targeted
2. The type of equipment being sold

As pointed out in Part C of this section, users of pressure washers use various sources related to their industry for gathering information about suppliers. In the same way, suppliers of pressure washers may use industry-specific sales approaches and channels in reaching their markets.

Also, low pressure washers and high pressure washers are not sold through the same channels. There are two reasons for this.

1. They typically are not sold into the same markets.
2. It requires much more expertise to demonstrate and sell a high pressure washer than a low pressure washer.¹

Therefore, distribution within the two product groups is discussed separately.

1. Low Pressure Washers

The diagram in Exhibit 10 depicts the channels of distribution found in the low pressure washer market. Exhibit 11 includes data from a recent quarterly survey performed for CEMA that shows the approximate percent of total sales made through these channels.

Generally speaking, low pressure washers are sold through three channels of distribution.

1. Pressure washer specialists.
2. Industry-specific distributors.
3. Farmer's cooperatives, which may in turn sell through farm suppliers.

Also, a small percentage (five to ten percent) of sales are sold on a direct basis.

¹Arrangements do exist, however, where high pressure washer manufacturers pay referral commissions to low pressure washer distributors.

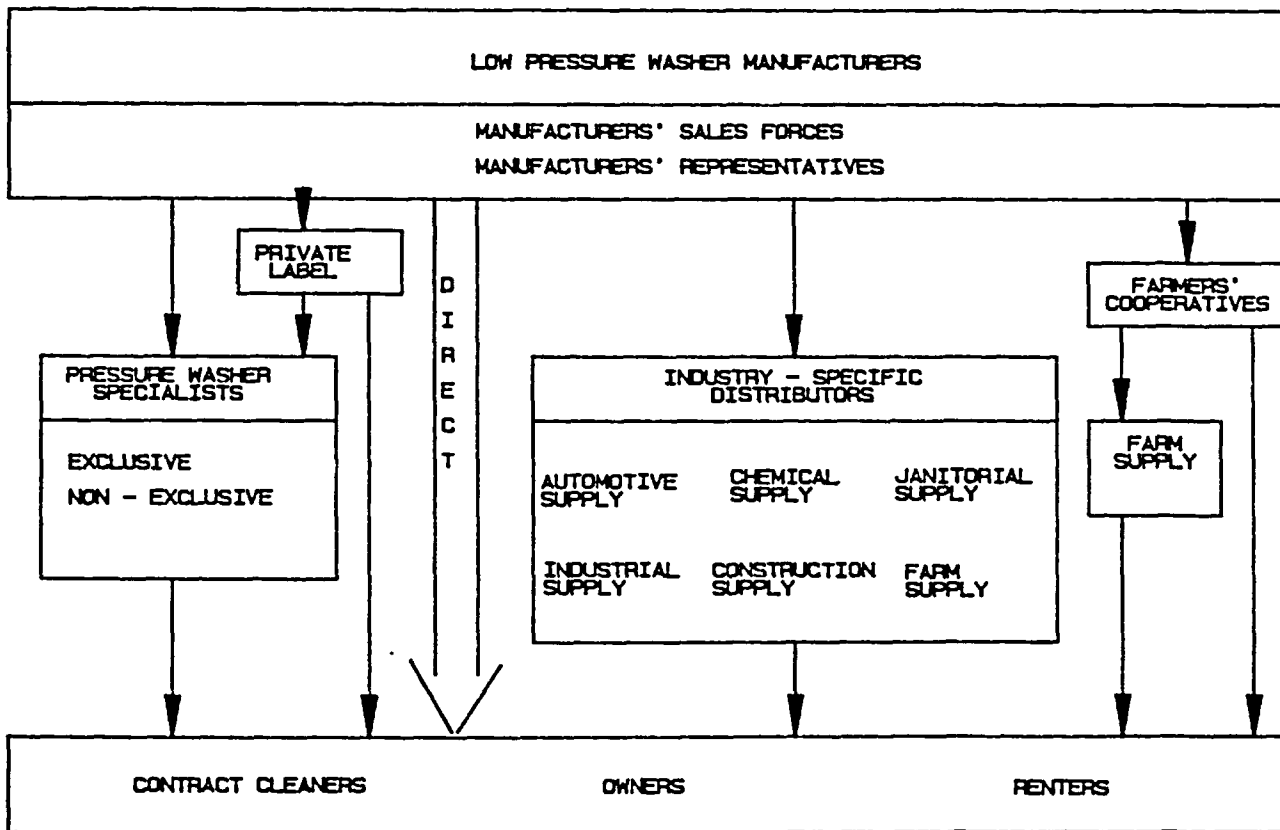
III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

Roughly ten percent of low pressure washers are sold on a private label basis. This is a strategy used by some manufacturers to get more of their product out into the market, without competing directly with their own existing distributors. This takes two forms.

- Selling through a parent company's distribution network under the parent company's name.
- Selling through large chemical companies' national sales forces as they make calls on maintenance customers.

EXHIBIT 10
SIMPLIFIED DIAGRAM OF SALES AND DISTRIBUTION OF LOW PRESSURE WASHERS



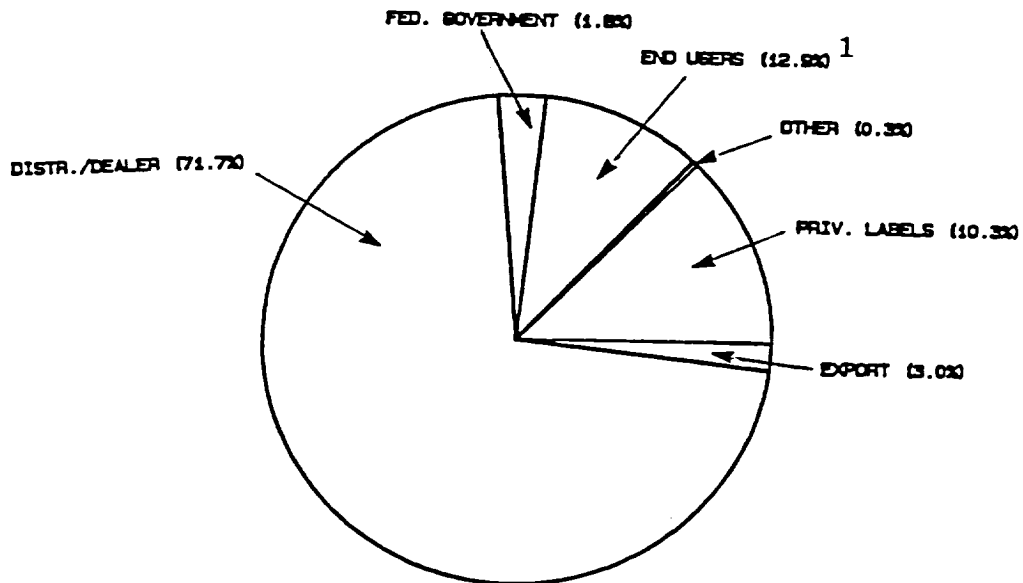
III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

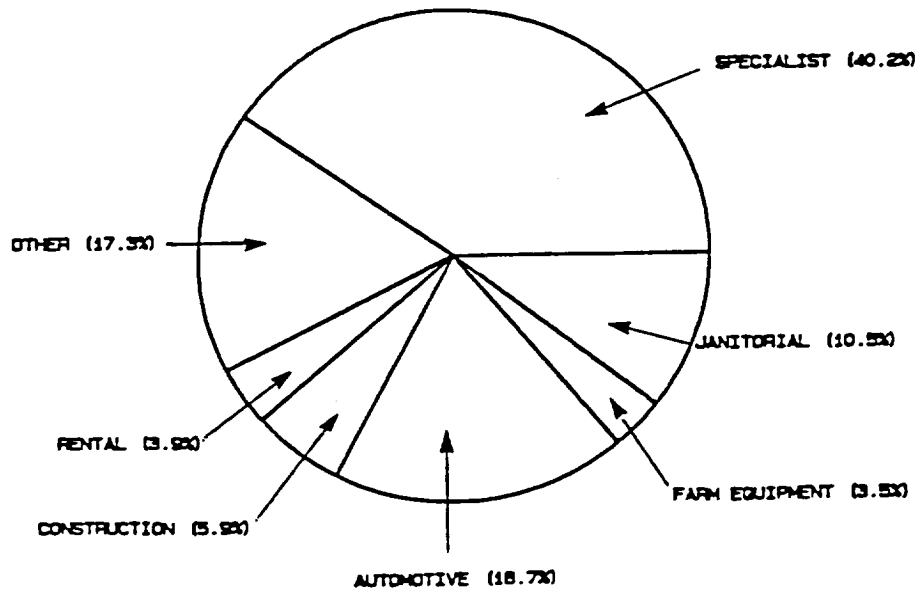
Exhibit 11

Low Pressure Washer Distribution Channels - Percent Breakdown

Channels



Distributor/Dealer Channel



Source: CEMA

¹Overstated due to the reporting of certain high pressure washer manufacturers in the survey.

III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

a. Pressure Washer Specialists

Pressure washer specialists are distributors that are in the business of stocking, selling and servicing cleaning equipment and accessories. In the pressure washer industry, the vast majority of specialists are non-exclusive insofar as they may carry several competing brands of washers at a given time.

Since this method of distribution is therefore not closed to Canadian manufacturers, it represents a viable method of entry to the market.

Geographical coverage for a specialist is usually confined to a single metropolitan area and may expand to include the entire State in which it resides. Some specialists have established branch offices to service or expand their territory more effectively.

When building their lines, specialists take into consideration (1) how many units can be sold in their territory and (2) how much profit can be made on each sale. When considering point (1) the specialist will evaluate the following.

- Have I been given an exclusive territory and, if not, how many other distributors handle the product in my area?
- Does the product have features that will complement my product line?
- To what extent will I benefit from the parts business on existing machines of this brand?
- Do I need a product with European-style technology to compete as a full line distributor?

After all else is considered, a specialist will push the products of those manufacturers that offer the greatest profit potential. Dealer loyalty to manufacturers is not very strong in this industry. The following are the most common reasons for dropping a line.

- Non-competitive discount levels
- Slow delivery
- Poor parts availability

III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

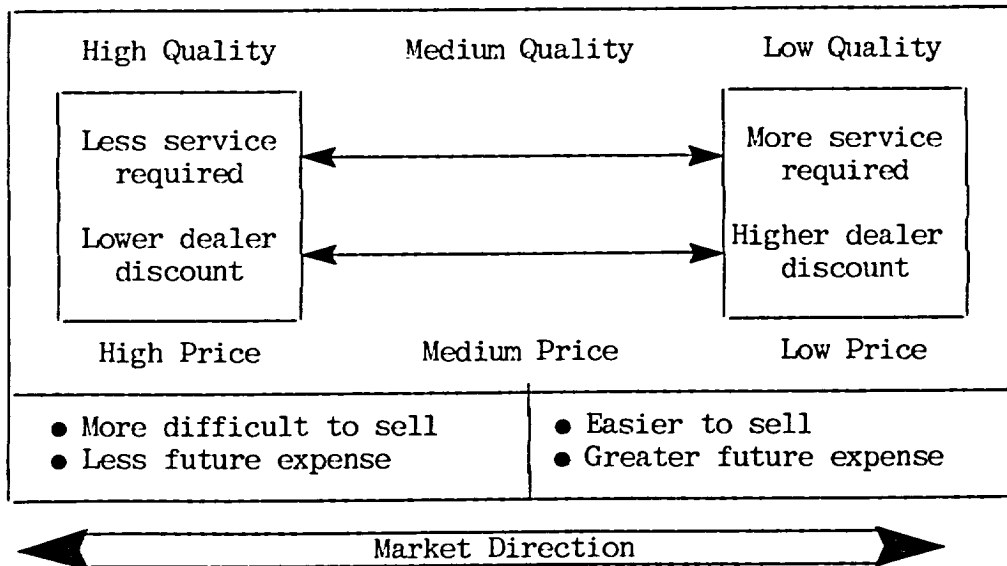
The low pressure washer specialist is far more important than brand loyalty when making a sale. Repeat customers will often rely upon the recommendation of the specialist based upon past experience. Because there is relatively little product differentiation among (domestic) manufacturers, brand loyalty among users is not very strong to begin with.

In any case, a specialist needs to rely upon its reputation and customer referrals in order to stay in business.

The extent to which a Canadian manufacturer can support a specialist to this end is the extent to which it can be successful in this market.

When approaching specialists it is necessary to keep in mind the relationships between several key variables from the distributors' point of view. The diagram below shows that the market has been moving in recent years toward a lower priced, lower quality product as the industry has become more competitive.

- Specialists have found these to be the easier products to sell, particularly to first-time buyers who aren't as sensitive to future service problems caused by lower quality machines.
- Specialists will only sell a high quality machine at a high price to those customers that place a high value on maintenance-free operation.



III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

A representative listing of low pressure washer specialists in the Great Lakes Region is presented in Appendix E.

When contacting a specialist, it is important to have a well-defined plan of distribution ready for discussion. This plan would include distributor support matters such as training, parts availability, territory outlines and other matters as discussed in Part E of this section.

b. Industry-Specific Distributors

Industry-specific distributors are those that serve a particular industry carrying a broad line of products of interest to that industry. In a given area, these distributors are easily identified using the local telephone Yellow Page listings.

The most predominant of these distributors are chemical suppliers, which view the sale of low pressure washing equipment as a method of increasing cleaning chemical sales. Channel members are typically set up individually, or by approaching the central office of a major chemical company.

The advantage to using chemical suppliers is that they tend to have much larger sales forces than pressure washer specialists. The disadvantage is that they are typically not able to provide the same level of service.

Other industry-specific distributors that may have an interest in carrying a line of low pressure washers include the following.

- Automotive parts suppliers
- Industrial equipment suppliers (forklifts, sweepers and scrubbers, etc.)
- Janitorial equipment suppliers
- Construction equipment suppliers
- Farm equipment suppliers

Any one of these channel members may or may not wish to stock pressure washers. If a Canadian manufacturer's delivery times are short, this will not present a problem.

III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

An industry-specific distributor needs to agree to do two things, however.

1. Servicing of equipment
2. Parts stocking

More and more industry-specific distributors are providing service and parts, where they hadn't in the past, due to pressures from end users.

Each of these industry-specific distributors represents a relatively small, hard-to-reach market. Canadian manufacturers are advised to concentrate their initial efforts through pressure washer specialists and chemical suppliers.

c. Farmers' Cooperatives

At the present time, sales of low pressure washers to the agricultural market are not as significant as to other industries in the Great Lakes Region.

Most market participants feel that the agricultural market in the region has strong potential, but that it is too fragmented to be worth the effort.

The best way to reach this market is through farmers' cooperatives (co-ops).

These farmers' cooperatives are co-ops which have both marketing and supply functions. Many small agricultural co-ops have only crop marketing activities. Farm co-ops, on the other hand, both buy machinery, supplies and agricultural construction products for resale to their member farmers and sell the crops produced by members.

Some farm co-ops have diversified into being manufacturers of consumer products and refiners of oil, competing with some of the United States' largest corporations. Yet, local cooperative strength is not uniform. There is great diversity across and within states. Regional selling efforts could identify specifically how important as channel members the local farm co-ops are.

Manufacturers may sell efficiently direct to some of the larger farm co-ops that have centralized purchasing for large geographic areas. Farm co-ops tend to purchase items on a private label basis where brand recognition is not an issue.

III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

The farm co-op's brand name is the one which will be leveraged to sell to farmers, not the name of the original manufacturer. Canadian manufacturers have no recognition disadvantage, then, in competing with U.S. manufacturers for this private label business.

Advertising to farmers is the key to reaching farm co-ops, as a cooperative consists of farmer members that both finance the activities of the farm co-op and share in its profits. Appendix E contains a listing of some farmers' cooperatives in the Great Lakes Region.

Distribution Channel Discount Expectations

Of the distributors surveyed, discount expectations range between 30 and 55 percent, with an additional 2 percent for payment within ten days. It is also reported that a new entrant into the market may need to add yet another 5 percent until it has established itself.

Manufacturers typically offer special discounts to distributors for large-volume single orders. A typical structure may look like this.

<u>Order Size</u>	<u>Discount</u>
1-2	Standard
3-9	Standard + 5%
10 or more	Standard + 5% + 5%

The additional discount reflects the freight savings achieved with higher volume loads.

Freight is often used as a tool for marketing to distributors. In addition to volume discounts, one manufacturer will prepay the freight on large orders, and bill the distributor. This eliminates the need for the distributor to have large sums of ready cash at hand when the equipment arrives.

Except in cases where discounts are provided for early payment, terms are payment in full within 30 days.

Replacing a Sales Force with Manufacturers' Representatives

Historically, most domestic manufacturers of low pressure washers sold their products to distributors using a sales force of company-employed salesmen. Recently, however, the use of manufacturers' representatives selling on commission, or simply direct telephone contact between the home office and the distributor, is gaining popularity in the U.S.

III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

In the face of mounting competitive pressures and cost containment, it has become very difficult to give the distributor a competitive discount and at the same time support a regional or national sales force.

Manufacturers' representatives offer manufacturers, especially smaller and new market entrants, several advantages.

- They offer immediate entry into a market due to the established and long-term relationships they have with their customers.
- It is the low risk way to enter the market as they are paid on a strictly commission basis.
- They tend to be highly motivated as they have to perform or they will not only lose the line, but could go out of business.
- They provide in-depth knowledge of the local marketplace, and offer in-place distribution for a new line. At times, they are instrumental in developing a market for a manufacturer.
- They offer a manufacturer control over sales costs.

According to manufacturers contacted, the greatest disadvantage to using a manufacturers' representative is that if you decide to handle a large account from the home office, the representative may decide to set up your line with a competing distributor in the territory.

Whichever industry a Canadian manufacturer wishes to target will dictate the type of manufacturers' representative used. Those representatives that would be in a position to call on those distributors catering to your targeted industry are most appropriate. For example, if you wish to target the agricultural market, two or three channels of distribution would be appropriate — pressure washer specialists, farm co-ops and/or farm suppliers.

- Since the use of manufacturers' representatives is a relatively recent trend, it may take some work on the part of the manufacturer to identify those that are willing to call on specialists. A good place to start would be those handling lines of maintenance equipment and/or supplies.
- Representatives working in the agricultural markets are easily identified in most directories in the category of agricultural equipment and supplies.

III. PRESSURE WASHERS . . .

D. Sales and Distribution (Continued)

Sample listings of manufacturers' representatives in industries covered in this report are found in Appendix I. An additional discussion of manufacturers' representatives is found in Section IV, Part D, p. 73.

Several directories are available that list manufacturers' representatives by industry specialty and by geographic location. A listing of these directories is found in Appendix O.

2. High Pressure Washers

Distribution of high pressure washers in the U.S. Great Lakes Region is problematic for three reasons.

1. This regional market is dominated by National Liquid Blasting Corp. (NLB), the only manufacturer actually headquartered in the region. For several reasons outlined in Part F of this section, no other manufacturers have been able to establish widespread distribution in the region.
2. In order to compete using distributors in this region, a network would need to be developed where none currently exists. This would require significant expenditures of time and money before a single product is sold.
3. High pressure washers are not considered attractive to distributors because of their historically low profit margins. In addition, most distributors would not be financially able to purchase and resell a \$40,000 piece of equipment.

The diagram in Exhibit 12 depicts the types of distribution available in the high pressure washer market.

The few specialists that do carry high pressure washers are primarily in the business of renting equipment and supplying parts. Appendix F lists some of these distributors.

Historically, high pressure washer manufacturers in the U.S. have used a strategy of selling equipment directly to users at very low margins in order to obtain high-margin replacement parts business. (Recall that replacement parts generate about 25 percent of industry revenues.)

Recently, however, parts manufacturers and parts duplicators have become well entrenched. This has had the effect of lowering industry-wide parts margins.

Given the difficulty of establishing an independent dealership network the best approach for a Canadian manufacturer would be to sell direct from the factory.

III. PRESSURE WASHERS . . .

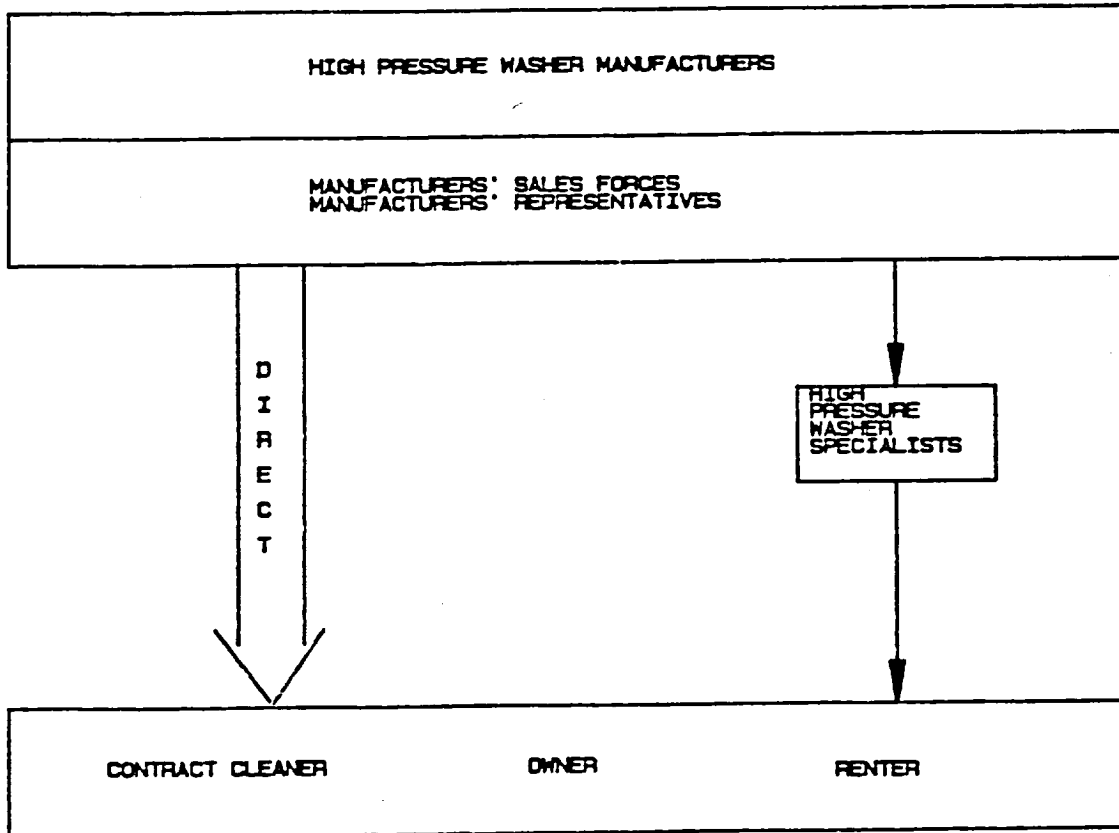
D. Sales and Distribution (Continued)

Looking for manufacturers' representatives to help penetrate this market is probably not a viable strategy for Canadian manufacturers.

- It would likely be difficult to find available representatives with the required technical knowledge necessary to compete with NLB.
- Representatives often prefer to handle established companies with in-place retrofit and parts markets.

EXHIBIT 12

SIMPLIFIED DIAGRAM OF SALES AND DISTRIBUTION OF HIGH PRESSURE WASHERS



III. PRESSURE WASHERS . . .

E. Market Support Requirements

Market support requirements for manufacturers of low pressure and high pressure washers differ significantly. This is primarily because low pressure washer manufacturers support an extensive distribution network, while high pressure washer manufacturers sell directly to end-users.

1. Low Pressure Washers

The degree of sales support provided to distributors by manufacturers varies widely. Generally speaking, the more support provided to a distributor, the more a manufacturer can expect from that distributor.

In the Great Lakes Region most manufacturers offer distributors exclusive territories, although few distributors will carry only one brand. Since this strategy puts the manufacturer at some risk, often the initial exclusivity arrangement will be given on a trial basis, with a more permanent relationship established once the distributor has proven itself.

In any case, distributor arrangements are normally verbal. The distributor is given to understand that its territory is exclusive as long as it sells sufficient volume.

Support Expected From the Distributor

Since the distributor plays a significant sales role in this market, word-of-mouth about the quality and reputation of the distributor is a major source of sales leads. In addition, distributors will generate leads through several types of promotional methods.

a. Business-to-Business Telephone Yellow Page Advertising

This is the most effective advertising for a distributor because of its local audience. The major U.S. competitors share the cost of this advertising and allow the distributor to use the manufacturer's name and logo in the ad. Co-op advertising funds have been reported at two percent of distributor sales.

b. Regional Trade Magazine Advertising

Most distributors will advertise in several regionally-oriented trade magazines. Some examples in the State of Michigan include the following.

- Industry Digest
- Michigan Truck Trader
- Michigan Industry

III. PRESSURE WASHERS . . .

E. Market Support Requirements (Continued)

Appendix D outlines the cost and effectiveness of Industry Digest, a typical regional magazine catering to Michigan industry.

c. Regional Trade Shows

There are hundreds of regional trade shows every year in the Great Lakes Region. These shows are designed to bring together buyers and sellers in a given regional market.

Normally, regional shows are attended by distributors with some cooperation from the manufacturer.

Appropriate types of shows attended are the following.

- Regional industrial shows
- Boat shows
- Home builders' shows
- Automotive service industry shows
- Rental shows
- Chemical shows
- County and State fairs
- Farm shows

While these shows are normally attended only by distributors, a Canadian manufacturer concentrating only in the Great Lakes Region may find these to be more beneficial than national shows.

Recently, however, distributors have cut back on their attendance at shows for various reasons.

- Too costly (an average two-day exhibit can cost \$2,000).
- Too time consuming.
- Not considered a cost-effective way of generating leads.

III. PRESSURE WASHERS . . .

E. Market Support Requirements (Continued)

Support Expected From the Manufacturer

Channel members expect manufacturers to provide at least some of various types of additional support and programs.

- While manufacturers may provide co-op funds for regional advertising, most manufacturers restrict their ad dollars to national advertising. Distributors report a significant number of leads are generated from this advertising, but expect the manufacturer to pre-screen or qualify leads obtained in this manner.

Many different publications are cited by manufacturers, distributors and end users as being the most likely to provide leads through advertising. These publications are listed in Appendix O.

Some industry-specific magazines appear on this list. These are likely the most predominant for those industries. A Canadian manufacturer concentrating on a particular industry should be aware that many more publications exist for each industry.

Information similar to that found in Appendix D should be evaluated when considering where to advertise.

- While trade shows are frequently cited as promotional opportunities for both distributors and manufacturers, this approach is considered to be on the decline among manufacturers in this period of careful cost control. The cost of trade show participation, now roughly \$2,000 to \$3,000 per show is becoming more difficult to justify among industry participants.
- Warranty programs offered by manufacturers typically range from 120 days to one year on the pump and accessories, but can be as short as 90 days or as long as three years. Pressure washer specialists often provide their own warranty program, either in written form or verbally offered.
- At least one domestic manufacturer offers a program whereby it will arrange with an independent leasing company to aid customers with the financing of their equipment. This is somewhat unusual in the industry, however. Normally the distributor will arrange for this type of financing with the customer.

III. PRESSURE WASHERS . . .

E. Market Support Requirements (Continued)

- Distributors are willing to give up the advantages of close personal contact with manufacturers or their agents in order to obtain greater discounting from a lower overhead operation.

Many smaller manufacturers deal with distributors strictly through the mail or via telephone.

Establishing a distributor network this way, however, requires a recognizable brand name. Distributors normally will not take a chance on an unknown product with only limited contact with the manufacturer.

- Initial personal contact with distributors is expected for the purpose of training in the use and servicing of the product. Manufacturers will spend as much as one day with a distributor.

Since product demonstration is the primary sales tool in this industry, equipment training is a vital service that the manufacturer performs.

2. High Pressure Washers

In the high pressure washer industry, direct sales contact coupled with trade advertising and direct mail programs are the most effective ways of reaching key markets.

Since safety is of prime concern to users of high pressure washers, the sales effort should emphasize equipment safety features, as well as the quality of the training program provided.

Rapid response to service and parts requirements is necessary for the support of certain segments of the high pressure market, such as automobile manufacturers.

Selling to the contract cleaner segment of the market requires much product knowledge and technical expertise. Contract cleaners are themselves experts in every aspect of the product. National Liquid Blasting Corp. owes much of its success with contract cleaners to its reputation for innovative products.

Demonstration of high pressure washer equipment is sometimes necessary to make a sale, but it is not a general requirement as with low pressure washers.

III. PRESSURE WASHERS . . .

E. Market Support Requirements (Continued)

3. Tariff and Freight on Pressure Washers

Most manufacturers ship pressure washers F.O.B. factory, passing the responsibility of paying freight costs to the distributor. Some manufacturers find it is more cost effective to handle all freight matters themselves, including the payment of freight. Freight is then billed to the distributor through the invoice.

In any case, Canadian manufacturers shipping to the United States have several matters to consider concerning customs and transportation. These matters are discussed in Section V, p. 91.

F. Competitive Environment

There are far fewer manufacturers of high pressure washers than low pressure washers, primarily because it requires a more sophisticated manufacturing process to produce a washer capable of maintaining the higher pressure ranges. In addition, the demand for high pressure washers is significantly less than for low pressure washers on a total unit basis.

1. Low Pressure Washers

The low pressure washer market is very competitive, with estimates of the total number of companies competing in the United States ranging from 150 to as many as 250.

There are very many small regional manufacturers of low pressure washers. They are able to exist for three basic reasons.

- The manufacturing process is not complex.
- Parts can be made standard and commonplace for easy servicing.
- A certain portion of the market buys strictly on price, giving advantage to a low overhead regional manufacturer.

About 30 or 40 U.S. manufacturers could be considered national in scope. Of these, the most predominant are listed in Exhibit 14 on page 49.

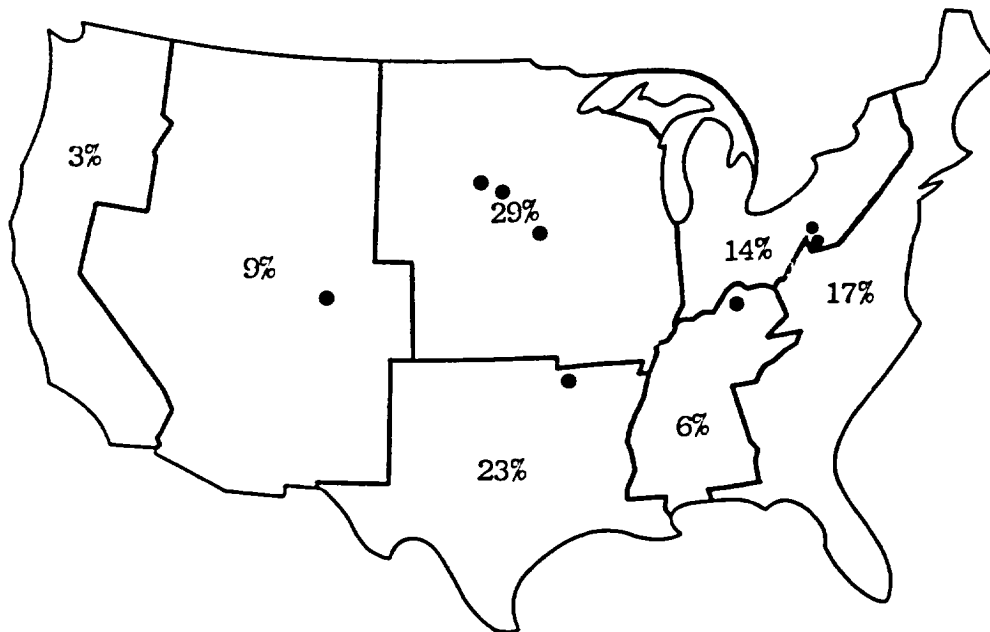
The following is a map of the United States, segmented by census regions that have been modified to outline the Great Lakes Region, which describes the geographical concentration of the 35 to 40 members of CEMA.

III. PRESSURE WASHERS . . .

F. Competitive Environment (Continued)

Exhibit 13

Geographical Concentration of Low Pressure Washer Manufacturers



Note: Dots indicate the locations of major manufacturers listed on the following page.

Eighty-six percent of these manufacturers are located outside of the Great Lakes Region. In fact, as many as two-thirds are located further away from the region than a manufacturer based in Toronto.

The difference in transportation costs is a factor for a manufacturer based on the West Coast trying to compete in the region. However, for those located in the Midwestern States, freight differentials are not viewed as being significant. A discussion of transportation matters and sample freight rates is located in Section V, p. 101.

III. PRESSURE WASHERS . . .

F. Competitive Environment (Continued)

Exhibit 14

Primary Suppliers of Low Pressure Washers to the Great Lakes Region

	<u>Recent Annual Sales¹ (Dollars In Millions)</u>	<u>Plant Locations</u>
Malsbary Manufacturing Co. (subsidiary of Carlisle Corp.)	\$20 ²	Uniontown, Pennsylvania
The Hotsy Corporation	\$20	Englewood, Colorado Humboldt, Iowa
Electro-Magic, Inc.	\$10	Paris, Kentucky
Jenny Division of Homestead Ind.	\$ 9	Coraopolis, Pennsylvania
Delco Manufacturing	\$ 9	Siloam Springs, Arkansas
Alkota Cleaning Systems, Inc.	\$ 6	Alcester, South Dakota
MI-T-M	\$ 6	Peosta, Iowa

¹Includes both U.S. domestic and export sales.

²Includes sales of water heaters and steam generators.

As previously discussed, there is a group of overseas manufacturers that have been selling products into the Great Lakes Region in recent years.

K.E.W.	West Germany
Karcher	West Germany
Gibli	Italy
Sails	Italy
Energen	Japan
Klinett	Denmark

Since the major domestic competitors all have manufacturing plants located in the Midwestern or Eastern parts of the United States, freight costs or concerns over parts availability are not major competitive issues. However, these are issues that are thought to reduce the competitiveness of overseas manufacturers.

III. PRESSURE WASHERS . . .

F. Competitive Environment (Continued)

Each of these overseas manufacturers sell in the United States using existing channels of distribution, with the exception of Karcher. Karcher is a very financially strong company and sells direct in the U.S. through a network of regional sales and service outlets. This appears to be a successful strategy for Karcher.

2. High Pressure Washers

There are 12 to 15 manufacturers, both domestic and foreign, of high pressure washers competing in the United States at the present time.

Five of these companies manufacture their own pumps.

Butterworth
Weatherford
National Liquid Blasting
Tritan
Aqua-Dyne

The other manufacturers buy their pumps from U.S., German and Japanese sources.

The dominant competitors in the United States as a whole are described in Exhibit 15.

The only overseas manufacturer to make significant in-roads into the U.S. market is West German-based WOMA. WOMA has established a sales and minor fabrication facility in New Jersey and is currently expanding its network of manufacturer's representatives.¹ WOMA is thought to be particularly strong in customized equipment.

¹WOMA has recently placed a classified ad in Agency Sales magazine looking for representatives.

III. PRESSURE WASHERS . . .

F. Competitive Environment (Continued)

Exhibit 15

Primary Suppliers of High Pressure Washers to the Great Lakes Region

	Recent Annual Sales ¹ (Dollars in Millions)	<u>Plant Locations</u>
Hydro Services, Inc.	\$10	Missouri City, Texas
Butterworth, Inc. (Subsidiary of Exxon)	\$10	Houston, Texas
Weatherford (Subsidiary of Weatherford International)	\$10	Houston, Texas
National Liquid Blasting Corp.	\$ 8	Wixom, Michigan
Tritan Corporation	\$ 4	Houston, Texas
Job-Master Sales, Inc.	\$ 4	Houston, Texas

¹Includes both domestic and export sales.

Each of these manufacturers sell products nationally and internationally. However, they each have developed a market niche that they cover particularly well. Examples include the following.

Company	Special Emphasis
Hydro Services	Oil fields, chemical plants
Job Master	Ethylene plants
Weatherford	Chemical plants, East Coast contract cleaners
National Liquid Blasting	Automotive, Great Lakes industrial

III. PRESSURE WASHERS . . .

F. Competitive Environment (Continued)

In the Great Lakes Region, the market for both standard and custom high pressure washers is dominated by one company, National Liquid Blasting Corp. (NLB). There are several reasons for this.

- NLB is headquartered in Michigan and has concentrated on this region with a company-employed sales force.
- The automotive industry requires that high pressure washer suppliers be available within 24 hours of a call for service in the event of major repair problems.

None of the other major competitors, all located in Texas, are willing to provide this service due to the travelling distance involved.

- NLB has been the only manufacturer willing to provide lease financing to contract cleaners that otherwise would not be able to afford the equipment.
- NLB is widely considered to be an innovator of new technology for solving maintenance problems using high pressure washers.

In order to compete successfully with NLB in the Great Lakes Region, a Canadian manufacturer will need to possess the following.

1. Strong technical ability.
2. A good understanding of the automotive and steel industries.
3. The ability to sell directly from the headquarters in Canada and to service within 24 hours.
4. The financial strength to risk underwriting the operations of contract cleaners with a leasing program.

III. PRESSURE WASHERS . . .

G. Regulations and Product Liability

Manufacturers of pressure washers face some newly developing situations in the United States with respect to standardization, regulation and liability risk.

In an effort to have more control over the development of anticipated government regulations, the industry is establishing its own standards for product design and safety.

1. Regulatory Environment

There currently exist no U.S. government regulations pertaining specifically to low pressure washers or high pressure washers. The agency that is most likely to become involved at some point is the U.S. Occupational Safety and Health Association (OSHA).

Speculation as to why OSHA has not yet become involved includes the following.

- The industry is too small.
- The industry is too new (high pressure washers).
- Low pressure washing is not particularly dangerous, considering that water pressure normally reduces to zero when leaks develop.

Industry experts agree that it is only a matter of time before OSHA begins regulating this industry.

Consequently, the two industry associations, CEMA and WJTA, have decided to establish a set of industry-wide product and usage standards.

CEMA

CEMA has been working for several years with Underwriters Laboratories, a private product testing company, to ratify a comprehensive set of standards pertaining to both low pressure and high pressure washers.

A copy of a full draft of these standards is available from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada. Section 2 of the draft references several existing standards which were consulted by CEMA. They include the following.

- Canadian Standards Association (CSA)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories (UL)
- American National Standards Institute (ANSI)

III. PRESSURE WASHERS . . .

G. Regulations and Product Liability (Continued)

Basically, the proposed standards establish guidelines for design and construction, performance, serviceability and convenience, markings and instructions, responsibility for proper installation, and basic specification tolerances.

As of this writing, the final draft of these standards is scheduled to be ratified September 1, 1985. For further information on these standards and their scheduled completion, contact the Chairman of the Standards Committee.

Bud Benson
L&A Products, Inc.
655 West County Road East
St. Paul, Minnesota 55112
(612) 483-8271

WJTA

In May, 1985 WJTA ratified its high pressure washer standards entitled Recommended Practices for the Use of Manually Operated High Pressure Water Jetting Equipment. These standards are intended to be used as an addendum to CEMA's standards, and are oriented toward the particular safety precautions and operational procedures required when working with pressures in excess of 2,000 p.s.i.

A copy of these standards is available from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada.

Further information regarding these standards can be obtained by contacting the Chairman of the U.S. Water Jet Technology Association.

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2. Product Liability

In the United States, manufacturers can be held liable for accidents caused by product failure, improper training on maintenance and usage, etc. In industries where there are well developed standards and established regulations, a manufacturer acting within these guidelines can operate with a certain degree of confidence that a problem won't arise.

III. PRESSURE WASHERS . . .

G. Regulations and Product Liability (Continued)

In the pressure washer industry, where industry-wide codes for product design, training and usage are not yet fully developed, and no regulations exist, manufacturers are much more susceptible to liability claims.

Domestic manufacturers of pressure washers insure themselves against product liability claims, and in some cases require that their distributors also carry this type of insurance.

Whether required to or not by their supplier, all of the distributors interviewed carried their own product liability insurance.

There are many strategies available to the manufacturer for reducing the risk of liability. Each manufacturer is faced with different circumstances and must therefore discuss the most appropriate strategy with legal counsel.

Overall, the establishment of industry-wide standards by CEMA and WJTA will serve to reduce product liability risk for manufacturers complying with these guidelines.

As for individual manufacturers, at least two rather different strategies are being used at the present time in the Great Lakes Region. These examples are from manufacturers of high pressure washers, where the risk to a manufacturer is perceived to be the greatest.

- i. Provide as little training and direction as possible beyond providing copies of a standard operating manual. This will reduce the possibility of liability caused by improper training by the agent for the manufacturer.
- ii. Provide comprehensive training to one employee at the customer's place of business. Then, require that employee to sign a statement that he will properly train all other employees in the operation of the equipment before they be allowed to use it.

As a further aid to Canadian manufacturers concerned about product liability issues, Appendix J provides a listing of commentaries on product liability published by the Machinery and Allied Products Institute (MAPI). MAPI is a trade association "engaged in research in the facilities of production, distribution, transportation, communication and commerce."

The texts of several of these commentaries are held by the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada.

III. PRESSURE WASHERS . . .

H. Market Opportunity Attractiveness

The U.S. Great Lakes Region provides a reasonably attractive market for Canadian manufacturers of pressure washers. Both low pressure and high pressure washer manufacturers have hurdles that must be overcome, but there is every reason to believe that a Canadian company can be successful in the region.

The most obvious advantage that Canadians possess at the present time is that the exchange rate allows Canadian production at less cost in U.S. dollars than can be achieved in the U.S. This advantage is only partially affected by customs duties. Transportation costs present no problem since much of Canadian industry is located closer to the Great Lakes Region than much of U.S. industry. These issues are outlined in more detail in Section V, p. 91.

The key issues in each product category are as follows.

1. Low Pressure Washers

- The market is populated with very many domestic competitors with products that are perceived to be basically similar. Since virtually every major domestic competitor is now using Italian-made pumps, Canadians ought to be able to compete effectively using the same source.
- Overseas competitors are making a great effort to penetrate the U.S. market, with technology perceived to be superior.
- Since there is little brand loyalty, the distributor plays an extremely important role in this industry.
- The key to success in this industry for a manufacturer is the ability to sell itself to high quality distributors.
- Canadian manufacturers should be able to provide distributors with attractive price and discount structures, at least in the presently existing exchange rate environment.
- Distributors will need to be convinced that equipment can be shipped on a timely basis from Canada (while distributors will stock equipment, it is often the case that out-of-stock or special equipment is required by the customer), and that parts availability will not be a problem.
- Many manufacturers are eliminating their sales forces and creating networks of manufacturers' representatives, or selling via telephone in order to cut costs. These are the recommended strategies for Canadian companies in setting up and maintaining a network of distributors.

III. PRESSURE WASHERS . . .

H. Market Opportunity Attractiveness (Continued)

- The agricultural market in the U.S. Great Lakes Region seems relatively untapped. This provides Canadian manufacturers familiar with this market segment with a ready opportunity.

2. High Pressure Washers (Standard and Custom)

- The opportunity available in the U.S. Great Lakes Region for Canadian high pressure washer manufacturers is dictated by their ability to compete with National Liquid Blasting Corp. (key requirements are outlined on page 52.)
- Canadian manufacturers will benefit in this effort by their close proximity to the region.
- As with low pressure washers, Canadian companies will need to be able to assure customers of ready parts availability.
- The sales effort will require much direct selling for both standard and custom equipment. It is recommended that this be accomplished initially with the manufacturer's in-house sales people.
- Canadian manufacturers should be ready to provide extensive training programs to users of standard equipment.
- Canadian manufacturers should keep in mind that standard equipment sales traditionally have been very low margin, with higher margins attained through the seller's parts program. Parts margins, however, are also declining at the present time.

In this type of environment, a shake-out of the weaker competitors is likely. This will further depress margins for a period of time.

- The best hope for the industry is its continued innovation and educational programs. Canadian manufacturers wishing to succeed in the United States will need to have the ability to provide innovative solutions to high pressure cleaning problems.

IV. CLEANERS

The second broad category of products included in this report is termed "cleaners."

Cleaners can be distinguished from washers by the fact that they are used primarily in production applications, rather than maintenance applications.

Pages 58 through 90 of this report describe in detail the U.S. Great Lakes market for cleaners.

A. Product Descriptions

For the purposes of this report, "cleaners" is a term used generically to classify three related groups of products. There are sufficient differences between the three groups that separate treatment and analysis is warranted.

The three distinct groups of products are referred to in the following manner.

1. Parts cleaners
2. Standard solvent degreasers and aqueous cleaners
3. Customized components used in industrial cleaning systems

Generally speaking, the distinctions between the three groups lie in the cleaning process employed, the primary user industries, the methods of distribution, and the initial cost of the equipment, all as outlined in this section.

Some U.S. manufacturers sell products in several of these product areas. Normally, however, a manufacturer will specialize in one of four product categories — parts cleaners, vapor degreasers (standard and custom), cabinet aqueous cleaners, or in-line aqueous cleaners. The competitive environment for cleaners is described in detail in Part F of this section.

1. Parts Cleaners

Parts cleaners are relatively simple devices. They are used to clean small parts individually or in batches during machine maintenance and repair work, or in manufacturing operations to aid inspection, quality control and assembly.

Parts cleaners are known by various other names in the industry.

- Parts washers
- Tub washers with hand spray
- Dunker washers
- Solvent barrel degreasers
- Dip solvent tanks

IV. CLEANERS . . .

A. Product Descriptions (Continued)

While specific product features vary from manufacturer to manufacturer, most parts cleaners consist of a solvent filled compartment for the immersion of parts and a hand spray assembly for hand cleaning applications. Certain models also make use of a mechanical or water jet agitation process to facilitate cleaning. The spent solvent is typically filtered and recirculated using a simple pumping system.

The type of solvents employed in these units are unheated alkyline solutions or more typically a petroleum-based solvent such as mineral spirits. In some cases, a chlorinated solvent may be used for particularly difficult cleaning applications.

2. Standard Solvent Degreasers and Aqueous Cleaners

For purposes of this report, two basic and distinct types of cleaning processes, solvent degreasing and aqueous cleaning, are categorized into one product group. The two processes are viewed by the market as substitutes for each other in certain applications, but for many other applications one process is superior to the other.

Solvent degreasers employ several methods of cleaning depending upon the nature of the part to be cleaned (i.e., type of substance, density of part, complexity of part) and the type of soil to be removed (i.e., soluble or non-soluble in the solvent being used). The cleaning method may include vapor immersion, vapor immersion with a spray wash, or the use of ultrasonics in conjunction with any of the other methods.

The solvents used in solvent degreasers as defined here are either chlorinated or fluorinated solvents. Chlorinated solvents have a greater ability to remove oil and are more volatile or toxic than fluorinated solvents. For this reason chlorinated solvents lend themselves more to heavy industrial applications, and it has been estimated that roughly 80 percent of solvent degreasing in the U.S. Great Lakes Region uses chlorinated solvents. In contrast, fluorinated solvents are used primarily for cleaning electronic components, where plastic is part of the substance to be cleaned. Cleaning of electronic components does not represent a significant application in the Great Lakes Region.

Aqueous cleaners clean parts using a heated (120°F to 180°F) alkaline solution in conjunction with a low pressure (20 to 25 p.s.i.) spray wash. These are cabinet-style cleaners with parts typically introduced using augers or conveyer belts. Aqueous cleaners require more floor space than solvent degreasers and normally require a drying oven. While the initial cost of an aqueous cleaner can be lower, operating costs are higher for two reasons.

- More energy is required to heat the water.
- Air drying is a very expensive process.

IV. CLEANERS . . .

A. Product Descriptions (Continued)

In the Great Lakes Region in recent years, and particularly in Michigan, the ability of state and federal agencies to detect air and water impurities caused by solvent vapor and solvent waste has been improving. Many cleaning equipment users express concern over this development, and have been taking the position that solvent-based systems will be used only when absolutely necessary. One user is in the process of converting its cleaning system from a chlorinated vapor degreasing to an aqueous cleaning process, in spite of the fact that its cleaning efficiency will decline.

Manufacturers of vapor degreasers are responding by developing better solvent recovery techniques and equipment and closed system operations to minimize vapor loss.

One technology that is becoming more popular as the industry looks for ways to reduce vapor loss is the use of freeboard chillers on vapor degreasers. Freeboard chillers are comprised of a secondary set of low-temperature refrigeration coils which are placed in the freeboard area directly above the primary coils. These low temperature coils create a cold air blanket above the vapor zone which suppresses any escaping vapors. One manufacturer reports solvent reductions from the use of freeboard chillers at 40 percent to 70 percent, depending on the temperature of the coils.

In addition to being included on new machines, freeboard chillers are also being sold as retro-fits on existing vapor degreasers.

Another technology gaining in popularity is the carbon adsorption system. This system is fitted atop the degreaser and is in effect an exhaust system utilizing carbon filters. Periodically the filters are cleaned and the solvent is recovered. While this system can recover more than 90 percent of the solvent escaping into the air, it is also very costly at between \$30 and \$50 thousand per system.

Less expensive and less effective means of reducing vapor loss include increasing the size of the freeboard (this is being done on existing units using collars), and building a roll-top cover into the degreaser.

When considering aqueous cleaning, it is necessary to consider the effects of disposal of waste water containing certain types of contaminants such as detergent and metal bits. Waste water treatment may be required if a particular locality has regulations that limit the level of contaminants present in the waste water.

IV. CLEANERS . . .

A. Product Descriptions (Continued)

All things considered, it is the consensus of the market participants that usage of aqueous cleaners is likely to remain at 40 percent of the market into the foreseeable future.

Solvent degreasers and aqueous cleaners in this group are largely standardized units. However, since this equipment is used in a production process, certain customized modifications are invariably a part of the total package. Generally speaking, the degree of customization runs parallel to the degree of automation.

Manual	Semi-Automatic	Automatic
Batch Manually loaded	Standard batch components inte- grated into an overall system	Specially-designed component in a fully automated assembly system
Standard <-----> Custom		

The third distinct group of products, customized components used in industrial cleaning systems, is characterized by the rightmost end of this spectrum.

3. Customized Components Used in Industrial Cleaning Systems

As U.S. industry is becoming more technologically advanced and automated, the cleaning industry is being required to follow suit. Historically, cleaning has been a discretionary manufacturing process. As closer machining tolerances are being required by industry, it is becoming more important than ever to produce a cleaner and more consistently clean part. In many industries, in fact, cleaning is becoming as critical as machining, thereby necessitating very sophisticated cleaning systems.

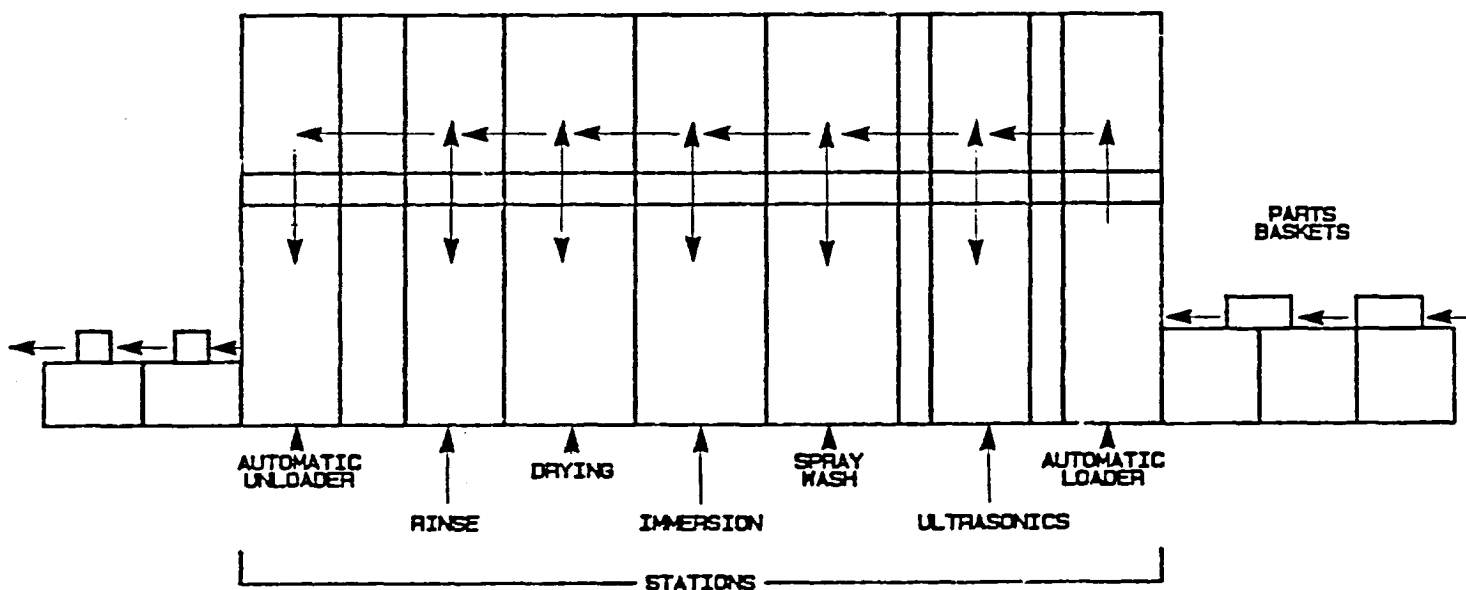
A typical customized cleaning system will incorporate several stages of different types of cleaning and drying processes, and will be fully automated. The cross section of such a system might look something like the diagram in Exhibit 16. Systems of this type are often designed and fabricated by specialized engineering firms using components supplied by several manufacturers. See Appendix Q for a partial listing of these firms.

IV. CLEANERS . . .

A. Product Descriptions (Continued)

Exhibit 16

Sample Custom Cleaning System Configuration



Fully automated industrial washing machines, which are aqueous cleaners incorporated into assembly-line operations, are considered custom equipment in this report. While manufacturers of this equipment may offer standardized configurations, the process of specifying and selling in this market is similar to that of completely customized equipment.

B. Market Size Estimates

The estimated size of the market for cleaners for 1982 is shown below. These estimates are derived from a combination of statistics published by the U.S. government and estimates made by Hayes/Hill based upon field interviews. This methodology results in what should be viewed as order-of-magnitude estimates only. This is necessitated by the fact that there is no centralized cleaning industry association or trade magazine that is in a position to compile such statistics.

IV. CLEANERS . . .

B. Market Size Estimates (Continued)

	1982	
	Total U.S. (\$MM)	Great Lakes Region (\$MM)
Parts Cleaners ¹	\$ 11 - 13	\$ 2 - 3
Solvent Degreasers	40 - 60	9 - 14
Aqueous Cleaners		
Cabinet	30 - 40	7 - 9
In-line	<u>120 - 160</u>	<u>28 - 36</u>
Total	<u>\$201 - 273</u>	<u>\$46 - 62</u>

¹Does not include volume associated with service agreements.

Source: Department of Commerce; Hayes/Hill Estimates

The consensus of market participants interviewed is that customized equipment comprises roughly 60 percent of total industry dollar volume, and perhaps 30 to 40 percent of units sold.

The estimated demand in the Great Lakes Region is based upon the proportion of total U.S. industrial activity found in the region. Minor adjustments are made in each category, reflecting the importance of a particular industry for a product group. For example, demand for parts cleaners is heavily affected by the amount of vehicle servicing done in the region.

Past and future growth in these markets is heavily dependent upon the growth of the industries which are served.

As discussed in Section I of this report, overall industrial activity in the Great Lakes Region has been relatively slow over the past decade. Certain industries, primarily the automobile industry, have been described by the market participants as "feast or famine" as regards their demand for cleaners.

At the present time, the U.S. automobile industry is on an upsurge and the demand for solvent degreasers and aqueous cleaners to this market is relatively strong.

Overall industrial activity in the region continues to be characterized by relatively slow growth, however. Accordingly, most market participants estimate the prospects for the cleaner industry in the Great Lakes Region to be stable, with little or no growth expected over the next several years.

IV. CLEANERS . . .

C. End-User Description and Requirements

In the Great Lakes Region, and for the United States as a whole, the dominant user industry for parts cleaners is the automotive servicing industry.

- Automobile dealerships
- Service stations qualified for automotive repair and service work
- Automotive repair shops.

This segment comprises roughly 70 percent of total demand in the Great Lakes Region. Other significant users include remanufacturers of machines and engines, machine shops, fleet maintenance shops, and the broad category of in-plant industrial machine and maintenance shops.

Accordingly, the market for parts cleaners is segmented by domestic manufacturers into two groups.

1. Automotive service
2. Industrial

This distinction is made primarily because each of these segments is reached through different channels of distribution, as described in Part D of this section. Also, manufacturers typically attempt to set up a dual set of manufacturers' representatives, each covering one of the segments within the same region.

Roughly 40 percent of the automotive service segment, and 20 to 30 percent of the industrial segment uses parts cleaners that are provided as part of an overall service contract. One company, Safety-Kleen Corp., dominates the market for this type of service nationwide. There are several small regional companies providing this service as well. (Many of these in the Great Lakes Region are managed by ex-employees of Safety-Kleen.) Part F of this section discusses Safety-Kleen in detail.

A typical parts cleaner service contract provides for three things.

1. The use (but not ownership) of a parts cleaner
2. The periodic replacement and disposal of spent cleaning solvents on a pre-scheduled basis
3. Required maintenance of the parts cleaner

This service costs the user on average \$38 per service call. The great majority of programs are set up for monthly servicing, although this can vary depending upon usage.

Annual costs, then, for a service contract including a parts cleaner, chemicals, maintenance and disposal of spent solvent average \$456.

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

When making a decision whether to buy or "rent" under a service contract, a potential customer weighs this annual cost against several other factors.

- Cost of a similar parts cleaner
- Existing and expected solvent prices
- Type of solvent required, and capacity of cleaner
- Cost and inconvenience of solvent replacement
- Local solvent disposal restrictions

Those study respondents that use a service contract, do so for one reason only -- convenience.

Those that own their parts cleaners do so for several reasons.

- More control over solvent usage, which is becoming more and more costly
- Feeling that service contract charges are too high
- Ability to perform own maintenance, and replacement parts availability not a problem
- Parts too large to fit in the tub (i.e., transmissions)
- Already use a waste disposal company for other purposes

Of those respondents in both the automotive and industrial segments that are presently "renting" parts cleaners, the consensus is that they will never give up the convenience of this type of program.

In order for a Canadian manufacturer to approach this one-third portion of the market, some type of service agreement would need to be offered. Part F outlines another potential strategy -- the manufacture of parts cleaners for use by a company such as Safety-Kleen in its service program.

In the Great Lakes Region, the automotive original equipment manufacturers and automotive industry suppliers as a group provide the largest identifiable user industries for both standard and customized solvent degreasers and aqueous cleaners. In addition, this region has a large number of metal fabrication and machining operations within a diverse group of industries (outside of direct automotive supply) that use this equipment.

The electronic component manufacturing industry is a significant user of this equipment in the U.S. as a whole. However, as pointed out earlier, this segment is not at the present time a primary market in the Great Lakes Region.

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

Automobile manufacturers are all very much alike when it comes to specifying and purchasing this type of equipment. Section V of this report includes an extensive description of the special requirements that automobile manufacturers place upon equipment suppliers, and outlines the most effective way of selling to these customers.

The primary users of cleaners and their relative importance in the Great Lakes Region are summarized here.

Parts Cleaners		Solvent Degreasers and Aqueous Cleaners (Standard and Custom)	
70%	<ul style="list-style-type: none"> ● Automotive <ul style="list-style-type: none"> - Dealerships - Repair shops - Service stations performing repairs 	<ul style="list-style-type: none"> ● Automobile manufacturers ● Automobile component suppliers 	60%
30%	<ul style="list-style-type: none"> ● Industrial <ul style="list-style-type: none"> - Remanufacturers - Machine shops - Industrial plants - Fleet operations 	<ul style="list-style-type: none"> ● Other industrial plants performing <ul style="list-style-type: none"> - stamping - coating and plating ● Electronics 	30%
			10%

Examples of specific needs and buying patterns of representative end-users of both parts cleaners and solvent degreasers and aqueous cleaners are provided on the following pages.

1. Parts Cleaners

Because of the durability of this type of equipment, parts cleaners are purchased very infrequently by most users. As a result, there is no well-established pattern of identifying product sources and of making a buying decision.

The factors considered by a user when deciding whether to "rent" or to buy have previously been discussed. It is less clear how a user might decide between product brands once a buy decision has been made.

The method by which a user makes a product decision is mainly dictated by (1) the size and sophistication of the user, and (2) the selling efforts directed toward the user.

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

Large industrial users, and even the larger automobile dealerships, are called upon periodically by direct representatives of the manufacturers. They come to expect this and may not consider a brand if a personal contact is not made.

Smaller users are more inclined simply to contact their auto parts supplier, or mill supplier, when considering the purchase of a parts cleaner.

The importance of price in the purchase decision depends upon the complexity of the cleaning problem. For very standard jobs, price is without question the overriding factor that is considered by study respondents. The automotive service segment is sold to primarily on the basis of price. When faced with a "rent" or buy decision, the jobber salesman will emphasize the economic benefits of buying.

The following charts outline the purchase process and decision criteria used by a representative automobile service center and an industrial firm.

	AUTOMOTIVE DEALERSHIP SERVICE CENTER
Requirements	14 parts cleaners
Application	Cleaning parts during repair work
Sales Contact	Service Manager
Purchase Process	<ul style="list-style-type: none"> ● Require one cleaner for every two mechanics. ● Replace on average every ten years. ● Determine size required and cleaning requirements.
Important Buying Criteria	<ol style="list-style-type: none"> 1. Price 2. Ability of seller to show shortcomings of existing equipment 3. Ability to obtain maintenance parts
Methods by Which Suppliers are Identified	<p>Contacts with other dealerships</p> <p>Personal approach from manufacturers' representative</p>

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

Based upon the experience of study respondents automobile service centers require, on average, one parts cleaner for every two mechanics.

Both the automotive service segment and the industrial segment stress the importance of parts availability when considering a purchase. This is less critical in larger shops that have several parts cleaners available at one time.

Industrial users such as the following engine remanufacturer tend to be more concerned about a seller's ability to match a product with a cleaning need. Cleaning problems are less standard, and therefore requirements need to be more clearly defined.

	ENGINE REMANUFACTURER
Requirements	Parts cleaners Tumblers (metal and solvent)
Application	Cleaning used parts
Sales Contact	Owner Buyer Shop Manager
Purchase Process	<ul style="list-style-type: none"> ● Requirements are identified by owner. ● Using established list of past vendors, and limited research on new vendors, buyer asks for bids.
Important Buying Criteria	<ol style="list-style-type: none"> 1. Salesmen and manufacturers' representatives who know their product intimately 2. Compliance with EPA and OSHA requirements¹ 3. Reputation for timely service and replacement parts 4. Price
Methods by Which Suppliers are Identified	Trade Shows Trade Association Referrals

¹Some manufacturers have marked their products "OSHA Approved." This should not be done, however, since OSHA does not approve products.

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

2. Solvent Degreasers and Aqueous Cleaners (Standard and Custom)

In the Great Lakes Region, this group of products is purchased by automobile manufacturers, automotive industry suppliers and a fragmented group of manufacturers and job shops producing castings, stampings, machined parts and tools.

While automobile companies purchase to some degree all of the products described in this section, their greatest demand is for in-line aqueous cleaners. This is due in part to an extreme sensitivity to the environmental concerns associated with using solvents, as discussed elsewhere in this report. Vapor degreasers are used, for the most part, when that is the only available method of cleaning. Applications for vapor degreasers are found primarily in automobile paint shops and body assembly.

In applications that require a chemical treatment of the metal surface, aqueous cleaning is the most viable process available. Only aqueous cleaning will allow the introduction of special chemicals into the cleaning process.

A representative example of the purchase by an automobile manufacturer of an in-line aqueous cleaning system is shown in the following chart. Section V outlines in more detail the requirements in selling to the automotive industry.

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

	AUTOMOBILE MANUFACTURER
Requirements	Custom, dedicated aqueous cleaning system
Application	In-line parts cleaning
Sales Contact	Corporate Buyer Engineering Staff
Purchase Process	<ul style="list-style-type: none"> ● Receives specifications from engineering on what is to be accomplished. ● Identifies parameters to be used in the design of the product. ● Identifies vendors which will work closely with engineers. ● Vendors are subject to various stages of design approval.
Important Buying Criteria	<ol style="list-style-type: none"> 1. Technical depth of vendor 2. Expected longevity of vendor, well beyond warranty period 3. Research and development capabilities, for future use
Methods by Which Suppliers are Identified	Direct contact by manufacturers' representatives and salesmen

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

The primary purchaser of completely automated cleaning equipment in the Great Lakes Region is the automobile industry. Typically, this industry requires the latest technology and design compatibility with existing automated equipment.

Generally speaking, for non-automotive companies, if a user can satisfy its cleaning requirements with a standard or modified standard piece of equipment, then it will do so. This, of course, is a less expensive way of satisfying requirements in terms of both engineering and purchasing time, and in the basic cost of the equipment.

Other factors also are taken into account when a user specifies equipment requirements. For example, a job shop that manufactures different types of piece parts on a per job basis will be most concerned with two things.

1. Flexibility of the equipment. The equipment needs to be useable for cleaning different sized parts as well as different types of soils.
2. Cost of the equipment. Job shops generally will not commit funds for a highly automated piece of equipment because the application may not exist the following year.

While equipment needs vary among users, many similarities exist regarding purchasing process, requirements placed upon the seller, and identification of manufacturers.

A good example of the purchase of a more standardized piece of equipment is the purchase of a batch degreaser by an automobile parts manufacturer, as outlined on the following page.

IV. CLEANERS . . .

C. End-User Description and Requirements (Continued)

	AUTOMOTIVE PARTS MANUFACTURER
Requirements	Batch degreasers
Application	Removal of stamping, grinding, cutting oils
Sales Contact(s)	Engineering Department Purchasing Manager
Purchase Process	<ul style="list-style-type: none"> ● Specifications created by Engineering group; considers recommendations from a knowledgeable representative ● Buyer undertakes bid process ● Vendors' equipment is observed in operation at a user's facility
Important Buying Criteria	<ol style="list-style-type: none"> 1. Degree to which equipment fits requirements 2. Recommendation based upon cleaning a sample part and making a soil test 3. Ability to service after sale
Methods by Which Suppliers are Identified	Direct mail ¹ Trade publications

¹The importance of keeping an up-to-date mailing list is stressed here.

IV. CLEANERS . . .

D. Sales and Distribution

The sale and distribution of parts cleaners differs considerably from that of solvent degreasers and aqueous cleaners. Some similarities may exist for those manufacturers with product offerings in both categories. But generally speaking, the markets for parts cleaners are different than for solvent degreasers and aqueous cleaners.

Therefore, the discussion of sales and distribution is handled separately for each.

1. Parts Cleaners

As outlined previously, manufacturers selling parts cleaners make use of manufacturers' representatives almost exclusively. Representatives either specialize in the automotive service segment or the industrial segment, or cover both segments. How this is handled will depend upon the volume of business in a particular area.

Manufacturers' representatives cover territories that include no more than two states, and often just a portion of one state. In the Great Lakes Region a typical organization would look something like this.

One representative in each of . . .	{	Indiana Michigan and Northern Ohio Southern Ohio Western Pennsylvania Upper New York State
--	---	---

Manufacturers' representatives are paid a commission, ranging from eight to ten percent of the value of the sale to the distributor. The exact level required depends primarily on the amount of travel required by the representative, and the volume of business anticipated.

To identify potential representatives for your products that cater to the automotive supply distribution system and to mill supply distributors, several very good directories are available. Since no one directory is ever complete, it is advisable to use more than one for this effort.

Appendix O provides the names and addresses of the directories that would be most appropriate. Directories typically provide alphabetical, geographic and product category listings to help the user identify potential representatives. A listing of the product categories used by two directories is provided in Appendix I.

IV. CLEANERS . . .

D. Sales and Distribution (Continued)

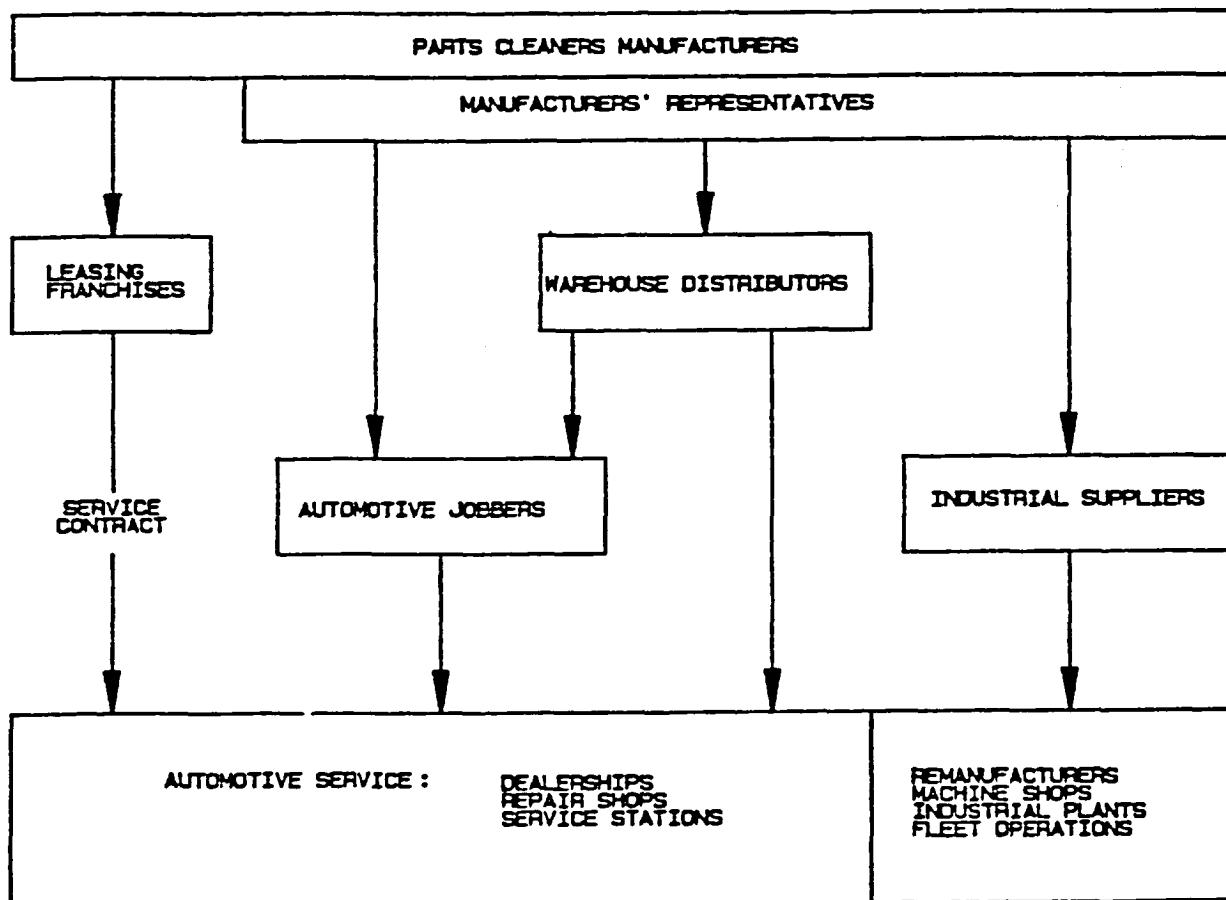
Identifying and attracting a manufacturers' representative with the right qualifications is never an easy task, and requires considerable research, legwork and interviewing. Discussions on how best to approach this task are available through various publications including the directories cited in the Appendix. To get started, a simplified discussion of this topic from MacRae's Verified Directory of Manufacturers' Representatives is reproduced in Appendix I.

Appendix I also provides a listing of selected manufacturers' representatives in the Great Lakes Region for reaching either automotive service or industrial channels.

The diagram in Exhibit 17 illustrates the various channels of distribution that are used to market parts cleaners in the Great Lakes Region.

EXHIBIT 17

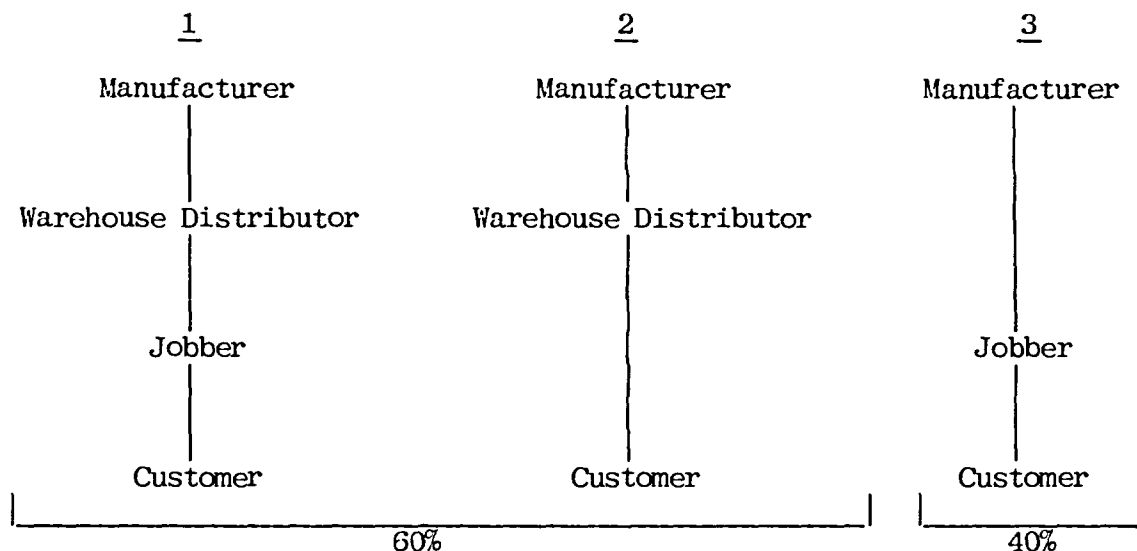
SIMPLIFIED DIAGRAM OF SALES AND DISTRIBUTION OF PARTS CLEANERS



IV. CLEANERS . . .

D. Sales and Distribution (Continued)

Another way of illustrating the three channels through which a manufacturer might sell to the automotive service segment is the following.



In the Great Lakes Region, roughly 60 percent of volume is sold using warehouse distributors, and 40 percent is sold directly from the manufacturer to the jobber.

The warehouse distributor plays a role that is highly valued by most manufacturers' representatives contacted, but the manufacturer pays for this service through the additional channel discounts required. The benefits to using a warehouse distributor include the following.

- Larger volume of purchases
- Fewer collection problems
- Warehouse distributor takes responsibility for the jobber network

Warehouse distributors and jobbers will carry a line based upon several factors. Since all of the major manufacturers carry both an inexpensive, lower quality line as well as a higher quality line, quality is not normally a major consideration. Among the factors considered are the following.

IV. CLEANERS . . .

D. Sales and Distribution (Continued)

- Timely product shipments and parts availability¹
- Technical and service support from the manufacturer's agent
- Ability to meet OSHA safety specifications

Warehouse distributors and jobbers normally field a sales force that will show product literature for new products, such as a new line of parts cleaners. Also, these channel members may publish catalogs or include fliers in monthly billing statements in order to promote products.

Appendices H and I provide representative listings, taken from Jobber Topics, of automotive warehouse distributors and jobbers located in the Great Lakes Region.

Discount levels paid to channel members vary by manufacturer, competitive environment and volume of activity. A lower discount will be paid through the channels on a product with high volume in a price sensitive market. Based upon a consensus of manufacturers, manufacturers' representatives, and channel members, the schedule of discounts in Exhibit 18 is representative of the average in the Great Lakes Region.

Exhibit 18

Typical Parts Cleaner Discount Schedule

	<u>Automotive Service Channels*</u>			<u>Industrial</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>Channel</u>
Warehouse Distributor	30-40%	30-40%	Not Applicable	Not Applicable
Jobber or Mill Supplier	20 - 25%	Not Applicable	20 - 25%	20-25%

*Described on page 75.

¹Most distributors will stock the more important replacement parts which include pumps, safety systems, and cover hinges (an OSHA requirement).

IV. CLEANERS . . .

D. Sales and Distribution (Continued)

2. Solvent Degreasers and Aqueous Cleaners (Standard and Custom)

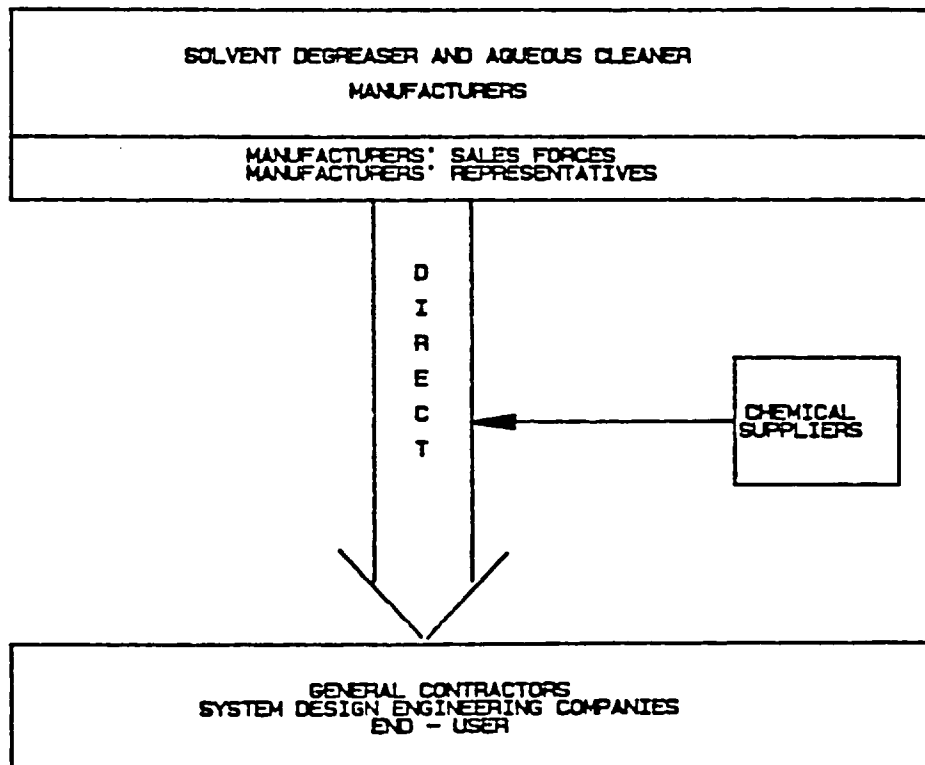
The distribution of solvent degreasers and aqueous cleaners is very straightforward in the U.S. Great Lakes Region. Unlike parts cleaners, this is not a distribution-oriented business. The sale is controlled completely by the manufacturer or the manufacturers' representative.

This simple scheme of product flow to market is diagrammed in Exhibit 19. Chemical suppliers are shown in the diagram for two reasons.

- Chemical and solvent suppliers frequently receive equipment inquiries from their customers. When this happens, the supplier will contact the appropriate manufacturers until it finds one that is willing to pay a referral fee for the lead.
- Several chemical suppliers are set up as non-stocking distributors for the standard equipment of one major manufacturer in the region. These suppliers receive referral fees on custom orders. This method of distribution accounts for only five percent of this manufacturer's sales in the region.

EXHIBIT 19

SIMPLIFIED DIAGRAM OF SALES AND DISTRIBUTION OF SOLVENT DEGREASERS AND AQUEOUS CLEANERS - STANDARD AND CUSTOM



IV. CLEANERS . . .

D. Sales and Distribution (Continued)

The extent to which a manufacturer utilizes manufacturers' representatives in lieu of an internal sales organization in a given area depends upon the size of the manufacturer and its headquarters location.

For example, the major in-line aqueous cleaner manufacturers typically structure their sales effort using regional sales managers. These managers may be responsible for a number of manufacturers' representatives in their particular region.

In the region where the company's headquarters is located, the selling effort is typically made directly from this office.

In the Great Lakes Region, the largest market for in-line aqueous cleaners is the automotive industry. As shown in Exhibit 21 on Page 84, the primary suppliers of this equipment have headquarters located within this region.

In-line aqueous cleaners are normally systems-oriented. That is, these products are sold in most cases as part of customized systems. This type of sale is almost never handled by a manufacturers' representative.

The sales of such systems, as well as customized solvent degreasing equipment, requires close interaction between the supplier's technicians and the customer's engineering staff. Canadian manufacturers wishing to sell systems of this type in the U.S. Great Lakes region will need to take these special requirements into account.

Manufacturers' representatives typically require an average commission of 10 to 15 percent when selling solvent degreasers and aqueous cleaners. One of the highest commission rates reported is 17 percent which is currently being offered by one of the larger ultrasonic vapor degreaser manufacturers.

Many different types of commission rate structures are in place at the present time. One manufacturer pays a graduated rate with a high of 15 percent for smaller sales, and a low of 5 percent for very large sales. Manufacturers will often pay a higher rate for relatively low value standard equipment, and a lower rate for custom referrals to the headquarters office.

The relatively high rate of commission in this industry is indicative of the fact that a single sale of a solvent degreaser or aqueous cleaner is often a time consuming process. In addition, this is a relatively low volume industry.

Identifying the appropriate manufacturers' representatives to handle these product lines is substantially more difficult than for parts cleaners. A number of suggestions are offered here to provide more direction to this process.

IV. CLEANERS . . .

D. Sales and Distribution (Continued)

- Decide which industry you wish to target with your product line. The most important decision to make is whether or not you wish to sell to the automobile manufacturers. If so, it is necessary to identify and approach representatives that concentrate on this industry.

Effectively selling equipment with this level of sophistication to automobile manufacturers is generally considered to be a full time job.

- Identify those representatives that currently carry a similar but not necessarily competing line of cleaning equipment.

For example, a manufacturer of non-ultrasonic vapor degreasers should contact representatives that are known to carry a line of ultrasonic or aqueous equipment. Similarly, a manufacturer of aqueous cleaning equipment may wish to develop a list of representatives carrying vapor degreasers.

A select listing of such representatives and the product lines they currently represent is located in Appendix I.

Existing Great Lakes Region competitors feel that this strategy, and/or the one following, are the best and perhaps the only realistic ways of entering this market.
--

- Develop a relationship with a U.S. manufacturer in a similar but not directly competing line. This will give the Canadian manufacturer immediate access to a network of salesmen and manufacturers' representatives that is already in place. It could also allow the U.S. manufacturer to make better use of its existing sales network.

Also, quality manufacturers' representatives normally prefer to represent established manufacturers that have developed a positive reputation in the marketplace. It may be difficult for a little-known Canadian manufacturer to attract quality representatives without help from an established domestic company.

There are many ways in which a relationship could be structured. For example, the Canadian company could license its technology or process to a U.S. manufacturer, or it could provide manufactured products for sale under the U.S. trade name.

IV. CLEANERS . . .

D. Sales and Distribution (Continued)

While no domestic companies have been solicited in this regard for this report by Hayes/Hill, several have expressed unsolicited interest in developing this type of relationship. Specific company names and individual contacts may be obtained from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada.

E. Market Support Requirements

Product promotion and technical support is expected of manufacturers of parts cleaners and solvent degreasers and aqueous cleaners.

1. Parts Cleaners

Parts cleaner manufacturers promote their products using any or all of the following methods.

- Automotive and industrial buyers guides (i.e., Thomas' Register)
- Trade publications (in some cases using response cards)
- Promotional literature provided to channel members

Appendix O lists the buyers guides and trade publications cited as being most useful for promoting parts cleaners.

The majority of parts cleaner distribution channel members contacted stress the importance of being able to count on technical and service support from the manufacturer. One domestic manufacturer has a toll free telephone number that can be used to talk with service engineers at company headquarters.

In addition, product availability is cited as a major concern among distributors of parts cleaners. The majority of distributors give a problem with availability as the number one reason for switching suppliers.

Cleaners are normally quoted and shipped F.O.B. factory. Manufacturers will typically prepay this freight and bill the customer later so that the customer is not faced with a cash collection when shipment is made. Canadian manufacturers shipping to the United States have several matters to consider concerning customs and transportation. These matters are discussed in Section V, P. 91.

IV. CLEANERS . . .

E. Market Support Requirements (Continued)

2. Solvent Degreasers and Aqueous Cleaners (Standard and Custom)

Promotion of solvent degreasers and aqueous cleaners primarily involves much face-to-face contact with the customer. This effort takes a variety of forms for those manufacturers contacted for this study.

- Frequent visits to purchasing and engineering departments of targeted companies
- Extensive trade show participation
- Invitations for customer engineers to visit plants where your equipment is operating (normally paid for by the customer)
- An equipment maintenance program for smaller customers lacking in-house maintenance capability

The trade shows cited by manufacturers as being most beneficial are listed in Appendix N.

Advertising in trade publications is considered a must in the industry. General industry advertising such as Thomas' Register or the U.S. Industrial Directory are considered among the best generators of leads for these products.

Trade publications cited by study respondents are included in Appendix O.

Manufacturers of solvent degreasers and aqueous cleaners normally pass along the warranty of their component suppliers, as well as provide their own. These various warranty programs range anywhere from 90 days to one year.

In the Great Lakes Region, the market for parts cleaners is dominated by four manufacturers. These companies are listed in Exhibit 20.

IV. CLEANERS . . .

E. Market Support Requirements (Continued)

Exhibit 20

Primary Suppliers of Parts Cleaners to the Great Lakes Region

<u>Parts Cleaners</u>	<u>Recent Annual Sales¹ (Dollars In Millions)</u>	<u>Plant Locations</u>
Safety-Kleen ² Elgin, Illinois	\$185 ³	New Berlin, Wisconsin
Kleer-Flo Company ^{2, 4}	\$ 3	Hopkins, Minnesota
Graymills Corporation ²	\$ 2	Chicago, Illinois
Build-All Corporation ²	\$ 1	Menomonee Falls, Wisconsin

¹Includes both U.S. domestic and export sales.

²Carries a line of chemicals.

³Value of parts cleaners placed into service each year is estimated to be between \$5 and \$10 million.

⁴Also manufactures a line of aqueous cleaners.

F. Competitive Environment

As previously stated, Safety-Kleen Corp. commands about 40 percent of the automotive market and 20 to 30 percent of the industrial market for parts cleaners. Industry analysts feel that Safety-Kleen has more or less reached its peak in terms of penetrating the parts cleaner market. By the same token, as pointed out previously, those companies that currently use this service are not inclined to switch to ownership. Therefore, Safety-Kleen is likely to maintain its market share for the foreseeable future.

Approximately 85 percent of Safety-Kleen's total revenues are generated by its worldwide parts cleaner service. Safety-Kleen competes directly in the United States (92 percent of revenues), Canada and the United Kingdom, and through licensing arrangements in Australia, New Zealand and West Germany.

The vast majority of the revenues generated by Safety-Kleen's parts cleaning service result from its chemical recycling and servicing program. Its total number of service representatives is in excess of 1,100, servicing as many as 300,000 automotive and industrial accounts.

The actual value of new or replacement part cleaners placed into service in the United States each year by Safety-Kleen is estimated to be between \$5 and \$10 million.

IV. CLEANERS . . .

F. Competitive Environment (Continued)

Safety-Kleen's greatest strength is that it is able to cover many small accounts very effectively with its huge fleet of service vehicles and its organization of service representatives. The Company now operates six solvent recycling centers across the U.S. Servicing the Great Lakes Region are centers in Elgin, Illinois and Hebron, Ohio.

Safety-Kleen's force of service representatives also act as sales representatives, eliminating the need to sell through the multi-tiered channels of distribution described in a previous section. Because these representatives are well trained to sell this service and are constantly in the field, they can be more effective than traditional channels in picking up leads. In areas where independent waste disposal services are not available, Safety-Kleen is particularly effective in selling its product.

In its plant in Wisconsin, Safety-Kleen assembles and paints parts cleaners using components supplied from outside sources. Safety-Kleen views itself as a marketing company, and would prefer not manufacturing if economically feasible.

Safety-Kleen has a definite interest in speaking with companies about outsourcing all of its manufacturing.

Appendix P contains pictures and simple diagrams of Safety-Kleen's product line.

The name of the appropriate contact at Safety-Kleen with which to discuss this matter is available from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada.

Each of the manufacturers listed here carries its own line of chemicals for use in its line of parts cleaning equipment. Unlike Safety-Kleen, however, the manufacture and sale of parts cleaning equipment is the primary source of revenues for the other major suppliers.

Build-All is perceived to have the highest quality cleaner and also the highest price structure. Build-All benefits from a patented solvent filtration system that results in greater solvent utilization.

It is estimated that two manufacturers — Detrex Chemical Industries and Baron-Blakeslee — control as much as 75 to 80 percent of the market for vapor degreasers in the Great Lakes Region. These two companies, along with Chicago-based Phillips Manufacturing Company, are well established in the region as quality manufacturers. With quality accepted as a given by the marketplace, standard equipment is sold by these manufacturers primarily on the basis of price.

Several manufacturers bring to the market a relatively broad line of products including vapor degreasers, aqueous cleaners, and ultrasonics, either batch, cabinet-style or in-line. However, most manufacturers will specialize in a particular type of process or system.

IV. CLEANERS . . .

F. Competitive Environment (Continued)

In addition, most manufacturers include in their lines products peripheral to the cleaning process such as solvent recovery sills, carbon adsorption systems, drying ovens, conveyor systems, and chemicals.

The following listing gives some idea of the locations, sizes and specializations of the more prominent competitors in the Great Lakes Region.

Cabinet-style aqueous cleaners are manufactured by very many small, regionally-oriented companies. Estimates range as high as 200 manufacturers competing in this line of business. Those identified in Exhibit 21 are cited by study respondents as prominent suppliers to the Great Lakes Region.

Exhibit 21

Primary Suppliers of Solvent Degreasers and Aqueous Cleaners to the Great Lakes Region

<u>Solvent Degreasers</u>	Recent Annual Sales ¹ (Dollars In Millions)	<u>Plant Locations</u>
Detrex Chemical Industries, Inc. ²	\$70 ³	Southfield, Michigan
Branson Ultrasonics ⁴ (Subsidiary of Emerson Electric)	\$50	Shelton, Connecticut Newtown, Connecticut
Baron-Blakeslee Inc. ^{2, 4} (Subsidiary of Purex Ind., Inc.)	\$15	Chicago, Illinois Los Angeles, California
Westinghouse - Industrial Equipment Division ⁴	\$15	Sykesville, Maryland
Phillips Manufacturing Company	\$ 3	Chicago, Illinois
<u>Aqueous Cleaners</u>		
Taylor & Gaskin	\$25	Detroit, Michigan
Centri-Spray	\$20	Livonia, Michigan
Ransohoff (Subsidiary of F. J. Lamb Co.)	\$ 7	Warren, Michigan
Industrial Metal Fabricators	\$ 5	Detroit, Michigan
Continental Equipment Corp.	\$ 2	Milwaukee, Wisconsin
Metal Wash Machinery Corp.	\$ 2	Elizabeth, New Jersey
Final Phase	\$ 1	Mt. Clemens, Michigan

¹Includes both U.S. domestic and export sales.

²Carries a line of chemicals.

³Roughly \$15MM consists of equipment sales.

⁴Primary product line incorporates ultrasonics.

IV. CLEANERS . . .

G. Regulations and Requirements

Several federal, state and local regulations apply to users and, in some cases, manufacturers of cleaners. In no cases, however, are government approvals required of manufacturers before they may sell products in the region. In addition, certain standard industrial codes need to be met in order to sell to certain end-users.

1. Government Regulations

Several federal and state regulations pertain to the cleaner industry. These regulations are administered by two agencies.

i. Environmental Protection Agency (EPA)

Responsible for administering major environmental laws that pertain to controlling and abating air, water, and noise pollution and regulating the use or disposal of toxic substances and solid waste.

ii. Occupational Safety and Health Administration (OSHA)

Responsible for establishing health and safety standards and for monitoring accidents, injuries and fatalities in the workplace.

Both the EPA and OSHA were established in 1970. Offices of these agencies are located at both the federal and state levels. In addition, certain municipalities may have ordinances which include additional or more stringent regulations.

EPA

The trend has been for the federal EPA to delegate the administration of laws to the states, with the federal EPA in the role of overseer. Also, certain states have their own state EPA plans. These state plans have been approved by the federal EPA and are at least as stringent as the federal EPA plan. In many cases, the federal plan is taken almost verbatim when creating the state plan. Several states, including Michigan, have rewritten their standards so that they are more stringent than the federal plan. "State plan" states have the full effect of the law behind them. These states have jurisdiction over municipalities and cities, in contrast to "federal plan" states that do not. In the Great Lakes Region, Michigan and Indiana have state plans, while Ohio, Pennsylvania, and New York use the federal plan.

The EPA monitors companies that are involved in one of four areas.

- Emitting pollution into the air or water.
- Disposing, transporting or storing toxic substances or solid waste.

IV. CLEANERS . . .

G. Regulations and Requirements (Continued)

- Manufacturing or applying herbicides and pesticides.
- Causing or cleaning up chemical or oil spills.

The EPA administers three laws that are of relevance to users and manufacturers of cleaning equipment.

- i. The Clean Water Act, which regulates the discharge of toxics and waste in waterways.
- ii. The Resource Conservation and Recovery Act, which regulates the generation and disposal of hazardous waste.
- iii. The Clean Air Act, which regulates the emission of toxic vapors into the atmosphere.

The first two Acts do not apply specifically to the manufacture of cleaning equipment, but rather to the spent solvent and wastewater generated by that equipment. These Acts are relevant to manufacturers to the extent that users are affected by concern over these laws when deciding what type of system to install.

- Parts cleaner users use service companies like Safety-Kleen in part over concern about disposal of spent solvent.
- As previously discussed, users of solvent degreasers and aqueous cleaners are factoring environmental concerns into their purchase decision to a greater extent than ever.

By contrast, The Clean Air Act includes specific requirements pertaining to the design of cleaners. Of the states included in the Great Lakes Region, Michigan is considered to have the most stringent regulations.

The Michigan regulations that apply are Parts 6 and 7 of the Michigan Air Pollution Control Commission's General Rules. These regulations are available from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada.

The most applicable Rules contained in these Parts are the following.

- i. Part 6. - Emission Limitations and Prohibitions - Existing Sources of Volatile Organic Compound Emissions.
 - Rule 611 - Existing Cold Cleaners
 - Rule 612 - Existing Open Top Vapor Degreasers
 - Rule 613 - Existing Conveyers and Cold Cleaners
 - Rule 614 - Existing Conveyers and Vapor Degreasers

IV. CLEANERS . . .

G. Regulations and Requirements (Continued)

ii. Part 7. - Emission Limitations and Prohibitions - New Sources of Volatile Organic Compound Emissions.

Rule 702 - General Provision for New Sources of Volatile Organic Compound Emissions

To obtain copies of regulations for other states, as well as interpretations of these regulations, a Canadian manufacturer should contact the appropriate EPA office within the state. Appendix R lists the EPA offices and appropriate contacts for each of the five states in the Great Lakes Region.

OSHA

As with the EPA, some states are covered under the federal OSHA plan and others have developed their own state plans. Again, in the Great Lakes Region, Michigan and Indiana have state plans while Ohio, New York, and Pennsylvania use the federal plan.

This distinction is largely irrelevant, however, because all of the plans in the region are virtually identical.

The OSHA standards in force in Indiana are available from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada. These standards apply directly to the design and manufacture of cleaners. There are essentially two sets of regulations most applicable to cleaners.

- 1910.108 - Dip Tanks Containing Flammable or Combustible Liquids
- 1910.94 - Occupational Health and Environmental Control - Ventilation

Appendix R lists the OSHA offices and contacts for each state in the Great Lakes Region.

2. Special Industry Codes

Certain end-users may require suppliers of in-plant equipment to meet specifications which include one of any number of general industrial codes.

Inclusion of these codes in a list of specifications is often required by the end-user's insurance company.

One such set of codes that has some application to cleaners has been developed by Factory Mutual Engineering and Research Corporation. Two levels of compliance with Factory Mutual (FM) standards are possible.

IV. CLEANERS . . .

G. Regulations and Requirements (Continued)

- FM Approval. The product has been examined by Factory Mutual engineers and found to satisfy the criteria for approval in any use.
- FM Acceptance. The product, having already been installed at a specific location, is suitable for its intended use at that location.

Companies insured in the Factory Mutual System of insurance underwriters will need to restrict their purchases to equipment with either FM Approval or FM Acceptance.

Factory Mutual publishes a Guide which lists all FM Approved companies and products. For vapor degreasers, approval standards have not yet been developed. Therefore, FM Acceptance must be obtained upon installation of the equipment at a specific location.

Parts cleaners which use flammable solvents can be approved by Factory Mutual. At the present time, two parts cleaner manufacturers — Graymills and Safety-Kleen — have FM Approved products.

In order to obtain approval in a given product category, a manufacturer must provide Factory Mutual with copies of (1) its trade advertisements, and (2) either its product literature or technical drawings. This information should be sent to the following address.

Dallas R. Knight
Manager, Fuel Section
Factory Mutual Engineering and Research Corp.
P.O. Box 688
Norwood, Massachusetts 02062

Appendix L provides a more extensive description of Factory Mutual approval and testing services, and includes a reproduction of the Guide section on cleaning tanks (parts cleaners).

The entire Factory Mutual Approval Guide is on hand at the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada.

IV. CLEANERS . . .

H. Market Opportunity Attractiveness

The U.S. Great Lakes Region can provide an attractive market for Canadian manufacturers of cleaners that wish to participate.

Competition in the various market segments is based primarily upon price for those manufacturers meeting minimum quality and service standards. It is relatively easy to participate in the parts cleaning industry because of the widespread opportunities for distribution. It will take much more effort to participate in the solvent degreaser and aqueous cleaner industry because a track record of experience needs to be established.

Once a Canadian manufacturer is accepted by potential customers as a viable participant, it should be able to compete effectively on price. Section V of this report outlines the various factors that will affect a Canadian manufacturer's price levels in the U.S. Great Lakes Region -- customs duties, transportation costs and exchange rates.

Key issues are outlined in the following paragraphs.

1. Parts Cleaners

- Relatively few parts cleaner manufacturers compete in the U.S. Great Lakes Region. At \$2 to \$3 million in estimated annual sales, the market is not large enough to support many competitors. A sizeable percentage of the market "rents" parts cleaners under service agreements.
- If a Canadian manufacturer elects to sell parts cleaners in the Great Lakes Region, many opportunities for distribution exist. However, since the market is not growing, a manufacturer will need to show distributors and end-users that its product is superior to or lower priced than existing brands.
- Support requirements to channels of distribution are very basic. A Canadian manufacturer needs to be able to assure its distributors that product availability will not be a problem. Technical and service support are expected.
- A Canadian manufacturer will not be able to compete with Safety-Kleen regionwide. Participating in the market with a similar service program can only be accomplished in two ways -- compete on a local basis, or provide manufacturing services to Safety-Kleen.

IV. CLEANERS . . .

H. Market Opportunity Attractiveness (Continued)

2. Solvent Degreasers and Aqueous Cleaners (Standard and Custom)

- While there are relatively few competitors selling vapor degreasers in the Great Lakes Region, they are well-established in a market that places high value on past experience.
- A Canadian manufacturer competing in the United States needs to be able to show its equipment in operation at other plants.
- It is recommended that Canadian manufacturers pursuing United States markets do so in conjunction with an existing U.S. manufacturer.
- If a Canadian company wishes to enter the market independently, it should start by getting involved in the appropriate trade shows in order to meet potential customers and manufacturers' representatives.
- The proximity of Canadian manufacturers to the Great Lakes Region puts them in a position to make the personal customer contacts required to sell cleaning equipment effectively.

V. MARKET PENETRATION

Several matters of importance in penetrating the U.S. Great Lakes Region apply to Canadian manufacturers of both pressure washers and cleaners. They include (a) the special importance of the automobile industry, (b) customs and tariffs, (c) transportation and delivery, and (d) receptivity to Canadian products.

A. Automotive Industry - A Special Role in the Great Lakes Region

As stated in an earlier section, the automobile industry plays a dominant role in the Great Lakes Region for two reasons.

- The industry itself accounts for nearly one-fifth of the industrial output of the region.
- The region is heavily populated by manufacturers that support the automobile industry.

More importantly for Canadian manufacturers of high pressure washing and degreasing equipment is the fact that the three major automobile companies with plants in the region — General Motors, Ford and Chrysler — are themselves users of every one of the products reviewed in this report.

The auto makers use low pressure washers for general maintenance, standard and custom high pressure washers for heavy duty general and in-line maintenance, parts cleaners for engine rebuilding and machine shop applications, and solvent degreasers and aqueous cleaners for in-line parts cleaning and surface preparation.

As outlined elsewhere in this report, the importance of the auto makers is greatest in two of the product areas.

- High pressure washers
- Solvent degreasers and in-line aqueous cleaners

In light of its importance to Canadian manufacturers, the automobile industry warrants special attention in this report.

Due to the many similarities between the auto makers in equipment requirements, purchasing process, and special requirements of vendors, it is not necessary to describe each one individually.

Instead, this report details the needs of General Motors' Pontiac manufacturing plant in Pontiac, Michigan. The needs of this plant are very similar to other General Motors groups. More substantive differences exist between General Motors and Ford and Chrysler. These differences are summarized near the end of this section.

V. MARKET PENETRATION . . .

A. Automotive Industry - A Special Role in the Great Lakes Region (Continued)

1. Pontiac Specification and Purchasing Process for In-Line Equipment

Since automobile parts tend to be large, customized equipment is required for almost every application. The process outlined here is the same for replacement equipment as it is for equipment used in plant additions.

i. Once a need is established, the plant engineering group in the applicable area develops specifications for the equipment. These specifications are very loose, and in the case of aqueous cleaners involve just two areas.

(a) Recirculating water filtration requirements
(measured in parts per million)

(b) Part cleanliness requirements (measured using
residue count)

Every specification list also includes a catch-all phrase indicating that standard specifications outlined in Pontiac's Manufacturing Engineering Standards Manual are part of the overall specs.

This manual, which is very similar to ones used by the other auto makers, is intended to facilitate maintenance and retooling for Pontiac. For example, standard parts, such as flexible couplings, used on the equipment must be of the makes that are stocked by Pontiac.

The Standards Manual referred to here is available from the U.S. Trade and Investment Development Division, Department of External Affairs of the Government of Canada. The Table of Contents of the Manual is reproduced in Appendix K. The Manual is updated annually.

Deviations from the manual on the part of the vendor must be approved in writing. The engineer writing the specifications is responsible for seeing to this.

ii. A bid list is created by the engineering staff based upon a supplier's past experience working with these engineers or with Pontiac. Pontiac policy dictates that a minimum of three vendors be included on the bid list. Lacking this experience, a vendor must make a concerted effort to become known by the engineering staff.

V. MARKET PENETRATION . . .

A. Automotive Industry - A Special Role in the Great Lakes Region
(Continued)

- (a) Contact both Purchasing and Engineering with product literature clearly outlining how your product introduces new technology, reflects new ideas, or in some way might benefit Pontiac.
 - (b) Be prepared to respond to initial questions that will be asked in detail later during the Machine Comparison Study (see Step iv).
- iii. The specification list and bid list are sent to Purchasing for distribution to those on the bid list, requesting a quotation.

This is a closed bid process where bidders are not aware of competing bids.

It is Pontiac policy that bids be opened on a predetermined date with both Engineering and Purchasing representatives present.

The bids must include a price quotation as well as a design recommendation.

- iv. The Engineering staff performs a Machine Comparison Study comparing the advantages and disadvantages of each of the bids received. Approximately 60 percent of the time the winning bid turns out to be the low bid.

The comparison encompasses three basic areas.

(a) Equipment Inspection

Much importance is assigned to the results of inspections of equipment in use at other companies. Discussion with those using the equipment is centered around maintenance requirements, longevity of the equipment and the ability of the equipment to perform the desired cleaning task.

V. MARKET PENETRATION . . .

A. Automotive Industry - A Special Role in the Great Lakes Region
(Continued)

(b) Plant Visit

A visit is made to the vendor's plant to determine the overall ability to perform on the contract.

- Management and technical expertise
- Project team understanding of the problem
- In-house design team, thereby showing control over design
- Quality of equipment used to build product (statistical process controls can be helpful)

(c) Financial Analysis

Vendor solvency is determined by Purchasing.

- v. When the equipment is delivered by the winning vendor, a certain number of man-days will be required of the vendor for start-up, as specified in the original list of specifications.
- vi. Maintenance of the equipment is performed by Pontiac. Within what is typically a one-year warranty period, any service covered by the warranty is paid for by the vendor.

Pontiac requires a very detailed equipment maintenance manual outlining all servicing and replacement parts matters. It has become more strict about this requirement in recent years. Specific requirements are outlined in the Standards Manual.

2. Significant Differences Among Other Auto Makers

The process described for Pontiac is similar to that within General Motors as a whole. General Motors is quite decentralized, and efforts to sell equipment must be directed at the plant level.

The process at Ford is similar to that at General Motors except for two major differences.

V. MARKET PENETRATION . . .

A. Automotive Industry - A Special Role in the Great Lakes Region (Continued)

- i. The process at Ford is much more centralized. A staff group at Ford's Dearborn, Michigan headquarters will create all of the design specifications for new equipment to be used at the various plants. The process of requesting bids and evaluating quotations is also performed by this corporate staff group. Once the project has been awarded, the "picture sheets" of the equipment are sent to the engineering group at the plant level for implementation.
- ii. In order to be placed on any bid list at Ford a vendor must appear on Ford's Safety Approval List. For example, among the major high pressure washer manufacturers, National Liquid Blasting is the only one included on this list. They are the only paint, grate, chain and interior body washers that have the required safety features. Ford engineers, therefore, are only able to purchase this type of equipment from NLB.

Ford publishes an industrial relations bulletin that gives a checklist of safety requirements. This is available from the following source.

Dick McGowen
Purchasing & Supply Staff
Ford Motor Company
American Road, Room 404
Dearborn, Michigan 48121
(313) 322-7719

Chrysler's purchasing process is similar to General Motors' for equipment upgrades or replacement. When new systems are put into place, Chrysler will contract the entire coordination effort out to a design engineering firm, general contractor, or one of the major manufacturers involved in the system.

3. Other Characteristics

- i. When standardized off-the-shelf equipment such as parts cleaners or simple vapor degreasers is purchased, formal specifications or a bidding system are not typically used.

As the need arises, Purchasing will receive an inquiry from the facility requiring the equipment and will make a purchase based upon an informal evaluation of the products that it has information on.

V. MARKET PENETRATION . . .

A. Automotive Industry - A Special Role in the Great Lakes Region (Continued)

As an example, the Chrysler purchasing agent prefers to receive product literature with a maximum of three pages, from potential suppliers. Before placing an order with the supplier of choice, the agent will determine if the supplier has lived up to any service agreements previously given, if any past product problems are apparent, and how long the supplier has been manufacturing this type of product.

- ii. Auto makers have no problem dealing with manufacturers' representatives during the early stages of the bidding process. However, once the project is awarded they would prefer to deal directly with the manufacturer, and consider the manufacturers' representative as an unnecessary middleman.

Those suppliers selling to the auto makers the highly engineered products included in this report are generally located in the Great Lakes Region. Most, in fact, are headquartered in Michigan. The perception among auto makers is that coordination problems can result when dealing with vendors at a distance on projects requiring careful engineering.

It is also noted, however, that this coordination problem can be overcome with good planning on the part of the vendor.

In any case, much of Canadian industry is located as close, if not closer to the Detroit area than competing companies located in the Great Lakes Region (see Exhibit 24 for selected distance information).

- iii. There has been a distinct movement among the auto makers away from vapor degreasers and toward a greater use of aqueous cleaners. It is stated elsewhere in this report that at this point auto makers will use solvent-based systems only when absolutely necessary.

This movement has resulted from concern over existing and potential environmental problems caused by the emission of solvent vapor and disposal of solvent waste.

Auto makers cannot afford to have lines shut down due to regulatory non-compliance. They tend to anticipate future regulations and take steps in the present to avoid future non-compliance.

V. MARKET PENETRATION . . .

B. Tariffs and Customs

In order to be sold in the United States, Canadian manufactured washing and cleaning equipment must clear United States customs. To do this, all United States labeling and consumer protection laws must be satisfied, and appropriate import tariffs must be paid. In general, it is the responsibility of the importer of record to satisfy U.S. customs on all of these points. The importer of record could be a final customer, or a manufacturers' representative or agent. However, customs clearance is viewed as an unknown or a nuisance by most distributors. To be competitive Canadian manufacturers are advised to arrange to handle all customs related work.

1. Customs Brokers

In order to clear customs, the usual procedure is to hire a U.S. customs house broker to act as agent in these transactions. It is usually best to form a long-term working relationship with one particular broker. Brokers typically charge a fee to clear each shipment; these may vary from one broker to another, as will the extent of service offered. Manufacturers should contact several brokers to determine which one offers the most appropriate service for him. A good customs broker can supply invaluable advice on clearing customs and satisfying United States import requirements. In the United States there is a trade association of licensed customs house brokers, which publishes an annual membership directory.

Membership directories can be obtained by contacting The National Customs Brokers & Forwarders Association of America; One World Trade Center, Suite 1109; New York, New York 10048, or at telephone number (212) 432-0050.

2. General Requirements

In order to be imported into the United States, all foreign-manufactured products must be marked clearly in English with the country of manufacture. Shipments must be accompanied by a full set of invoices that state the value for duty. Value for duty is usually the invoice cost transaction value of the merchandise excluding such charges as duties, brokerage and freight that are incurred on direct shipments to the United States.

The rate of duty payable is described in the Tariff Schedules of the United States. The Tariff Schedules include descriptions of commodities and their respective rates of duty.

V. MARKET PENETRATION . . .

B. Tariffs and Customs (Continued)

For the products included in this report, it is not clear which classifications and rates are most appropriate. Likely classifications are shown in Exhibit 22. It should be understood that each case should be treated individually in order to obtain more specific classifications and binding rulings. Also, if there are specific classifications pertaining to the parts of equipment being exported, specific duties would then apply to those parts.

Exhibit 22

Customs and Tariff Classifications and Rates

<u>Product</u>	<u>Classification</u>	<u>1985 Rate</u>
<u>Washers</u>		
Simple piston pump sprays, powder bellows and parts thereof	662.35	6.7%
Mechanical appliances n.s.p.f. for dispersing liquids or powders	662.50	4.0%
Machines (not specifically provided for) and parts thereof	678.50	4.0%
<u>Cleaners</u>		
Machinery for cleaning or drying bottles or other containers	662.20	4.1%

Merchandise must also be accompanied by properly completed commercial invoices. It should be demonstrated that all United States labeling and consumer protection requirements have been met. In order to leave Canada, (and especially if there is the possibility that the merchandise will be returned to Canada), each shipment should be accompanied by a Canadian customs form B-13.

A customs house broker or the United States customs service can be contacted for help on these issues. However, the best first source of information and help is the Market Entry Section, U.S.A. Marketing Division, U.S. Trade and Investment Development Bureau of the Department of External Affairs in Ottawa. Its telephone number is (613) 993-7484.

V. MARKET PENETRATION . . .

B. Tariffs and Customs (Continued)

In particular, the Market Entry Section will help obtain binding tariff classification rulings from United States Customs. It will also assist Canadian manufacturers with UL or other agency requirements for import, will offer advice on the details of exporting, and will provide other general services and advice. Canadian manufacturers are advised to contact the Market Entry Section first before trying to export.

3. Entry to the United States

In order to enter the United States, merchandise must be transported "in bond" with appropriate documentation to the interior port-of-entry. The ports-of-entry in the five states of this study are listed on the following page. In general, it is advisable for Canadian manufacturers to have their merchandise clear customs at a border port-of-entry. In order to be cleared at an interior port-of-entry, the merchandise must be sealed at the border and bonded pending clearance at the interior port-of-entry.

It is also important that a Canadian manufacturer's carrier or freight forwarder have a complete set of documentation and explicit instructions on clearing customs. Otherwise the carrier may choose to clear customs in a manner disadvantageous to the manufacturer.

V. MARKET PENETRATION . . .

B. Tariffs and Customs (Continued)

Exhibit 23

Ports-of-Entry

Michigan

Battle Creek
Detroit
Flint
Grand Rapids
Muskegon
Port Huron
Saginaw - Bay City
Sault Ste. Marie

Ohio

Akron
Ashtabula
Cincinnati
Cleveland
Columbus
Conneaut
Dayton
Sandusky
Toledo

Indiana

Chicago, Illinois
Indianapolis
Evansville
Lawrenceburg

New York

Albany
Alexandria Bay
Buffalo - Niagara Falls
Cape Vincent
Champlain - Rouses Point
Chateaugay
Fort Covington
Massena
New York
 Kennedy Airport Area
 Newark Area
 New York Seaport Area
Ogdensburg
Oswego
Rochester
Syracuse
Trout River
Utica

Pennsylvania

Chester/Erie
Harrisburg
Philadelphia
Wilkes-Barre/Scranton

V. MARKET PENETRATION . . .

C. Transportation and Delivery

In general, Canadian manufacturers shipping into the United States have three choices of trucking methods: using their own private trucking fleet, which is not discussed here; using common carriers; and using freight consolidators. Manufacturers' representatives and distributors almost uniformly expect to receive delivery of products by common carrier.

Common carriers are trucking firms that serve the general public over designated routes. On the routes that they serve, carriers quote prices for transportation from published tariffs which show rates either by commodity or according to a classification. Special tariffs are unique to specific carriers, and are generally lower than the class rate (an industry rate based on product weight and mileage) would be over that route. Not all common carriers have tariffs for all routes. Special tariffs from different common carriers over the same route may differ. Canadian manufacturers should contact specific common carriers for tariff and route information.

To find the common carriers serving a manufacturer's plant and the intended delivery point, Canadian manufacturers can contact the Ontario Trucking Association, which can be reached in Toronto at (416) 249-7401, the Manitoba Trucking Association in Winnipeg at (204) 632-6600, or the Quebec Trucking Association in Montreal at (514) 527-1356. The Ontario Trucking Association also publishes a ship by truck directory listing trucking firms, cities served, commodities carried, as well as ancillary information useful to shippers.

In addition, G. R. Leonard and Company Incorporated, 79 Madison Avenue, New York, New York, publishes a series of motor freight directories listing all of the trucking firms plying routes from specific United States cities. The directories list both common carriers and freight consolidators according to routes served. To find a common carrier serving both a manufacturer's plant and the expected delivery points in the U.S., a manufacturer can work backwards through these guides.

Freight consolidators act as brokers between firms shipping small quantities and common carriers. The consolidators collect a large group of small shipments, consolidate them, and ship them together at truckload rates to reduce what would otherwise be higher LTL (less than truckload) freight charges for the shippers. For very small shipments, freight consolidation can be substantially cheaper than common carrier rates. Consolidating freight, however, takes time, and can delay deliveries sometimes. For this reason, Canadian manufacturers should consider using ordinary common carriers whenever possible.

V. MARKET PENETRATION . . .

C. Transportation and Delivery (Continued)

When contacting a common carrier for rates, the shipper needs to provide at least three pieces of information.

1. Accurate description of the commodity
2. Points of origin and destination
3. Shipping weight

In general, rates depend on the size of the load and the distance shipped: the larger the load, the lower the cost-per-unit weight; the longer the distance, the higher the charge. In addition, for small loads (usually less than 200 to 300 lbs.), there is frequently a flat shipment charge added. Special discount rates, which are rates quoted by carriers covering a specific commodity and route, are generally lower than the class rate for that commodity over that route.

The gap between class and special rates illustrates the importance of shopping around for trucking services, rather than taking the rate given by the first carrier called. In any case, and particularly if the shipper perceives considerable volume moving in the future, he should negotiate with a carrier and attempt to obtain a rate more favorable than that already existing.

Exhibit 24 on the following page shows a comparison of typical common carrier rates from Toronto to selected Great Lakes cities, and from various U.S. points to these cities. The U.S. points of origin used here are nearby the locations of some of the major U.S. sources of supply of pressure washers and cleaners.

As shown in the Exhibit, manufacturers in Toronto are well situated to compete in the major markets of the U.S. Great Lakes Region. The relatively low rate to Cincinnati, Ohio reflects a 50 percent discount quoted by one carrier for shipments to Ohio.

V. MARKET PENETRATION . . .

C. Transportation and Delivery (Continued)

Exhibit 24

Typical Common Carrier Rates¹ (For Selected Shipping Weights)

Shipping From \ Shipping To ²	Detroit, Michigan		Buffalo, New York		Cincinnati, Ohio	
	Less Than 500 lbs.	2,000 to 4,999 lbs.	Less Than 500 lbs.	2,000 to 4,999 lbs.	Less Than 500 lbs.	2,000 to 4,999 lbs.
U.S. Dollars Per Hundred Weight (Travel Distances)						
Toronto, Ontario ³	19.57 (232 miles)	12.77	14.67 (100 miles)	9.01	18.02 (491 miles)	13.77
Detroit, Michigan	Not Applicable		25.75 (263 miles)	12.61	23.48 (259 miles)	11.25
Chicago, Illinois	23.82 (266 miles)	11.52	29.13 (530 miles)	14.52	24.30 (287 miles)	11.80
Des Moines, Iowa	29.02 (584 miles)	19.83	33.55 (839 miles)	23.85	28.65 (571 miles)	19.38
Little Rock, Arkansas	29.94 (838 miles)	21.35	33.24 (1,037 miles)	23.88	26.33 (615 miles)	18.51

¹Based upon Class: 100; Commodity: Industrial Machinery and Equipment.

²All shipments are direct.

³Quoted in U.S. dollars.

V. MARKET PENETRATION . . .

D. Receptivity to Canadian Products

The perception of Canadian products among users of high pressure industrial washing and degreasing equipment in the U.S. Great Lakes Region will, of course, have a bearing on how well a Canadian manufacturer is likely to be received.

Throughout the research effort for this report, this issue was constantly addressed. Two central conclusions are drawn from the responses.

1. With very few exceptions, industry participants in the region — manufacturers, distributors and end-users — are unaware of the existence of Canadian manufacturers of pressure washers or cleaners.
2. Virtually every manufacturers' representative, distribution channel member, and end-user would be willing to consider Canadian products were they available.

As pointed out throughout this report, the two major concerns of most respondents are timely availability of product and service and parts availability.

Most respondents are aware of the fact that duties may apply to Canadian exports to the U.S. Many feel that they may be prohibitively high (but this is not the case as shown on p. 98), as it is difficult for small U.S. manufacturers of these products to compete in Canada.

However, most respondents are also aware of the existing exchange rate with Canada that could result in much lower priced products.

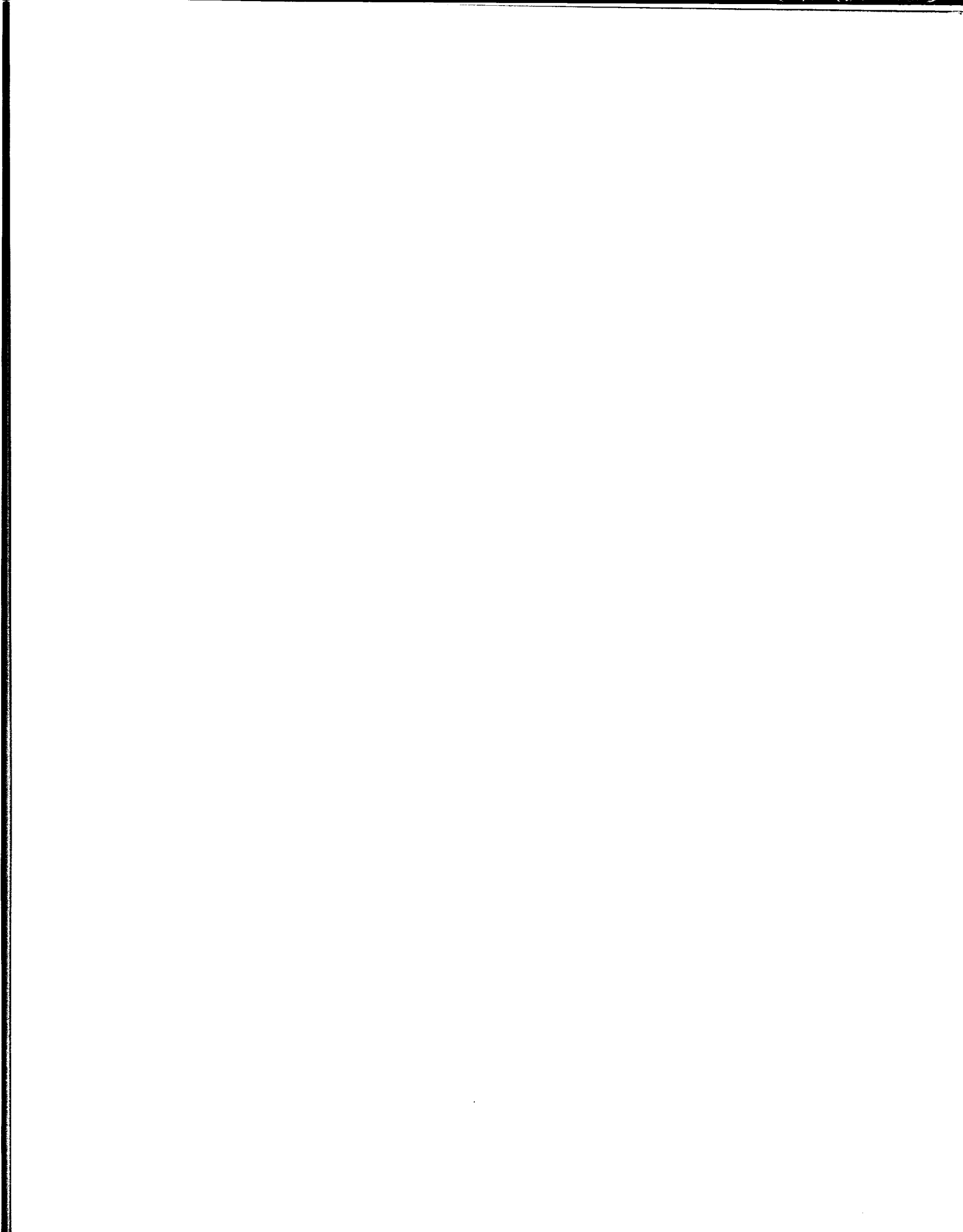
To provide a better perspective on the exchange rate issue, the following table shows the trend in the exchange rate since 1970.

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1983</u>	<u>June 11, 1985</u>
Value of U.S. Dollar in Canadian Dollars	\$1.044	\$1.017	\$1.169	\$1.232	\$1.372

It is not possible to predict future exchange rates accurately. At the present time, however, Canadian manufacturers have a significant cost advantage in U.S. dollars relative to their U.S. counterparts, even considering the duties shown in Exhibit 22.

E. Conclusion

Canadian manufacturers of high pressure industrial washing and degreasing equipment can look with optimism upon their chances for success within the U.S. Great Lakes Region. With quality products and sound marketing plans reflecting the special characteristics of each market, Canadian manufacturers can take advantage of competitive pricing and geographical proximity to penetrate this very sizable market area.



OPPORTUNITIES FOR CANADIAN
HIGH PRESSURE INDUSTRIAL
WASHING AND DEGREASING
EQUIPMENT IN THE U.S.
GREAT LAKES REGION

U.S.A. Trade and Investment
Development Division

Department of External Affairs
Government of Canada

October, 1985

APPENDICES

APPENDICES

APPENDIX A
STUDY METHODOLOGY

APPENDIX A
STUDY METHODOLOGY

Three types of activity have been undertaken to prepare this report.

- A. Research and Data Compilation
- B. Technical Show Attendance
- C. Field Interviews

A. Research and Data Compilation have focused on the following sources of information.

1. Research

- Review of published articles
- Trade association directories and publications
- Identification of market participants
 - Manufacturers
 - Manufacturers' representatives
 - Channel members
- Information on trade publications
- Product literature from manufacturers and distributors
- Technical information
 - Water Jet Technology Association
 - Machinery and Allied Products Institute
 - Association for Finishing Processes of SME
 - CEMA and WJTA Proposed Standards
 - Pontiac Engineering Standards
- Trade publication buyers guides and directories
- U.S. government agencies
 - Environmental Protection Agency
 - Occupational Safety and Health Administration
- State government agencies
- Canadian government agencies
- Insurance underwriters

2. Data Compilation

- Manufacturers' data
 - Dun and Bradstreet
 - Standard and Poors
 - Wards Directories
 - Interview contacts
- U.S. and Great Lakes Region statistics
 - Statistical abstract of the United States
 - Jobber Topics
 - Department of Commerce
 - Sales and Marketing Management
 - U.S. Industrial Outlook

- B. The Third U.S. Water Jet Conference was attended as part of the research for this report. This conference dealt primarily with emerging high pressure washer technology as well as traditional and new markets for these products. Numerous contacts with industry participants were made during the conference.
- C. A total of 93 field interviews with industry participants were conducted to collect specific information relative to the basic issues of this study.
- Trade associations
 - CEMA technical consultant
 - Cleaner industry regulatory specialist
 - Manufacturers
 - Manufacturers' representatives
 - Warehouse distributors
 - Specialty distributors
 - Jobbers
 - Supply houses
 - Farmers cooperatives
 - End-users

APPENDIX B
AUTOMOTIVE PLANTS
IN THE U.S. GREAT LAKES REGION

APPENDIX B

AUTOMOTIVE PLANTS IN THE U.S. GREAT LAKES REGION

COMPANY	PLANT LOCATION	MODELS PRODUCED
Chrysler	Hamtramck, Michigan Detroit, Michigan	Volare, Aspen Newport, New Yorker
Ford	Dearborn, Michigan Lorain, Ohio Wayne, Michigan Wixom, Michigan	Mustang, Capri Cougar, XR-7, Thunderbird Granada, Monarch, Versailles Lincoln, Mark IV
General Motors	Detroit, Michigan Flint, Michigan Lansing, Michigan Lordstown, Ohio Norwood, Ohio Pontiac, Michigan Willow Run, Michigan	Cadillac Century, Regal, LeSabre Cutlass, Delta 88 Sunbird, Skyhawk Camaro, Firebird LeMans, Grand Prix, Pontiac Skylark, Citation

Source: Jobber Topics

CHRYSLER, FORD AND GENERAL MOTORS PARTS AND ACCESSORIES PLANTS
IN THE U.S. GREAT LAKES REGION

Chrysler

New Castle, Indiana
Kokomo, Indiana
Indianapolis, Indiana
Trenton, Michigan
Detroit, Michigan
Syracuse, New York
Perrysburg, Ohio

Ford

Avon Lake, Ohio
Indianapolis, Indiana
Sterling Heights, Michigan (2)
Utica, Michigan
Ypsilanti, Michigan
Saline, Michigan
Lima, Ohio
Batavia, Ohio
Brookpark, Ohio
Sandusky, Ohio
Sharonville, Ohio
Greene Island, New York (2)
Dearborn, Michigan (6)
Livonia, Michigan (2)
Plymouth, Michigan

General Motors

Three Rivers, Michigan
Ypsilanti, Michigan (2)
Westland, Michigan
Livonia, Michigan (2)
Detroit, Michigan
Dayton, Ohio (3)
Buffalo, New York
Tonawanda, New York
Lockport, New York
Parma, Ohio
Lyria, Ohio
Toledo, Ohio
Saginaw, Michigan (3)
Warren, Michigan
Adrian, Michigan
Tecumseh, Michigan
Wyoming, Michigan
Indianapolis, Indiana
Muncie, Indiana
Bay City, Michigan
Flint, Michigan (3)
Grand Blanc, Michigan

Source: Marketing Economics Key Plants

APPENDIX C

PRESSURE WASHER APPLICATIONS
IN SELECTED INDUSTRIES

APPENDIX C

PRESSURE WASHER APPLICATIONS IN SELECTED INDUSTRIES

LOW PRESSURE WASHERS	
INDUSTRY	APPLICATION
Manufacturing	Building cleaning, machinery, fleet maintenance, and shop plant operations.
Food	Fast food outlets, wholesale suppliers, grocery chains, processing plants, and distribution facilities
Farming and Agriculture	Crop farmers, livestock and poultry farmers, and agricultural research facilities
Building Maintenance	Major entry areas, restrooms, cafeterias, waste storage areas, air conditioning systems, swimming pool areas, and specialized building cleaning
Transportation	Cars, trucks, buses, boats, ships, aircraft and support equipment, rail transportation equipment, and recreational vehicles
Construction	Heavy field equipment, and new buildings prior to occupancy by tenants

Continued

Continued

HIGH PRESSURE WASHERS	
INDUSTRY	APPLICATION
Petrochemical Refineries	Pre-paint surface preparation, drain cleaning, pipe descaling. Heat exchangers tube bundles
Marine Environment	Deck descaling, hold and bilge cleaning, superheater tube, boiler tube, condenser tube and economiser tube descaling, automatic shipside cleaning, underwater abrasive blasting
Railways	Engine cleaning, tank cleaning, bulk carrier cleaning, culvert cleaning under tracks
Precast Concrete Works	Aggregate exposure, feature finishing cleaning of batching and other plant
Breweries	Vat descaling condenser tube cleaning, pipe and drain jetting, hygiene maintenance
Paper and Board Mills	Stock pipe cleaning, mould cleaning, press role descaling, wire cleaning, blade coating machine maintenance
Power Stations	Fire-side boiler tube cleaning, condenser tube jetting, economiser cleaning
Municipal Authorities	Sewer and drain jetting, refuse vehicle and container cleaning, graffiti and road marking removal
Airports	Removal of oil and rubber from runways and parking areas
Automotive Industry	Electrocoat booth cleaning, pre-paint cleaning, grids

APPENDIX D
EXAMPLE OF
REGIONAL TRADE ADVERTISING

APPENDIX D

EXAMPLE OF REGIONAL TRADE ADVERTISING

Industry Digest
Farmington, MI
(313) 478-8111

Coverage: Michigan industry only

Circulation: Six issues per year,
42,500 copies per issue

Size of Plant
(Employees)

Recipient of Magazine

Less than 50 Plant Manager
50 to 100 Purchasing plus above (Plant Manager)
100 to 150 Engineering, Plant Superintendants plus above
150 to 200 Plant Engineering plus above
200 or greater Materials Handling plus above

Advertising Options:

	<u>Average Inquiries</u>	<u>Average Sales</u>	<u>Cost Per Issue</u>
Direct Response Card ¹	47	9	\$650
Full Page Ad ²	33	6	\$560
Half Page Ad ²	24	5	\$335

¹Individual response card designed by advertiser.

²Includes reader service card number.

APPENDIX E

SELECTED LOW PRESSURE WASHER DISTRIBUTORS AND
FARMERS' COOPERATIVES IN THE U.S.
GREAT LAKES REGION

APPENDIX E

SELECTED LOW PRESSURE WASHER DISTRIBUTORS
IN THE U.S. GREAT LAKES REGION

DISTRIBUTOR	LINES
Atomic Steam Company 10727 Fenkell Detroit, MI (313) 491-0550	Electro-Magic Delco Spartan
C.E. Sales & Service, Inc. 6665 Burroughs Sterling Hts., MI (313) 739-3250	Hotsy Malsbary
Airwick Detroit, Inc. 404 W. 8 Mile Road Ferndale, MI (313) 399-2920	Advance
MOE Service Equipment 9100 Dearborn Detroit, MI (313) 842-1150	Malsbary Klinett Alkota
Rabine, R.P. Equipment Co. 46735 Jefferson Mt. Clemens, MI (313) 949-3320	Citation Hotsy Electro-Magic Water Ram Excell
M&M Industrial and Automotive Equipment Co. 9037 Michigan Detroit, MI	Jenny
Burke Rental Service, Inc. 36000 Mound Sterling Hts., MI (313) 939-4400	Not available
Georges Mobile Klean 2619 Central Detroit, MI (313) 842-3213	Kleen-King
H & R Industries, Inc. 3020 Stafford Grand Rapids, MI (612) 247-1165	K.E.W.

Continued

Continued

DISTRIBUTOR	LINES
Britt-Tech Corp. 2961 Indian Trail Hamburg, MI (313) 878-9360	Kleen-King Liquid Brush
Car-Bee, Inc. 18035 James Couzens Highway Detroit, MI (313) 863-7700	Malsbary
Midwest Cleaning Systems Co. 5450 Pocono West Bloomfield Hills, MI (313) 683-1303	Not available
Palmer Equipment Co. 3575 E. Palmer Detroit, MI (313) 921-6020	Sioux
Suburban Supply Co. 27202 Harper St. Clare Shores, MI (313) 777-2235	L&A Euroclean
Klean All Maintenance 2640 Byrd Dearborn, MI (313) 336-6197	Electro-Magic
Gonyo Radiator & Sanitary & Supply Equipment Co. Inc. 2029 9th Street Muskegon Hts., MI (616) 722-7519	Malsbary
Hydro-Chem Systems, Inc. 5550 Clay S.W. Grand Rapids, MI (800) 632-1992	Not Available
AES Equipment Specialist, Inc. 3800 West River Dr. N.W. Comstock Park, MI (616) 784-6683	Not Available

Continued

Continued

DISTRIBUTOR	LINES
Great Lakes Cleaning Systems 3660 Jefferson S.E. Grand Rapids, MI (800) 442-9118	Hotsy
Edgewater Supply 820 Lake Boulevard St. Joseph, MI (616) 983-7889	Hotsy
Industrial Steam Sales & Service 107 W. Liberty Youngstown, Ohio (216) 545-0574	Not Available
Canfield Industrial Sales 10325 W. Western Reserve Youngstown, Ohio (216) 533-4371	Not Available
Steege Auto Parts Inc. 317 Wick Avenue Youngstown, Ohio (216) 744-4155	Not Available
A.A. Iverson Industries, Inc. 9799 Princeton-Glendale Road Union Township, Ohio (513) 874-4484	Delco
Beaver Sales Inc. 1735 Ridgewood Place Fort Wright, Kentucky (606) 331-4311	Electro-Magie
Byrnsyde Inc. 3590 Hauck Road. Cincinnati, Ohio (513) 563-9671	Jenny
Economy Auto Parts 1415 Central Pkwy Cincinnati, OH (513) 241-7542	Not Available

Continued

Continued

DISTRIBUTOR	LINES
Hydro Chem Systems, Inc. 4944 Provident Drive Union Township-Butler City, OH (513) 874-2922	Hydro-Chem Systems
Hydro Systems Co. 3798 Round Bottom Road Cincinnati, OH (513) 271-8800	Not Available
Pratt Industries 5548 Childs Avenue Cincinnati, OH (513) 574-2581	Not Available
Beaver Sales, Inc. 201 W. 36 Covington, KY (606) 261-6500	Electro-Magic
Crawford, B. F. Co., Inc. 429 N. 2nd Terre Haute, IN (812) 232-9527	Not Available
Hotsy Cleaning Systems, Inc. 5801 S. Harding Indianapolis, IN (317) 788-9781	Hotsy
Rybar Associates 702 N. Shortridge Road Indianapolis, IN (317) 353-9711	Cat Pump
Consolidated Cleaning Systems, Inc. 2747 N. Emerson Indianapolis, IN (317) 545-3314	Not Available

Continued

Continued

DISTRIBUTOR	LINES
A-C Brake Co., Inc. 308 E. College St. Louisville KY 800-626-2810	Malsbary
Action Equipment, Inc. 1457 Sunday Drive Indianapolis, IN (317) 788-9783	Delco
Midwest Progressive Equipment Inc. Ratsburg Road Lebanon, IN (317) 482-4776	K.E.W.
Central Rubber & Supply Co. Industrial Div. 30 E. Georgia Indianapolis, IN (317) 636-4115	Electro-Magic
H. P. Chemical Products Corp. 4220 Saguaro Tr. Indianapolis, IN (317) 298-9950	Malsbary L & A
Art's Grease Release State Road B5 South Greenwood Indianapolis, IN (317) 535-7004	Jenny
Compressed Air Systems, Inc. 1313 Sadlier Circle E. Drive Indianapolis, IN (317) 352-0403	Jenny
Jack's Tool Rental Inc. 861 N. Range Line Road Carmel, IN (317) 846-0651	Jenny

Continued

Continued

DISTRIBUTOR	LINES
Sullair of Indiana, Inc. 7015 Brookville Road Indianapolis, IN (317) 357-8721	Jetin-Sullair Water Ram
Cleaning & Washing Equipment Co. 123 Second Street Blawnox, PA (412) 828-2323	Not Available
Delco Cleaning Systems of Pittsburgh 3936 Monroeville Boulevard Monroeville, PA 15146 (412) 856-4470	Delco
Fort Pitt Paint & Welders Supply Co. 1014 East Ohio Pittsburgh, PA (412) 231-5122	Jenny
Knickerbocker, Russel Co. Parkway W and Cambells Run Pittsburgh, PA (412) 923-1633	Not Available
Lico Chemicals 929 Fifth Avenue McKeesport, PA (412) 422-7786	Not Available
Landa of Pittsburgh 1248 Catalina Drive Monroeville, PA (412) 856-8941	Not Available
Ragan Sales Co. RDZ Burgettstown, PA (412) 947-3500	Jenny

Continued

Continued

DISTRIBUTOR	LINES
Hotsy Equipment Co. Pittsburgh Street Mars, PA (412) 625-3544	Hotsy
ARA United Rental Centers, Inc. 4036 Monroeville Boulevard Monroeville, PA (412) 372-2102	Not Available
ARA United States Rent Alls 4856 Clairton Boulevard Pittsburgh, PA (412) 884-0300	Not Available
Bantam Steam of Pittsburgh 1413 Beulah Road Pittsburgh, PA (412) 241-6069	Not Available
Blast Off Cleaning Equipment Corp. Route 51 Philips, PA (412) 439-9120	Not Available
Auto Detail Supply 5365 Enterprise Boulevard Bethel Park, PA (412) 854-1300	Not Available
Quality Systems & Service 1626 HH Avenue Beaver Falls, PA (412) 847- 2884	Not Available
Frank Manni's Sales & Service 1131 Greensburg Road New Kensington, PA (412) 337-8255	Not Available
Roberts, Jeff Contractors 5945 Depot Road Guilderland Center, NY (518) 861-6779	Electro-Magic

Continued

Continued

DISTRIBUTOR	LINES
Ontario Metal Supply Co. 16 Hemlock Latham, NY (518) 785-3464	Not Available
Mobile Fleet Service, Inc. 1145 Mass Avenue Boxborough, MA 1-800-225-9208	Power Master
Ganzer Equipment Co. Pittsburgh Street Mars, PA (814) 899-5870	Hotsy
Abele Tractor & Equipment Co., Inc. 72 Everett Road Albany, NY (518) 438-4444	Karcher
Allen Cohon Cleaning Equipment Supplies 90 Atwell Lane Monticello, NY (914) 794-8113	Not Available
Clark, Wm. H. Municipal Equipment Inc. Third Avenue Rensselaer, NY (518) 286-5600	Not Available
Duane Rentals, Inc. 950 State Schenectady, NY (518) 346-3477	Not Available
Duren Sales Corp. 18 Kairnes Albany, NY (518) 489-8506	Malsbary Hotsy L&A Walters

Continued

Continued

DISTRIBUTOR	LINES
Ladco Chemical Products Co., Inc. 5628 Maelou Drive Hamburg, NY (716) 648-5331	Electro-Magic Malsbary Hotsy L&A
Red's Brake Service, Inc. 910 Montgomery Street Syracuse, NY (315) 476-2173	Electro-Magic
Chaffee-Ward Corp. 10845 Bodine Road Clarence, NY (716) 759-8228	Jenny
Tracey Road Equipment, Inc. Manilius Center Road Syracuse, NY (315) 437-1471	Delco
All Wash of Syracuse, Inc. 6679 Moore Road Syracuse, NY (315) 454-4473	Not Available
Aratari Auto Finishers, Inc. 123 Barbry Terrace Rochester, NY (315) 342-7026	L&A
Luma Trim Power Washing Corp. 501 Wilkens Rochester, NY (315) 454-5562	Not Available

SELECTED FARMERS' COOPERATIVES IN THE U.S. GREAT LAKES REGION

Agfoods, Inc.

3775 Zane Trace Drive,
Columbus, OH 43228
(614) 876-1101
Jesse Westburgh, General
Manager
Type: Distribution and
Warehousing
Products: All Food Products
Handled, Dry, Cooler and
Freezer

Landmark, Inc.

35 E. Chestnut St., P.O. Box
479, Columbus, OH 43216
(614) 225-8711
George Wollenslegel, Executive
Vice President and General
Manager
Type: Marketing, Purchasing
Products: Grain, Eggs, Poultry,
Seed, Feed, Petroleum,
Fertilizer, Chemicals, Farm
Supplies

**Ohio Farmers Grain and
Supply Association**

P.O. Box M, Fostoria,
OH 44830
(419) 435-7761
W. L. Chalfin, President and
General Manager
Type: Purchasing
Products: Fertilizer, Seed, Feed,
Chemicals

**Montgomery Bucks Farm
Bureau Cooperative
Association**

115 Washington Avenue,
Souderton, PA 18964
(215) 723-4355
Maynard Rothenberger, President
Type: Purchasing
Products: Fertilizer, Seed, Feed,
Farm Supplies, Chemicals

**Bedford Farm Bureau Co-op
Assn.**

Industrial Avenue, Box 333,
Bedford, PA 15522
(814) 623-6194
Gerald R. Miller, General
Manager
Type: Marketing and Purchasing
Products: Grain, Fertilizer,
Petroleum, Seed, Feed,
Chemicals, Misc. Farm Supplies

**Pomfret C&E Grape Growers
Cooperative**

204 East Main Street, Fredonia,
NY 14063
(716) 679-1533
James Barber, Manager
Type: Marketing, Purchasing
Products: Grain, Fertilizer,
Petroleum, Seed, Feed,
Chemicals, Farm Supplies

**Gouverneur Co-operative
Association, Inc.**

S. Gordon St., Gouverneur,
NY 13642
(315) 287-0710
Fred Otto, Manager
Type: Marketing, Purchasing
Products: Fertilizer, Seed, Feed,
Lumber, Farm Supplies

**Inter-County Farmers
Cooperative Association,
Inc.**

Woodridge, NY 12789
(914) 434-7200
Joseph Cohen, General Manager
Type: Marketing
Products: Feed, Eggs, Farm and
Garden Equipment, Foam Egg
Cartons

**Indiana Farm Bureau
Cooperative Association,
Inc.**

120 E. Market Street,
Indianapolis, IN 46204
(317) 631-8361
Philip F. French, Executive Vice
President
Type: Marketing, Purchasing
Products: Grain, Seed, Feed,
Fertilizer, Petroleum, Chemicals,
Building and Farm Supplies

Farm Bureau Services, Inc.

P.O. Box 30960, Lansing,
MI 48909
(517) 323-7000
Newton Allen, Executive Vice
President and Chief Executive
Officer
Type: Marketing, Purchasing
Products: Grain, Navy and
Colored Beans, Fertilizer, Seed,
Feed, Chemicals, Hardware

APPENDIX F

SELECTED HIGH PRESSURE WASHER DISTRIBUTORS
IN THE U.S. GREAT LAKES REGION

APPENDIX F

SELECTED HIGH PRESSURE WASHER DISTRIBUTORS
IN THE U.S. GREAT LAKES REGION

DISTRIBUTOR	LINES
K&D Industrial Services 6470 Beverly Plaza Romulus, MI (313) 729-3350	Not Available
Northland Contractor, Inc. 219 Fifth Street Manister, MI (616) 723-9055	Not Available
Industrial Water Blasting, Inc. 3609 Font Hill Drive Ellicott City, MD (301) 465-6464	Weatherford Tritan
Kleen All of America Corp. 1523 Evergreen Avenue Pittsburgh, PA 15209 (412) 821-5915	Harben

APPENDIX G

SELECTED AUTOMOTIVE WAREHOUSE DISTRIBUTORS
IN THE U.S. GREAT LAKES REGION

APPENDIX G

SELECTED AUTOMOTIVE WAREHOUSE DISTRIBUTORS
IN THE U.S. GREAT LAKES REGION

Brownlee Distribution, Inc.
34401 Groesbeck Hwy.
Fraser, MI 48026
(313) 294-7700

Cleveland Ignition Co.
10646 Leuer Ave.
Cleveland, OH 44108
(216) 851-6000

Eddy Automotive Warehouse
4110-30 Commerce Ave.
Cleveland, OH 44103
(216) 391-5100

Hoosier Automotive Warehouse
2933 Bluff Rd. Box 710
Indianapolis, IN 46206
(317) 788-4401

Parts Warehouse Co.
508 McGraw St.
Bay City, MI 48706
(517) 892-5511

Wilcox Brothers Co.
5157 Liberty Ave.
Pittsburgh, PA 15224
(412) 682-6747

Middle Atlantic Warehouse Distributors
6601 Vickers St.
Tonawanda, NY 14150
(716) 694-0200

United Automotive Supply Company
550 W. 12 Mile Rd.
Madison Heights, MI 48071
(313) 399-3900

St. Joe Distributing Co.
211 W. Indiana Ave.
South Bend, IN 46613
(219) 233-6131

Continued

Continued

Todedeo Auto Electric, Inc.
1717 Monore St.
Toledo, OH 43695
(419) 243-7104

Sandusky Automotive Distributors, Inc.
4th & Ogontz St., Box 510
Sandusky, OH 44870
(419) 625-4973

Steege Parts Corporation
477 N. Front St.
Columbus, OH 43215
(614) 221-2313

Stuart Tool Service Co.
21167 Ryan Rd.
Warren, MI 48091
(313) 755-1450

Sussen, Inc.
6115 Carnegie Ave.
Cleveland, OH 44103
(216) 361-7300

Wolverine Warehouse, Inc.
407 Michigan St.
Petoskey, MI 49770
(616) 347-4164

Gallipolis Parts Warehouse
210 Upper River Rd.
Gallipolis, OH 45631
(614) 446-1702

APPENDIX H

SELECTED AUTOMOTIVE JOBBERS IN
THE U.S. GREAT LAKES REGION

APPENDIX H

SELECTED AUTOMOTIVE JOBBERS IN THE GREAT LAKES REGION
(FROM JOBBER TOPICS)

INDIANA

A P D CORP. 433 N. Capitol Ave., Box 1805, Indianapolis 46208 G. B. Girdler (GM) R. Hilderbrand (B) Number of Salesmen Traveled 2	ASIA (3 BR.)	BERNE'S GENERAL AUTO PARTS, INC. 825 Chicago St., Michigan City 46360 Richard Shelton (GM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	FORTVILLE AUTO PARTS, INC. 305 W. Broadway, Fortville 46040 Bob Darrah (GM) (SM) (B) Number of Salesmen Traveled 1	ASIA (2 BR.) (1 MS)
ACE AUTO ELECTRIC, INC. 29 N. 1st St., Box 36, Vincennes 47581 Robert Reinmeyer (GM) (B) Number of Salesmen Traveled 3	AEA (1 MS)	BRAKE SUPPLY CO., INC. 4001 Vogel Rd., Box 447, Evansville 47703	ASIA	FRANK'S PISTON SERVICE, INC. 120 E. 1st St., Marion 46952 Francis B. Gohhausen (GM) Bob Banks (B) Number of Salesmen Traveled 6	ASIA AERA (7 BR.) (4 MS)
ACTION MACHINE, INC. 1855 Prairie Ave., South Bend 46613	AERA	C & A MOTOR PARTS, INC. 7373 Broadway, Merrillville 46410 Joe Alvarez (GM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	FRAZER SUPPLY CO. 202 Pearl St., Union City 47390	ASIA
ALLIED AUTO SUPPLY, INC. 7045 Calumet Ave., Hammond 46324 Bernie L. Fart (GM) Dennis Hardy, Gary Gleason (SM) Windy Nies (B) Number of Salesmen Traveled 1	ASIA (2 BR.) (1 MS)	C & G ENGINE & MACHINE 3335 W. 96th, Indianapolis 46268 Ron Morris (GM)	AERA (1 MS)	GASSERT AUTO SUPPLY 2845 E. Michigan St., Indianapolis 46201	ASIA
ALLISON CORP. 219 N. Main St., Box 310, Auburn 46706 Philip M. Allison (GM) Larry Carper (SM) Number of Salesmen Traveled 1	ASIA AERA (3 BR.)	C & P MACHINE SERVICE, INC. 445 Council Dr., Ft. Wayne 46825 Charles D. Baker (GM) David R. Baker (SM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	GIBSON AUTO PARTS CO. DIV. OF MID-COM 7007 Coffman Rd., Box 68570, Indianapolis 46268	ASIA
AMERICAN AUTO PARTS 3513 Michigan Ave., New Chicago 46342	ASIA	C & R PARTS SERVICE, INC. 100 E. 2nd St., Madison 47250 Burton Chambers (GM) Frank Rusak (SM) Charles Munch (B) Number of Salesmen Traveled 2	ASIA AERA (5 BR.) (2 MS)	GILLILAND AUTO MACHINE CO. 113-115 E. 4th St., Rochester 46975 George Crotzinger (B)	AERA (1 MS)
AMERICAN DISTRIBUTING CO., INC. Box 779, South Bend 46624 Lou Zaker (GM) Number of Salesmen Traveled 2	ASIA AERA (1 MS)	CALUMET AUTO PARTS, INC. 5503 Calumet Ave., Hammond 46320 Gordon G. Gammon (GM) (B) William Koel (SM) Number of Salesmen Traveled 4	ASIA (2 BR.) (1 MS)	GIRTON AUTO PARTS, INC. 129-33 N. Main St., Box 29, Winchester 47394 Terry L. Girton (GM) Richard Hyre (SM) Glen E. Cross (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)
ARCO MOTORS, INC. 328 S. Walnut St., Bloomington 47401	ASIA AERA	CAR PARTS DEPOT 708 W. Main St., N. Manchester 46962 Jim Norman (GM) (B) Larry Scott (SM) Number of Salesmen Traveled 1	ASIA (1 MS)	GOLDEN AUTO PARTS, INC. 701 N. Wayne St., Angola 46703 R. E. Bretton (GM) Number of Salesmen Traveled 6	ASIA AERA (4 BR.) (1 MS)
ARROW SUPPLY CO., INC. 924 Minors St., Indianapolis 46204 Fred L. Woods (GM) Robert L. Merbin (SM) L. M. (Sonny) Woods (B) Number of Salesmen Traveled 3	ASIA	CARMACK AUTOMOTIVE, INC., PAUL 704 S. Madison St., Muncie 47302 Jeff Babo (GM) Karan Spangler (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	GRIFFITH AUTO PARTS 223 N. Broad St., Griffith 46319 Robert Wilusz (GM) Andrew Wilusz (B) Number of Salesmen Traveled 1	AERA (1 MS)
ASSOCIATED TIRES, INC. 2203 S. Lafayette, Fort Wayne 46803 M. E. Heston (GM) (SM) E. H. Pond, W. L. Geter (B) Number of Salesmen Traveled 2	ASIA	CITY AUTO PARTS 2623 Lincoln Way, W., South Bend 46628 Louise Rhoades, Jr. (GM) (SM) (B) Number of Salesmen Traveled 1	ASIA (2 BR.)	GUARANTEE AUTO STORES, INC. 5611 E. 71st St., Indianapolis 46220 Don Casey (B)	ASIA (50 BR.)
AUTOMOTIVE COLOR & SUPPLY CO. 1251 E. Morgan, Box 4151, Evansville 47711 Karen A. Leas (GM) Ange Kurzendorfer (B) Number of Salesmen Traveled 3	ASIA (3 BR.)	CLIPP AUTO SUPPLY, INC. 151 S. Clark St., Nappanee 46550 James A. Miler (GM) Rodney E. Sump (B)	ASIA AERA (1 MS)	GUY AUTO PARTS, INC. 3402 S. Adams St., Marion 46952 James M. Guy (GM) (SM) Number of Salesmen Traveled 1	AERA (1 BR.) (1 MS)
AUTOMOTIVE DEVELOPMENT 201 W. State, Huntington 46750 Richard W. Bruner (GM)	AERA (1 MS)	COUNTYLINE MACHINE 4459 Allisonville Rd., Indianapolis 46205 Patrick R. Jenkins (GM) (SM) (B)	AERA (1 MS)	HALL BROS. AUTO PARTS 154 Main Cross St., Charlestown 47111 James L. Lathus (GM) (SM) (B) Kenny Krause (B) Number of Salesmen Traveled 3	AERA (1 BR.) (1 MS)
AUTOMOTIVE HARDWARE SERVICE, INC. 1916 S. Calhoun St., Ft. Wayne 46804 Timothy J. Lahrman (GM) (SM) Scott A. Lahrman (GM) (B) Number of Salesmen Traveled 3	ASIA	COX, INC., JOHN S. 222-26 S. 7th St., Terre Haute 47808 Paul H. Gibbons (GM) John Estes (SM) Richard Curtis (B) Number of Salesmen Traveled 4	ASIA (1 BR.) (1 MS)	HAROLD'S AUTO PARTS, INC. 70 S. Jefferson St., Huntington 46750 David A. Scherikal (GM) (SM) Number of Salesmen Traveled 1	AERA (1 MS)
AUTOMOTIVE PAINT & SUPPLY, INC. 401 W. Maumee, Box 276, Angola 46703 J. M. Douglass, Jr. (GM) Number of Salesmen Traveled 2	ASIA	DRAFT ENGINE 18 Carls Dr. Dune Acres, Chesterton 46304	AERA	HARTFORD AUTOMOTIVE SUPPLY 1620 N. Walnut, Box 467, Hartford City 47348 Dave Dell (GM) John Gross (SM) Number of Salesmen Traveled 1	AERA (1 BR.) (1 MS)
AUTOMOTIVE WHOLESALERS, INC. 4321 Vogel Rd., Box 5027, Evansville 47715 Charles C. Leggett, III (GM) (B) Ed Hickley (SM) (B) Number of Salesmen Traveled 2	AERA (2 BR.) (1 MS)	CRAWFORDSVILLE AUTO SUPPLY, INC. 112-114 W. Market St., Crawfordsville 47933 Fred Humphreys (GM)	AERA (1 MS)	HIWAY PARTS, INC. 2829 Buft Rd., Indianapolis 46225	AERA
B & C ENGINE SERVICE, INC. 70 N. Peru St., Box 110, Cicero 46034 John D. Clements (GM) (B) Edward T. Schreiner (SM) (B)	AERA (1 MS)	D & B MACHINE SHOP, INC. 2702 Brill Rd., Indianapolis 46225	AERA	HOECKELE SUPPLIES 125 E. Franklin St., Elkhart 46516 Robert Banker (GM) (B) Number of Salesmen Traveled 1	ASIA
BOR WAREHOUSE CORP. 1127 W. Michigan St., Evansville 47710 Roger A. Fuchs (GM) (SM) (B) Number of Salesmen Traveled 3	AEA (1 MS)	D & M AUTO PARTS 2340 Central Ave., Lake Station 46405 Donald Eleff, Ernie Franzen, Dan Dauvers (GM)	ASIA (3 BR.) (1 MS)	HOOSIER PARTS & GLASS W/SH. 100 Ewing St., Seymour 47274 Tom Reber (GM) Ed Conlin (SM) Joe Clark (B) Number of Salesmen Traveled 12	ASIA (3 BR.) (3 MS)
B-K MACHINE CO., INC. 1215 S. Franklin St., Muncie 47302	AERA	DECATUR ENGINE SERVICE 133 S. 1st St., Decatur 46733 Dici Fessal (GM) (SM) (B)	AERA (1 MS)	IND-AUTO-TRK. PYS. & SERVICE LAKE AUTO SUPPLY, INC. 1411-17 Broadway, E. Chicago 46312 John Martel (GM) (SM) (B) Number of Salesmen Traveled 2	AERA (1 MS)
BABER MOTOR SUPPLY 20-26 E. Canal St., Box 296, Weavah 46992 J. L. Baber (GM) Number of Salesmen Traveled 2	ASIA (1 BR.) (2 MS)	DE LONG PARTS & ACCESSORY CO., INC. 315 S. Union St., Box 849, Kokomo 46901 Raymond Freccarte (SM) Number of Salesmen Traveled 2	ASIA	INDIANA COLDWELD CO. 1457 Bates St., Indianapolis 46201 Russell Harrison, Jr. (GM) (B) Number of Salesmen Traveled 1	AERA (1 MS)
BEACHY MACHINE SHOP 3884 E. County Rd., 400 N., Kokomo 46901 Ears Beechy (GM)	AERA	DELPHI AUTO SUPPLY 127 Water St., Box 7, Delphi 46923	AERA	INDIANA MOTOR PARTS, INC. 200 W. Market St., Crawfordsville 47933 Donald C. Jay (GM) Richard D. Jay (GM) (B) Number of Salesmen Traveled 2	ASIA AERA (1 MS)
		EICHORN'S AUTO PARTS SERVICE, INC. Box 1847, Gary 46409 Ray Shetts (GM) Edward Bekush (B) Number of Salesmen Traveled 2	ASIA (1 MS)	INDY CHEVY 102 N. College Ave., Indianapolis 46202	ASIA
		EVANSVILLE AUTO PARTS, INC. Box 926, Evansville 47706 W. D. (Turk) Walton, Jr. (GM) (SM) Mark Long (B) Number of Salesmen Traveled 5	AERA (1 MS)		

MARTHUN AUTO PARTS, INC. 20723 Evergreen Rd., Southfield 48075 Robert C. Marthun (GM) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)	KLANN AUTO ELECTRIC, INC. 10350 Harper Ave., Detroit 48213 Jim Klann (GM) (B)	AEA	MODERN MOTOR SERVICE, INC. 3292 Lapeer Rd., Box 788, Port Huron 48060 Arthur Hudy (GM) Gregory Hudy (SM) Number of Salesmen Traveled 2	ASIA AEA (1 MS)
HASKETT AUTOMOTIVE MACHINE SHOP 8516 Dose Hwy., Fair Haven 48023 Ronald Haskett (B)	AERA (1 BR.) (1 MS)	KNACK & SKIDMORE RACING ENG. 611 Joy Rd., Battle Creek 49017 Arnold W. Knack, Ralph F. Skidmore (GM)	AERA (1 MS)	MOTOR REB., INC. 17081 Chrysler, Detroit 48203	AEA
HESPERIA AUTO SUPPLY 106 N. Division, Hesperia 49421 Fred Scheffler, John Scheffler (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	KOSM'S AUTO PARTS, INC. 26831 Michigan Ave., Inkster 48141 Mike Kosm (GM) (SM) (B)	ASIA AERA (1 MS)	MOTOR SERVICE & SUPPLY CO. 1169-71 3rd St., Box 26, Muskegon 49443 Merle Carlson (GM) (B) William Nauta (SM) Number of Salesmen Traveled 2	ASIA (1 MS)
HILL PISTON AUTO STORES 90 W. Carleton Rd., Hillsdale 49424	ASIA AERA	LAMB, INC. 107 E. 8th St., Box 1102, Holland 49423	ASIA AERA	NATIONAL OIL SALES 1753 Madison St., Box 239, Muskegon 49442	ASIA
HOLLYWOOD SAM'S AUTO PARTS, INC. 12171 Grand River, Detroit 48204 Sylvester Gurley (GM) Melva Gurley (SM)	ASIA (1 MS)	LARRY'S PARTS HAUS 11915 U.S. 23 S., Box 92, Oshtemo 49766 Larry Price (GM)	ASIA	NICHOLS, INC., CHET Box 1203, Benton Harbor 49022 Wm. A. Nichols (GM) Number of Salesmen Traveled 2	ASIA (2 BR.) (1 MS)
HOLT AUTO SUPPLY, INC. 2423 N. Cedar St., Holt 48842 Larry Meerndorf (GM) Dave Seehase (SM) Dick Seehase (B) Number of Salesmen Traveled 1	ASIA AERA (8 BR.) (3 MS)	LINCOLN PK. PAINTERS SUPPLY & EQUIPMENT 2040 Fort St., Lincoln Pk. 48146 Donald Witt (GM) Mike Orzol (SM) Robert Vargo (B) Number of Salesmen Traveled 12	ASIA (8 BR.)	NORTHERN AUTOBODY SUPPLY Rt. 3, 2370-27 S., Gaylord 49735 B.H. Stilson (GM) Mike Ernst (SM) Roger Finch (B) Number of Salesmen Traveled 4	ASIA (2 BR.)
I. D. J. AUTOMOTIVE MACHINE SHOP 27206 Groesbeck, Roseville 48066 James Marshick (GM) David Marshick (SM)	AERA (1 MS)	LUPLOW'S AUTO SUPPLY, INC., DON 4785 State St., Saginaw 48603 Melvin Sisson (GM) (B) Joseph Murawski (SM) Number of Salesmen Traveled 1	ASIA (1 MS)	NORTHERN AUTO PARTS 18208 John R. St., Detroit 48203	AEA
IMPORT ENGINE REB. 284 Coffax, Benton Harbor 49022	AERA	M & B AUTO PART, INC. Box 5, Gwinn 49841 Jim Hartwig (GM) Chip Nelson (SM)	ASIA (2 BR.) (2 MS)	NORTHERN AUTO PARTS CO. 1756 Barlow, Box 312, Traverse City 49684 Richard O. Arnold (GM) Number of Salesmen Traveled 8	ASIA AERA (8 BR.) (3 MS)
INDUSTRIAL & AUTOMOTIVE SUPPLY CO. 1321 Court St., Saginaw 48602 Jim Martin (GM) Number of Salesmen Traveled 3	AEA	M & M AUTO PARTS CO. 9103 Michigan, Detroit 48210 B. E. Klein (SM) Michael G. Docks (SM) (B) Number of Salesmen Traveled 7	ASIA AERA (3 MS)	NORTHERN REB., INC. 2501 Danforth Rd., Box 607, Escanabe 49829 J. E. Becvar (GM)	AEA
JACKSON AUTOMOTIVE SUPPLY 700 E. Michigan Ave., Jackson 49201	AERA	MAC PHERSON, INC., D. A. County Rd. 653, Box 32, Iron River 49935 John D. MacPherson (GM) (SM) (B) Number of Salesmen Traveled 2	AERA (1 MS)	NORTHERN SUPPLY OF IRON MOUNTAIN, INC. 1236 S. Carpenter Ave., Box 845, Iron Mountain 49801 Robert Rice (GM) Ron Wemfarter (B) Number of Salesmen Traveled 1	ASIA
JOINT, CLUTCH & GEAR SERVICE, INC. DIV. MIDWAY, INC. 1325 Howard St., Box 32755, Detroit 48232 E. E. Kuhn (GM) B. Rickel (SM) Number of Salesmen Traveled 8	ASIA (4 BR.) (5 MS)	MANSFIELD AUTOMOTIVE PARTS CO. 16116-30 W. Warren Ave., Detroit 48228 Julius Berkowitz (GM) (B) David Berkowitz (SM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	NORTHSIDE AUTO. 252 Charles Dr., Holland 49423	AEA
JOYNT AUTOMOTIVE PARTS, INC. 843 N. Mitchell St., Cadillac 49601 Maurice J. Schoperyn (GM)	AERA (1 MS)	MARLETTE AUTO PARTS, INC. 6411 Euclid St., Marlette 48453 Roy Rosquin (GM) Mark Ondrejka (SM) Laurie Anderson (B) Number of Salesmen Traveled 1	AERA (1 MS)	NORTHWESTERN AUTO SUPPLY INC. 1101 S. Division, Grand Rapids 49507 Sam Ashendorf (GM) (B)	AEA (1 MS)
JOYNT, INC., A.H. Corporate Office, 107-1/2 N. Mitchell St., Cadillac 49601 Kenneth G. Joynt (GM) Lucille J. Joynt (SM)	ASIA AERA (1 MS)	MAYFAIR AUTO PARTS, INC. 20417 Van Born Rd., Taylor 48180	ASIA	NOVI AUTO PARTS 43131 Grand River, Box 465, Novi 48050	AEA
J.R.'S CUSTOM ENGINES 2189 Eureka, Wyandotte 48192 Edward Law (GM) Martin Musso (SM)	AERA (1 MS)	MEDENDORP'S, INC. 2701 Peck St., Muskegon Hts. 49444 John A. Medendorp (GM) (SM) (B) Number of Salesmen Traveled 2	ASIA	PAINTERS SUPPLIES OF JACKSON, INC. 1111 E. Michigan Ave., Jackson 49201	ASIA
KALAMAZOO MOTOR & TRANSMISSION, INC. 912 N. Park, Kalamazoo 49007 Steve Kramer (GM)	AERA (1 MS)	MELLIN MORAN, INC., D. 417 Eureka Rd., Box 9, Wyandotte 48192 Bud & Tom Mellin (GM) Bud Mellin (SM) Bud & Roy Mellin (B) Number of Salesmen Traveled 1	AERA (1 MS)	PAINTERS SUPPLY, INC. 406 E. Midland St., Box 674, Bay City 48707 Tom Howell (GM) Dwight Wier (SM) Maie Howell (B) Number of Salesmen Traveled 3	ASIA (2 BR.)
KAMADA CORP. 575 Robbins Dr., Troy 48064	ASIA	MERIDIAN AUTO PARTS, INC. 4980 Park Lake Rd., E. Lansing 48823 Al Wolfe (GM) Gene Henry (SM) Jon Rutkowski (B) Number of Salesmen Traveled 3	AEA	PARSONS BRAKE SERVICE, INC. 201 E. Fountain St., Battle Creek 49017 Gilbert A. Parsons (GM) (B) Number of Salesmen Traveled 1	ASIA (1 MS)
KARR'S AUTO PARTS, INC. 17171 Schaefer, Detroit 48235 Neil G. Sawyer (GM) (B) Leonard Rupert (SM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	MEYERS BROS., INC. 11500 Whittier Ave., Detroit 48224 Arthur S. Meyers (GM) Steven J. Meyers (SM) Number of Salesmen Traveled 3	AEA (1 BR.) (1 MS)	PARTS & EQUIPMENT CORP. 10356 W. Jefferson Ave., River Rouge 48218	ASIA AERA
KENOWA AUTO SUPPLY, INC. 3849 Oakes St., Grandville 49418 John Schuurman (GM) Marv Owen (SM) Number of Salesmen Traveled 2	ASIA (2 BR.)	MICHIGAN AUTOMOTIVE PARTS, INC. 5007 28th St., S.E., Grand Rapids 49508 Dan Wetherby (GM) (B) Joe Wisdom (SM) Number of Salesmen Traveled 3	ASIA AERA (4 BR.) (1 MS)	PARTS PEDDLER, THE 1414 S. Main St., Chelsea 48118 Richard Kolander (GM) Number of Salesmen Traveled 1	ASIA (4 BR.) (1 MS)
KEN'S PARTS & EQUIPMENT, INC. 1131 S. Monroe St., Monroe 48161 Michael L. Hemsath (GM) Number of Salesmen Traveled 1	ASIA	MIDWEST SERVICE CTR. 1710 Hilton Rd., Farmdale 48220	AEA	PAUL AUTOMOTIVE, INC. 207-223 N. Lerch St., Lansing 48914 Maie Wierman (GM) Em Carpenter (SM) Ernie Upton (B) Number of Salesmen Traveled 6	ASIA AERA (8 BR.) (1 MS)
KESSLER ENGINE REBUILDING CO., INC. 2829 Jerome St., Detroit 48212 Robert Bedraus (GM)	AERA	MIDWEST TIRE DISTRIBUTORS, INC. 320 W. Maumee St., Box 307, Adrian 49221 J. C. Ramus (GM) Dan Brown (SM) Clarence Kelley (B) Number of Salesmen Traveled 5	AEA (1 BR.)	PEOPLES AUTO PARTS CO. 3556 Grotel Ave., Detroit 48207 Geron Lacroff (GM) (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)
KEY AUTO SUPPLY 20340 Farmington Rd., Livonia 48152 Vern Sontag (GM) (B) Gary Sontag (SM) (B) Number of Salesmen Traveled 1	ASIA (1 MS)	MILWOOD AUTO SUPPLY, INC. 4235 Portage Rd., Kalamazoo 49001	AEA	PERRY AUTOM. SUPPLY, INC. 4275 Main St., Box 446, Perry 48872 Ed Dubawicz (GM)	ASIA (1 MS)
KIRK'S AUTOMOTIVE, INC. 7715 Traman, Detroit 48204	ASIA	M & T DISTRIBUTING, INC. 131 W. Kalamazoo Ave., Kalamazoo 49007 Nancy McDade (GM) (B) Jay S. Tarpeira (SM) Number of Salesmen Traveled 2	ASIA AEA	PEDMONT AUTO ELECTRIC CO., INC. 19215 Plymouth Rd., Detroit 48228 E. E. Hanson (GM)	AEA

OTIE'S AUTOM. SPECIALTIES 1554 Kenmore Blvd., Akron 44314 William R. Smith (GM) (SM) (B)	AERA	SALTER AUTOMOTIVE CO., INC. 21149 Euclid Ave., Euclid 44117 Stan Wase (B)	ABA	TOMLINSON BRAKE & SPRING SERVICE, INC. 212 S. Elizabeth St., Lima 45801 Robert S. Buchanon (GM) Gene Harrington (SM) (B) Number of Salesmen Traveled 2	ASIA (1 BR.)
P & M AUTO PARTS, INC. 435 W. Main St., Ravenna 44266 Number of Salesmen Traveled 1	ASIA (1 BR.)	SANBORN MOTOR EQUIPMENT CO. 4733 Elm Ave., Box 128, Ashtabula 44004 Donald Mack (GM) (B) Charles Justice (SM) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)	TOMMY'S AUTO SUPPLY, INC. 1920 W. State St., Alliance 44801 Stephen Antonosanti (GM) (B) John Wolfe, Andrew Mitchell (SM) Number of Salesmen Traveled 1	AERA (1 MS)
PARMA AUTO PARTS CO. 5655 Pearl Rd., Parma 44129 Roger Medlen (GM) (B) Thomas Laurence (SM) Number of Salesmen Traveled 1	ASIA (1 BR.) (2 MS)	SANDUSKY COOPERATIVE SALES Box 1139, Sandusky 44870 John Strouse (GM) (B) Tom Boylan (SM) Leonard Berkeley (B) Number of Salesmen Traveled 4	ASIA (1 BR.)	TDOL & TORQUE, INC. DBA PT STOP AUTO STORE 7766 Lake Shore Blvd., Mentor 44060 Jon Erzan (GM) Number of Salesmen Traveled 1	ASIA (1 BR.)
PARTS PLACE, INC. 515 W. Main St., Loudonville 44842 Darlene Phillips (GM) Rodger Bender (B) Number of Salesmen Traveled 1	ASIA (1 MS)	SHRADER TIRE & OIL, INC. 2045 Sylvania Ave., Box 5536, Toledo 43813 James Shrader (GM) John Kruszynski (SM) Number of Salesmen Traveled 8	ABA	TORONTO AUTO PARTS, INC. 904 Franklin Ave., Toronto 43964 Paul C. 'Butch' Simon (GM) (B) Number of Salesmen Traveled 1	ASIA (1 MS)
PAUL'S AUTOMOTIVE, INC. 2600 Tremainsville Rd., Toledo 43613 Donald Donovan (GM) Tim Galespe (SM) Number of Salesmen Traveled 2	ASIA (1 BR.)	SIFERD-HOSSELLMAN CO., THE 129 W. Elm St., Drawer 1, Lima 45801 V. C. Hossellman, Jr. (GM) A. W. Burneson (SM) Jerry James (B) Number of Salesmen Traveled 4	ASIA AERA (3 BR.) (1 MS)	TOWER AUTO PARTS CO., INC. 350 E. 152nd St., Cleveland 44110 Mike Susson, Marlene Lighty (GM) Number of Salesmen Traveled 1	ASIA (1 MS)
PAVEY CO., INC., THE A.L. 611 Mahoning Rd., N.E., Canton 44704 James E. Gantz (GM) (B) Number of Salesmen Traveled 1	ASIA (2 BR.)	SIMMONS EQUIPMENT, INC. 3035 Perkins Avenue, Cleveland 44114 George L. Simmons, Jr. (GM) Number of Salesmen Traveled 2	ABA	TRIANGLE AUTOMOTIVE PARTS, INC. 17170 Broadway, Maple Heights 44137	AERA
PIQUA AUTOMOTIVE, INC. 513-15 N. Main St., Piqua 45356 Harry J. Straker (GM) (SM) Don Widney (B) Number of Salesmen Traveled 1	AERA (1 MS)	SMITH AUTOMOTIVE, INC. 121 N. Ohio Ave., Fremont 43420	AERA	TRIANGLE AUTOM. PARTS, INC. 1440 Mentor Ave., Plainville 44077 James McGee (GM) Number of Salesmen Traveled 1	AERA (1 MS)
PITTLER AUTOMOTIVE SUPPLY, INC. 520 E. Market St., Warren 44481 Lewis Pittler (GM) (SM) (B) Grace Champin, Robert Kurtz (B) Number of Salesmen Traveled 1	AERA (1 MS)	SMYTH AUTOMOTIVE, INC. 4275 Mt. Carmel Tobacco Rd., Cincinnati 45244	ABA	TRIANGLE AUTO PARTS CO. 9700 Buckeye Rd., Cleveland 44104 Jay Trattner (GM) (SM) John Ochi (B) Number of Salesmen Traveled 1	ASIA (1 BR.) (2 MS)
PLACE AUTO PARTS & REPAIR Rt. 1, Delphos 45833 George Place (GM) Floyd Kohorst (SM) Jack Leininger (B)	AERA	SPECKMAN AUTOMOTIVE, INC. 112 S. Front St., Box 296, St. Mary's 45885 Don F. Speckman (GM) Chris S. Speckman (SM) Craig F. Speckman (B) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)	TRIANGLE AUTOMOTIVE PARTS, INC. 1585 E. 40th St., Cleveland 44103	ASIA AERA
PRECISION AUTOMOTIVE MACHINE, INC. 1003 McKinley Ave., S.W., Canton 44707 Kim M. Calk (GM) (SM) (B)	AERA (1 MS)	SPEEDY AUTO PARTS 115 W. Front, Dover 44622 Jeffery Koller (GM) (B) Mike Edwards (SM) Number of Salesmen Traveled 1	ASIA	TRUCK ELECTRIC SERVICE, INC. 1646 Parry Rd., S.W., Canton 44708 Richard A. Brothers (GM) (B) Ernest E. Wilson (SM) Number of Salesmen Traveled 2	AEA
PRO-CAR ASSOCIATES, INC. 1100 Triplet Blvd., Akron 44306 C. Wright, Jr. (GM) Don Wilhelm (SM)	AERA AEA (1 MS)	STANDARD MOTOR PARTS, INC. 580 Grant St., Akron 44311 Loretta Lang (GM) Donna Craver (SM) Beverly Staats (B) Number of Salesmen Traveled 2	ASIA AEA (1 MS)	UNITED AUTO PARTS, INC. 3912 Youngstown Rd., Warren 44484 Bill Henkel (GM) Karl Lyngstad (B)	ASIA (2 BR.) (1 MS)
R & R ENGINE & MACHINE 1004 Swartz Rd., Akron 44319 Richard Yates (GM) Ken Miller (SM) Bill Milton (B) Number of Salesmen Traveled 3	AERA (1 MS)	STANDARD PARTS, INC. 800 S. Patterson Blvd., Dayton 45402 W. C. Schultz, Jr. (GM) Number of Salesmen Traveled 3	ASIA (1 BR.) (1 MS)	UNIVERSAL JOINT SERVICE, INC. 1875 E. 40th St., Cleveland 44103 Ron Hooker (GM) Carl Ramser (SM) Tom Polk (B) Number of Salesmen Traveled 5	ASIA (1 BR.) (2 MS)
RAVENNA AUTO PARTS CORP. 120 E. Lake St., Ravenna 44266 Rick Schmidt (GM) Number of Salesmen Traveled 1	AERA (1 MS)	STEEGO AUTO PARTS, INC. 317 Wick Ave., Box 88, Youngstown 44501 Tod Burchfield (SM) Eugene Kungure (B) Number of Salesmen Traveled 4	ASIA (2 BR.) (1 MS)	UNIVERSAL MOTOR PARTS, INC. 202 N. State St., Marion 43302 James S. Tennbaum (GM) (SM) Larry Craig (B) Number of Salesmen Traveled 2	ASIA (1 BR.) (1 MS)
RAY-KD PRODUCTS, INC. 4850 Van Epps Rd., Cleveland 44131 Larry Rako (GM) (SM) (B) Number of Salesmen Traveled 4	ASIA (1 BR.)	STEEGO PARTS CORP. 477 N. Front St., Columbus 43215 Joseph P. Hannan (GM) Douglas N. Theyer (SM) William Wolfe (B) Number of Salesmen Traveled 5	ASIA	VALLEY ENGINE SERVICE 6320 Wiehe Rd., Cincinnati 45237	AERA
RELIABLE AUTO PARTS 1020 S. Main St., Bryan 43506 Ron Elts (GM)	ASIA	STEELE'S, INC. 406 W. Market St., Lima 45802 Gary L. Coats (GM) Tommy Quatman (SM) Steve Dum (B) Number of Salesmen Traveled 10	ASIA (3 BR.) (2 MS)	VANGUARD AUTOM. ENTERPRISES 942 W. Liberty St., Box 405, Medina 44258	AERA
RELIABLE AUTO PARTS CO. 809-15 Boulevard, Dover 44622 Melvin L. Erb (GM) (B) Deborah Parry (SM) Number of Salesmen Traveled 2	ASIA AERA (1 BR.) (1 MS)	SUPERIOR AUTO PARTS, INC. 35598 Vine St., Eastlake 44094 Stanley Starc (GM) Marvin Kravitz (SM) Richard Kravitz (B)	ASIA (1 MS)	WADSWORTH AUTOMOTIVE 772 College St., Wadsworth 44281	AEA
RIM & WHEEL SERVICE, INC. 1014 Gest St., Cincinnati 45203	ASIA	SUPERIOR AUTO SUPPLY, INC. 1001 Turner Ave., Cambridge 43726	ASIA	WARD'S AUTO PARTS, INC. 470 S. Street, S.E., Warren 44483 Ralph Morell (GM) Rich Lilly (SM) Ruth Desantis, Robert Brinks (B) Number of Salesmen Traveled 2	ASIA AERA (1 MS)
RIVERSIDE ENGINES, INC. 30 Riverside Dr., Box 870, Tiffin 44883 Jan L. Redel (GM)	AERA (1 MS)	SVOBODA'S AUTOMOTIVE INC. 2823 E. Walling Rd., Broadview Hts. 44147 Robert Svoboda (GM) Timothy R. Hendricks (SM) (B)	ASIA (1 MS)	WARTHOR AUTO ELECTRIC, INC. 323 W. 4th St., Box 466, Dover 44622 Don Krebs (GM) Jake Warther (SM) Martin K. Warther (B) Number of Salesmen Traveled 2	AERA
ROSCO AUTOMOTIVE INT'L. CORP. 2189 S. James Rd., Columbus 43232 Alan L. Rosen (GM) William R. Kunz (SM) Alfred I. Rosen, Mark D. Rosen (B) Number of Salesmen Traveled 2	ABA (1 BR.)	TOWN AUTO ELECTRIC, INC. 220 S. 3rd St., Steubenville 43952	AEA	WEILAND AUTO PARTS 2235 Co. Rd. 308, Bellevue 44811	ASIA
ROSS' AUTOMOTIVE MACHINE CO. 1763 N. Main S.E., Niles 44446 Ross J. Lombardi (GM) Susan Lombardi (SM) Number of Salesmen Traveled 1	AEA (1 MS)	TOLEDO AUTO ELECTRIC, INC. 1717 Monroe St., Box 737, Toledo 43695 Gunnard Rubins (GM) George Bussow (SM) Number of Salesmen Traveled 3	AEA	WELDERS SALES & SERVICE, INC. 65 Essex St., Youngstown 44502 M. H. Sands (GM) S. H. Sands (SM) (B) Number of Salesmen Traveled 2	ASIA
ST. CLAIR AUTO PARTS, INC. OF CLEVELAND 6011 St. Clair Ave., Cleveland 44103 Dale W. Launder (GM)	AEA	TOLEDO AUTO & TRUCK SUPPLY, INC. 5809 Woodville Rd., Toledo 43619 James Campbell (GM) Richard Campbell (SM) (B) Number of Salesmen Traveled 2	ASIA (1 BR.) (1 MS)	WELLOCK AUTO PARTS CO. 424 W. Exchange St., Akron 44302	ASIA

WERNER AUTO ELECTRIC AEA
742 Wooster Rd., W., Barberton 44203

WESTOVER AUTO PARTS, INC. AERA
3334 S. Cleveland-Massillon Rd., Norton 44203
(1 MS) C. R. Westover (GM) (SM) Thomas R. Zajac, Jr. (B)

WHITE HALL AUTO PARTS, INC. ASIA
4033 E. Main St., Columbus 43213

WINER MOTORS, INC., S&M ASIA
3417 E. Waterloo Rd., Box 6258, Akron 44312
Harvey Winer (GM)

WOLF & CO., W.M. ASIA
6215 Carnegie Ave., Cleveland 44103
Marvin Wolf (GM) (SM) Joseph Wolf (B)
Number of Salesmen Traveled 2

WOODS AUTO SUPPLY, INC. ASIA
907 Oakwood Ave., Napoleon 43545
(1 MS) Lester Kruse (GM) Kenneth B. Woods (B)

WYAN PARTS & SERVICE, INC. ASIA
368 Commerce St., Box 198, Tallmadge 44278
(1 BR.) Randal Wyan (GM) Dennis Jones (SM)
(2 MS) Donald Reed (B)
Number of Salesmen Traveled 2

NEW YORK

AL WILL AUTO SUPPLY ASIA
2247 Filmore, Buffalo 14214
(1 BR.) Albert Kershanbaum (GM) Gerald Kershanbaum (SM)
Number of Salesmen Traveled 4

ALJ AUTO PARTS, INC. ASIA
1805 Jancho Trpk., New Hyde Park 11040
(2 BR.) George Rozas (GM) Frank Parberg (SM)
(1 MS) Number of Salesmen Traveled 1

A.B.I. SERVICE AERA
1515 Man St., Port Jefferson Sta. 11778
(4 BR.) John Kaczrow (GM)
(1 MS)

ALL CORE AEA
61 Grove St., Hempstead 11550
Ray & Jim Gressah (GM) Bill Grm (SM) Bob Bertram (B)
Number of Salesmen Traveled 3

A & P AUTO PARTS AEA
Rt. 11, Box 310, Cicero 13039
(1 BR.) William Abold (GM) Edward Ottar (SM) Larry Knox (B)
(1 MS) Number of Salesmen Traveled 4

A. R. MIDWAY TRUCK & TRAILER SALES, INC. AERA
Rt. 14, Box 3, Lakemont 14857
(1 MS) Art Rizzano (GM) Annetto Rizzano (B)
Number of Salesmen Traveled 1

A.R.F. AUTO-BODY PAINT & SUPPLIES ASIA
23 N. White St., Poughkeepsie 12601

ABBEY AUTO PARTS CORP. ASIA
355 Hicksville Rd., Bethpage 11714
(1 MS) Robert Caccho (GM) (SM) (B)
Number of Salesmen Traveled 2

ABRAMI AUTOMOTIVE ELECTRICAL SERVICE AEA
2156 Flatbush Ave., Brooklyn 11234
(1 BR.) Vincent Abrami (GM) (SM)
(1 MS) Number of Salesmen Traveled 2

ALBANY UNIVERSAL AUTO PARTS CORP. ASIA AERA
900 Broadway, Albany 12207
(1 MS) Harold F. Northrup (SM) (B)
Number of Salesmen Traveled 3

ALL-PAR AUTOM. DIST. ASIA
2331 12th Ave., New York 10027
Charles Rushanna (GM) Loren Whitley (SM)
Sidney Wartzman (B)
Number of Salesmen Traveled 2

ALLSTATE CYLLINDER HEAD REB., INC. AERA
79 Guernsey St., Brooklyn 11222

AMERICAN AUTO BODY SUPPLIES II ASIA
27-10 Astoria Blvd., Astoria 11102
(2 BR.) Richie Gluck (GM) Vin Comparotto (SM) Robert Firmery (B)
Number of Salesmen Traveled 2

ANDREWS IGNITION SERVICE, INC. AEA
2525 Pine Ave., Niagara Falls 14301
(1 MS) Robert L. Andrews (GM) (B) Peter Arnes (SM)
Number of Salesmen Traveled 1

ANTHONY'S AUTO & MARINE ELECTRIC AEA
365 N. Sea Rd., Southampton 11968
Francis Lasorsa (GM) Anthony F. Brucia (SM) (B)

AUTO FINISHERS SUPPLY CO. ASIA
3100 Ash Rd., Vestal 13850

AUTO PARTS 'R' US, INC. ASIA
2172 Coyle St., Brooklyn 11229
(1 MS) John Nappo (GM) George Greaux (SM)
Number of Salesmen Traveled 1

AUTO PARTS SUPPLY ASIA
Cayuga Mall, Ithaca 14850

AUTO PARTS SUPPLY ASIA
DIY. MONKSON IND.
7510 S. Jefferson, Box 27, Paleski 13142
Timothy J. Crocker (GM) James R. Rishel (SM) Kay Gill (B)

AUTOBODY OF SCHEENECTADY, INC. ASIA
777 State St., Schenectady 12307
Wesley McCullough (GM)
Number of Salesmen Traveled 1

AUTOMOTIVE BRAKE CO. OF NEWBURGH, INC. ASIA
300 Temple Hill Rd., New Windsor 12550
(1 MS) James Challandes (GM) Robert E. Lorenzen (B)
Number of Salesmen Traveled 5

AUTOMOTIVE ELECTRIC SERVICE CORP. ASIA
Box 444, Woodside 11377
Jerry Judelson (GM) Richard Judelson (B)
Number of Salesmen Traveled 10

AUTOMOTIVE PRECISION MACHINE AERA
Rt. 9W & Grand St., Box 611, Highland 12528
(2 BR.) (1 MS)

AUTOMOTIVE SOUND SYSTEM, INC. AEA
6850 Man St., Wakearville 14221

B & L AUTOMOTIVE AERA
350E Heathcote Ave., Bronx 10475

B & P AUTO PARTS ASIA
BOPAT, INC.
(1 MS) 441 E. Main St., Malone 12953
James Dora (GM) Daniel Bova (SM) Donald Ashline (B)
Number of Salesmen Traveled 1

B & V CRANKSHAFT GRINDING, INC. AERA
813 S. 1st St., Romkonoma 11779
Bob Odofson (GM) Val Henderson (SM)

BAY AUTO II ASIA
2083 Richmond Terr., Staten Isl. 10302

BAUER AUTO PARTS, INC. ASIA
362 Old Country Rd., Hicksville 11801
Robert Bayer (GM) Roy Bayer (SM)
Number of Salesmen Traveled 1

BEJAY AUTO PARTS, INC. ASIA
E. Main St., Riverhead 11901
(1 BR.) Herbert Loewenthal (GM) (SM) (B)
(1 MS) Number of Salesmen Traveled 1

BEL-MAR AUTO PARTS, INC. ASIA
136 38 Broadway, Whitehall 12887
(1 MS) Janice Austin (GM) (B) Stanley Austin (SM) (B)
Number of Salesmen Traveled 1

BERGH AUTOMOTIVE, INC., H. T. ASIA
380 S. Main St., Elmira 14904
Ross Struble (SM) (B)
Number of Salesmen Traveled 1

BEVAL ENGINE & MACHINE CO., INC. AERA
403 Suffolk Ave., Central Islip 11722
(1 MS) Michael Fuoco (GM) John Polleschi (SM)
Number of Salesmen Traveled 2

BINGHAMTON MOTOR PARTS ASIA
279 Front St., Binghamton 13906
Burt Boucher (GM) (B) Jeff Calvey (SM)
Number of Salesmen Traveled 2

BOBCA AUTO PARTS CORP. AERA
72 Jayne Blvd., Port Jefferson Station 11776

BOB'S AUTO PARTS AERA
108 Old Rt. 6, Carmel 10612
(1 MS) Robert J. Tompkins (GM) James R. Tompkins (SM)
Robert S. Tompkins (B)

BONDED REBUILDERS, INC. AERA
28 Agar St., Yonkers 10701
(1 BR.) Thomas B. Abruzzese (GM) Roger J. Drezek (SM)
(1 MS) Michael J. Abruzzese (B)
Number of Salesmen Traveled 5

CLOYEN AUTO PARTS, INC. ASIA
2807 White Plains Rd., Bronx 10467
(2 BR.) Mark Bekin (GM) (SM) (B)
(2 MS) Number of Salesmen Traveled 4

COLE AUTO SUPPLY, INC. ASIA
2953 Hamburg St., Schenectady 12303
(1 BR.) John L. Cole (GM) Dan L. Cole (SM)
(1 MS) Chuck Torbox, Jr. (B)
Number of Salesmen Traveled 1

COLLINS CO., JOHN & DOLPH AERA
23 E. Merrick Rd., Freeport 11520

COLVIN MOTOR PARTS OF L.L., INC. AERA
2273 Babylon Trpk., Merrick 11566
Duane Duryea (GM) John D'Amato (SM) Sandra Securita (B)

CONKLIN AUTO PARTS ASIA
878 Conklin Rd., Box 85, Binghamton 13903
(1 BR.) Jack Smith (GM) (B) Joe Smith (SM) (B)
Number of Salesmen Traveled 1

COPPER, INC., ARNOLD R. ASIA
156 E. Hawthorne Ave., Valley Stream 11580

CORNING AUTO SUPPLY CO., INC. ASIA
107-13 W. Market St., Box 97, Corning 14830

CORTLAND AUTO SUPPLY CO., INC. ASIA
12-16 Court St., Box 507, Cortland 13045
Floyd W. Starr, Jr. (GM) Rick Starr (SM)
Number of Salesmen Traveled 1

COUNTRY BOY, INC. ASIA
501 Great Neck Rd., Great Neck 11021
Warne Marans (B)

CREWS AUTOMOTIVE ASIA
19 W. Main St., Ebdodge 13060
(1 MS) Bill Crews (GM) Tim O'Brien (SM)

CROWLEY SUPPLY CO., INC. ASIA
2817 6th Ave., Box 634, Troy 12181

CROWN CITY AUTO CENTER ASIA
Rt. Nos. 13 & 281, Cortland 13045

CY'S STEWART AUTOMOTIVE CO., INC. ASIA AERA
7503 Niagara Falls Blvd., Box 157, Niagara Falls 14304
(1 MS) Joseph M. Bruno (GM) Andrew Ortnier (SM)
Susan Rager, Justin Genter (B)
Number of Salesmen Traveled 2

D & G AUTO PARTS, INC. ASIA
1733 Rt. 9, Carlton Pl. 12065

D.P.S. AUTOMOTIVE, INC. AERA
10 Kraft Ave., Albany 12205
(1 BR.) Donald G. Green (GM) (SM)
(1 MS) Number of Salesmen Traveled 1

DAYTON AUTO ELECTRIC, INC. ASIA
103-12 101 St., Ozona Pl. 11417
Joseph Petto (GM)

DEVENER AUTOMOTIVE SUPPLY, INC. ASIA
236-240 W. Main St., Box 625, Batavia 14020

DICKINSON AUTOMOTIVE MACHINE SHOP, INC. AERA
49B Court St., Binghamton 13904

DIESING SUPPLY CO., INC. ASIA AERA
489-93 Main St., Poughkeepsie 12601
(1 MS) R. J. Diesing (GM) W. P. Diesing (SM) (B)

DOEHNER'S RELIABLE MACHINE & MOTOR PARTS AERA
CO., INC.
940 N. Saline St., Syracuse 13208

DONNELLY DIESEL SERVICE 25 Diggins St., Buffalo 14206 Jim Cavinaugh (GM) Jerry Butka (B) Number of Salesmen Traveled 4	ASIA (1 MS)	HUNTINGTON WAREHOUSE, INC. 80 E. Main St., Huntington 11743 Robert Ciculla (GM) Jack Vigorito (SM)	ASIA (1 MS)	NEAL AUTO SUPPLY 1786 Empire Blvd., Webster 14580 Michael Heberger (GM)	ASIA
DON'S AUTO PARTS, INC. Clinton-Rossier Plaza, Cheektowaga 14206 Donald R. Moreno (GM) (B) William R. Manns (SM) Number of Salesmen Traveled 2	ASIA (2 MS)	HUNT'S AUTO SERV., DAVE 103 Weaver St., Schenectady 12305	AERA	NESENZAHN AUTO PARTS, INC. 1225 Portland Ave., Rochester 14621 Leonard B. Mesenzahn (GM) (B) James Gayton (SM) Lawrence Miller (B) Number of Salesmen Traveled 6	ASIA
DUTCH HOAG AUTOMOTIVE 130 W. Morris St., Bath 14810	ASIA	HUTCHINGS CARBURETOR SERVICE, INC. 375 Court St., Binghamton 13904	AEA	MERRIFIELD AUTO ELECTRIC SERVICE, INC. 45 Riley Ave., Plattsburgh 12901 Edmund R. Merrifield (GM)	AEA
EDMUND ENG. 610 Nostrand Ave., Union Dale 11553 Robert Edmund (GM) Gary Yorks (SM) Brendan Carrilli (B)	AERA (1 MS)	HUTCHINS AUTOM. MACHINE 7510 Porter Rd., Niagara Falls 14304 John L. Hutchins (GM) Mike Bumpers (SM) Number of Salesmen Traveled 5	AERA (3 BR.) (1 MS)	METRO AUTO BODY SUPPLY 46-23 72nd St., Woodside, L.I. 11377 Ray Baxter (GM) John Morstadt (SM) Arthur Holtzman (B) Number of Salesmen Traveled 2	ASIA
ELLINWOOD AUTO PARTS, INC. 14 Mechanic St., Norwich 13815 Richard M. Ellinwood (GM) Alvin Thompson (SM) Ron Brooks (B) Number of Salesmen Traveled 3	ASIA AERA (2 BR.) (1 MS)	KE'S AUTO PARTS, INC. 3 Cedar Pl., Monticello 12701 Michael Wagnick (GM) Number of Salesmen Traveled 1	AERA (1 MS)	MIDNIGHT AUTO PARTS, INC. 3231 3rd Ave., New York 10451 Pedro Negron (GM) Raul Cobco (SM) Carlos M. Bracero (B)	ASIA
ENGINE TECHNOLOGY, INC. Box 322, Lake Grove 11755	AERA	INTERSTATE AUTO PARTS CO. 1320 Park St., Peekskill 10566 Lawrence Wolfson (GM) (SM) (B) Number of Salesmen Traveled 2	ASIA (1 MS)	MILLER'S AUTO PARTS, INC. 37-42 58th St., Woodside 11377 Sanford Finkelstein (GM) (B) Elbot Finkelstein (SM) Number of Salesmen Traveled 5	ASIA (1 BR.) (1 MS)
ESTATE MOTOR & MACHINE 41-25 216th St., Bayside 11361 Scott Francosuwii (GM)	AERA (2 MS)	ISLAND PARTS & PAINTS, INC. 304 Merrick Ave., Merrick 11566 Anthony Wysocki (GM) Al Andrews (SM) Richard Zito (B) Number of Salesmen Traveled 4	ASIA (2 BR.)	MISTER AUTO, INC. 3444 Bailey Ave., Bronx 10463 Vinco Moccia (GM) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)
EVEREADY MOTOR EQUIP. CO. INC. 900 Fulton St., Box 492, Brooklyn 11238 A. J. Ingeman (GM) W. W. Walter (SM) (B) Number of Salesmen Traveled 2	ASIA	ITHACA AUTO PARTS, INC. 629 W. Buffalo St., Ithaca 14850 Lawrence Teeter (GM) Robert M. Srika (B)	ASIA (1 MS)	MOLIN-TAYLOR, INC. 1200 Niagara St., Box B, Sta. G, Buffalo 14213 Carl Molin, Jr. (GM) Ray Vignaron (SM) Neil Bedall (B) Number of Salesmen Traveled 10	ASIA AERA (24 BR.) (3 MS)
F & W PARTS, INC. 211 Clinton St., Penn Yan 14527	AEA	J. S. AUTO SUPPLY CO., INC. 1080-B2 E. 2nd St., Jamestown 14701 James Spoto (GM) (SM) Joseph Spoto (SM) Jerry Spoto (B) Number of Salesmen Traveled 3	AERA AEA (1 BR.) (1 MS)	MOORE'S AUTO PARTS, INC. 2086 Niagara Falls Blvd., Tonawanda 14150 Mike Healey (GM) (SM) Walt Moore (B) Number of Salesmen Traveled 1	ASIA (1 MS)
FERGUSON AUTO PARTS 3200 Chestnut St., Oneonta 13820 Richard Platt (SM) Roger H. Platt (B) Number of Salesmen Traveled 1	ASIA	J & T AUTOMOTIVE, INC. FASTENER DIV. 954 Spencer St., Syracuse 13204	ASIA	MOTIVE PARTS CO., INC. 20 Beechwood Ave., Port Washington 11050	AERA
51 HOWARD RD., INC. 51 Howard Rd., Rochester 14606 Aron Sobolew (GM)	ASIA	JACK W. & S. AUTO SUPPLY, INC. 1845 Flatbush Ave., Brooklyn 11210	ASIA	ONEONTA TIRE & AUTO PARTS, INC. 20 River St., Box 607, Oneonta 13820 Thomas F. Monser (SM) Susan L. Conway (B) Number of Salesmen Traveled 4	ASIA AERA (1 MS)
FIREHOUSE AUTO PARTS, INC. 112 M4 St., Troy 12180 Kevin J. Reyer (GM) (SM) (B)	ASIA	JEN-S AUTO PARTS, INC. 5076 Jancho Trpk., Connacht 11725 Gary Hart (GM) Fred Gregory (SM) Sal Scanno (B) Number of Salesmen Traveled 1	ASIA (1 MS)	O'SHEA AUTO PARTS, INC. 76 N. Main St., Cortland 13045 James B. O'Shea (GM) John O. O'Shea (B)	ASIA (2 BR.)
FITZPATRICK AUTOMOTIVE, INC. 8240 Main St., Wilkamsville 14221 Number of Salesmen Traveled 1	ASIA	JOE'S ENGINE REBUILDING & PARTS, INC. Rt. 364 & Maple Ave., Penn Yan 14527 Joseph Alexander (GM)	AERA (1 MS)	OXFORD AUTO PARTS, INC. 20 S. Canal St., Box 331, Oxford 13830	ASIA
FLYNN'S AUTOMOTIVE, INC. 333 2nd Ave., Box 217, Troy 12182 Michael G. Flynn (B) Number of Salesmen Traveled 2	AERA (1 BR.) (1 MS)	JOHN'S TRUCK PARTS RR 1, Box 428, Wurtsboro 12790	ASIA	P.G.I. AUTO PARTS 1182 N. Goodman St., Rochester 14609	ASIA
FOGARTY BROS. 172-21 Liberty Ave., Jamaica 11433 Joseph W. Schmitt (GM) (SM) (B)	ASIA (1 MS)	JOHNSON'S AUTOMOTIVE SUPPLY CO., INC. Aletta St., Box 335, Saratoga Springs 12866 Number of Salesmen Traveled 4	AERA (1 BR.) (1 MS)	P.J. AUTO PARTS Box 70, Patchogue 11772	ASIA
FORSYTHE MOTOR PARTS, INC. 208 Leavenworth Ave., Syracuse 13204 C. Fred Forsythe (GM) Number of Salesmen Traveled 1	ASIA (1 BR.)	K. & M. MOTOR & PARTS CO. 18 Lewis St., Binghamton 13901	ASIA	PACHMAN AUTO PARTS, INC. 214 Mohawk St., Hartum 13350 Joel McGovern (GM)	ASIA
FREY, THE WHEELMAN, INC. 41-51 E. Tupper St., Buffalo 14203 H. L. Fritz (GM) R. M. Fritz, H. Eckert (SM) H. J. Fritz, Joe Ando, G. H. Fritz, J. Keefe (B) Number of Salesmen Traveled 10	ASIA (4 BR.) (1 MS)	MACHINE WORLD, LTD. 141 Albany Ave., Amherst, L.I. 11701 Water Branch (GM)	AERA	PARROW'S AUTOMOTIVE SERVICE, INC. 45 W. Main St., Waterloo 13165 David Parrow (GM) Number of Salesmen Traveled 1	AERA (1 MS)
G&B MOTOR PARTS, INC. 36-15 Vernon Blvd., Long Island City 11108	AERA	MAC'S MACHINE SHOP 1 Pleasant View Ave., Monticello 12701	AERA	PATTERSON'S AUTO PARTS-MASS., INC. 342 E. Orvis St., Massena 13662 Gary Rowell (GM) Glenn Henry (B) Number of Salesmen Traveled 1	AERA AEA (1 MS)
HILL, INC., HENRY H. 3109 W. State St., Olean 14760 Donald J. Ditz (GM) (SM) (B) Number of Salesmen Traveled 2	AEA (1 MS)	MANLE AUTO PARTS, INC. 44 Lake Ave., Saratoga Springs 12866 Richard Allen (GM) Alan Hall (SM) (B) David Leman (B) Number of Salesmen Traveled 4	ASIA (5 BR.) (1 MS)	PATTERSON'S AUTO PARTS, INC. Ozark Market St., Rt. 4, Potsdam 13676 Jerry Lajo (GM)	AERA (2 BR.) (2 MS)
HOLLERAN'S AUTO ACC., INC., TOM 1489 Cedar St., Elms 14904 Douglas Gardi (GM)	AERA (1 MS)	MARCS AUTO PARTS CORP. 690 Jerusalem Ave., Unadilla 11553 George Rice (B)	AERA (1 MS)	PAUL'S CYLINDER HEAD CO., INC. 106-23 51st Ave., Corona 11368	AERA
HONEYE FALLS AUTO PARTS, INC. 4 Ontario St., Honeye Falls 14472 William Soehner (GM) Robert Levine (B) Number of Salesmen Traveled 1	ASIA (3 BR.) (1 MS)	MARSUE CORP THE CENTRAL AUTOMOTIVE SUPPLY Rt. 64118, Mahopac 10541	AERA	PEARCE AUTO SUPPLY, INC. 51 E. 3rd St., Dunkirk 14048 James Pearce (GM) Number of Salesmen Traveled 2	ASIA (2 BR.)
		MARTH AUTO SUPPLY, INC. 24 Bailey Ave., Buffalo 14220 Frank Marth (GM) Mark Marth (SM) Michael Marth (B) Number of Salesmen Traveled 1	ASIA	PEE GEE AUTO PARTS, INC. 6328 Ave. N., Brooklyn 11234 Patsy Guadagno (GM) Scott Guadagno (SM)	AERA (1 MS)
		MATTITUCK AUTOMOTIVE MACHINE SHOP, INC. Main Rd., Box 1148, Mattituck 11952	AERA	PENN YAN AUTO PARTS, INC. 12-18 Maiden Ln., Box 436, Penn Yan 14527 Willy Muchler (GM) Dale Walker (SM) Ron Switzer (B)	ASIA

PRECISION AUTOMOTIVE 16 Maple Ave., Homer 13077 Joseph C. Spisak, Jr. (GM)	ASB (1 MS)	BERRA AUTOTECHNICA INC. 1 Valhalla Pl., Box 78, Valhalla 10695	AERA	TRUCO ENGINE SERVICE 705 Clinton St., Buffalo 14210	AERA
PRECISION CYLINDER HEAD SERV., INC. 1420 Church St., Unit 'C', Bohemia 11718 Matthew Schmidt (GM) Richard Hausbold (SM)	ASB	BROME AUTO PARTS 2988 Auburn Rd., Seneca Falls 13148 Angelo Simone (GM) (B) John Studwell (SM) Number of Salesmen Traveled 1	AEA (2 BR.)	TURNPIKE AUTO PARTS, INC. 3024 Jericho Trpk., East Northport 11731 Jim Silva (GM) Ed Ferraro (B) Number of Salesmen Traveled 1	AERA (1 MS)
QUALITY AUTOBODY SUPPLY 3712-9W, Saugerties 12477	ASB	SOUND TIRE & SUPPLY CO., INC. 108 Mamaroneck Ave., Mamaroneck 10643	AEA	TWIN CITY AUTO PARTS, INC. 279 Young St., Tonawanda 14150	ASIA
R.C. ENGINE REB. 2048 Utica Ave., Brooklyn 11234	ASB	SOUTH END WAREHOUSE 158 Mill St., Liberty 12754 Leonard Steinberg (GM) (B) Reuben Steinberg (SM) (B) Number of Salesmen Traveled 3	ASIA AERA (1 MS)	USA #1 AUTOMOTIVE MACH. SHOP, INC. 795 Canal St., Syracuse 13210 Patrick L. Manning (GM) William Baker (B)	AERA (1 MS)
REGIONAL PARTS, INC. 369 Jefferson Rd., Rochester 14823 Roger Babcock (GM) Craig Julian (SM) David M. Appelbaum (B)	AGI	SOUTH SHORE MOTIVE PARTS CO., INC. 225 Merrick Rd., Lynbrook, L. I. 11583 Harold W. Korshin (GM) Robert W. Korshin (SM) (B) Number of Salesmen Traveled 2	ASIA AERA (1 MS)	U-SAVE AUTO STORES, INC. Main St., Box 386, Whitney Point 13882	ASIA
RCH/TRACK ENT., INC. dba RELIABLE AUTO PARTS CO. 181 W. Main St., Amsterdam 12010 Gene Richards (GM) Bob Tracti (SM)	ASB CBL	STAR CRANKSHAFT & ENG. REB., INC. 40-42 Pennsylvania Ave., Port Jervis 12771	AERA	VALLEY AUTOMOTIVE & MACHINE CO. Calky Ave., Box 122, New Hampton 10958	AERA (1 MS)
RIDGE AUTO MARINE SUPPLY Rt. 25 & Randall Rd., Box 191, Ridge 11961	ASB	STATE WAREHOUSE DISTRIBUTORS 33-46 Prince St., Flushing 11354 David Ruthman (GM) (B) Mark Klein (SM)	ASIA	VALLEY MOTOR & MACHINE CO. Schwartz Rd., Box 624, Baldwin Pl. 10505 Paul Casarino (SM)	AERA
RITTER'S AUTO ELECTRIC & BATTERY SERV., INC. 1493 Cedar St., Elmsira 14904 William H. Ritter, Jr. (GM) (SM) (B) Number of Salesmen Traveled 2	ASB	STERHARDT, INC., J. M. 340-44 Central Ave., Albany 12206 F. J. Sterhardt (GM) Dick Rosenberry (B) Number of Salesmen Traveled 2	ASIA (1 BR.)	VAN'S MACHINE SHOP 118 Genesee St., Rochester 14811 B# Van De Weghe (GM) Dave Krambel (SM)	AERA (1 MS)
RIVERHEAD BRAKE SERV. 981 E. Main St., Riverhead 11901	ASB	ST. JAMES MACHINING 821 Lake Ave., St. James 11780 Thomas Tafford (GM)	AERA (1 MS)	VAN BROCKLIN & SON, INC., C. Rt. 49 River Rd., Box 161, Marcy 13403 C. E. Van Brocklin (GM) P. De Gault (B) Number of Salesmen Traveled 2	ASIA
ROCHESTER LEAD WORKS, INC. 76-100 Anderson Ave., Rochester 14607 Vernon W. Kalaska (GM) James A. Garvey (SM) Number of Salesmen Traveled 4	ASB	STORM CRANKSHAFT GRINDING & WELDING CORP. 511 Homestead Ave., Mt. Vernon 10550 Gerard Castro (GM)	AERA (1 MS)	VAN NEST AUTO PARTS, INC. 1765 Bronzdale Ave., Bronx 10462 Frank Pastore (GM) Joseph Pastore (SM) Frank Pastore, Jr. (B) Number of Salesmen Traveled 1	ASIA (1 MS)
ROCHESTER MAGNETO & STARTER SERVICE, INC. 101 Railroad St., Rochester 14609 Karl Metzky (GM) John Merriman (B) Number of Salesmen Traveled 1	ASB	SURCOUSE AUTO PARTS, INC. 6018 Corporate Dr., Box 6961, Syracuse 13057	ASIA	VANCE CO., INC., JOHN E. 58 Ave. 'D', Box 548, Geneva 14456 Raymond C. Abraham (GM) Number of Salesmen Traveled 1	ASIA
ROCKLAND STANDARD GEAR, INC. 18 Old Trpk. Rd., Nanuet 10954 Mike Weinberg (GM) Brian Johnston (SM)	ASB	TABS MOTORS, INC. 250-60 Jencho Trpk., Village Of Bellerose, Floral Park 11001 John M. Louros (GM) Michael Louros (SM) John M. Louros (B) Number of Salesmen Traveled 1	AERA (1 BR.) (1 MS)	PENNSYLVANIA	
RODS, BABBITT & MACHINE WORKS 712 E. 135th St., Bronx 10454 Frank Baccio (GM)	ASB (1 MS)	TAFCO AUTO PARTS, INC. 161 Terry Rd., Smithtown 11787 Len Calinoff (GM) Mike Calinoff (SM) Bob Eberhardt (B) Number of Salesmen Traveled 2	ASIA (1 MS)	A-B-C AUTOM., INC. 34 W. Hancock St., Box 108, Lansdale 18446 Marlyn T. Jones (GM)	ASIA AERA (1 MS)
ROME UNIT PARTS, INC. 721-23 Erie Blvd., W. Rome 13440 Edward B. Callahan (GM) (SM) Al Barone (B) Number of Salesmen Traveled 1	ASB	TAMCO, INC. 136-01 35th Ave., Box 927, Flushing 11354 Philip S. Schwarzman (GM) Robert Mailard (SM) Thomas Erde (B) Number of Salesmen Traveled 2	ASIA (1 MS)	A-G AUTOMOTIVE MACHINISTS, INC. 1300 King St., Lebanon 17042	ASIA AERA
ROYAL AUTO PARTS, INC. RD-8, Rt. 82, Box 308, Hopewell Junction 12533 Mary D'Angelico (GM) Rosemary Sauter (SM) Lyda Chenese (B)	ASB	TERRIDON ENTERPRISES dba STOP-N-GO AUTO PARTS 236 N. Main St., Sayville 11782 Peter Semanoff (GM) Jack Atkinson (SM) Donna Semanoff (B)	AEA	A-I-D PARTS CO. 1760 Rt. 8, Gleneshaw 15116 John R. Provost (GM) Number of Salesmen Traveled 1	AERA (1 MS)
ROYCO AUTO PARTS, INC. 49 Elm St., Fishkill 12524 John N. Licari (GM) Daniel J. Licari (SM) Roy F. Licari (B) Number of Salesmen Traveled 1	ASB (1 BR.) (2 MS)	TETZ ENG. REB., JOE RD #1, Box 365, Bloomingburg 12721	AERA	APS, INC. 522-32 Chestnut St., Reading 19602	ASIA
RUSSELL'S SALES & SERVICE, INC. Box 135, Williamson 14589 Jack Russell (GM)	ASB	THREE 'B' ENGINE MACHINING SERVICE Kent St., Palmyra 14522	AERA (1 MS)	ACTION AUTO PARTS 3938 Ridge Pike, Collegeville 19426	ASIA
S & A MACHINE SHOP SERVICE, INC. 33-16 38th Ave., Long Island City 11101 N. Calandro (B)	ASB (1 MS)	TINKER & SONS, INC., FRED M. 541 W. Whynny Rd., Fairport 14450 Don Derby (GM) (B) Timothy Tinker (SM) Number of Salesmen Traveled 1	AERA (1 MS)	ADVANCED DIESEL SPECIALISTS, INC. Rt. 93, RD #1, Box 312, Hazleton 18201 Rex D. Fornataro (GM) Robert Fornataro (SM) Number of Salesmen Traveled 2	ASIA AEA
S & H AUTOMOTIVE 242 Gray Ln., Painted Post 14870 Carl A. Hilde (SM)	ASB (1 MS)	TONSA AUTOMOTIVE 118 Cherry Ln., Floral Pl. 11001	ASIA	AL'S AUTO PARTS 1301 N. Sherman, York 17402 Matthew A. Resh (GM) Craig A. Resh (SM) (B) Number of Salesmen Traveled 1	ASIA
S & S MACHINE 11 N. Main St., Brockport 14420 Eun Brack (GM)	AERA (1 MS)	TRI CITY AUTO PARTS 85C Mamaroneck Ave., Mamaroneck 10643 Vincent J. Marconi (GM) Dennis Soleszo (SM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	ALEXANDER MOTOR PARTS CO. Hwy. 219, N., Box 405, DuBois 15801	ASIA
SALON AUTO ELECTRIC, INC. 81 Richmond St., Syosset 11791 Joe Carrolo (GM) Sam Salton (SM) Paul Salton (B)	AEA	TRI-COUNTY MOTOR PARTS GLENS FALLS CORP. 119 Warren St., Glens Falls 12801 I. Charles Labowitz (GM) Steve Winchell (SM) Susan McCortor (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	ALIED AUTOMOTIVE SUPPLY CO. Rt. 940, Box 70, Blakely 18610 James L. Harvey (GM) (B) James R. Harvey (SM) Number of Salesmen Traveled 1	ASIA
SEER AUTO PARTS, INC., MATTY 325 Columbia Trpk., Rensselaer 12144 Paul Scher (GM)	ASIA			ANDORRA AUTOM. 7703 Ridge Ave., Philadelphia 19128 Anthony Nardone III (GM) Joseph Nardone (SM) Ralph Swartz (B)	ASIA (1 MS)
SEIMERSAHL, INC., WILLIAM 4005 Rt. 9W, Saugerties 12477 Otto Numstien (GM) Roger Henninger (SM) Fred Schmersahl (B) Number of Salesmen Traveled 1	AEA (1 MS)			ANRIEN AUTO PARTS, INC. 4413 Main St., Philadelphia 19127 J. L. Anchen (GM) (B) R. Simpson (SM) Number of Salesmen Traveled 1	AERA (1 BR.) (1 MS)

BECKWITH MACHINERY CO. Box 277, Wya Switches, Duncansville 16635	AERA	CREST AUTO STORES, INC. 6124 Lansdowne Ave., Philadelphia 19151 Bery Yelowitz (GM) Ben Yelowitz (SM) Lee Weinstein (B) Number of Salesmen Traveled 2	ASIA (1 BR.) (1 MS)	GENE'S AUTOMOTIVE MACHINE SHOP 4428 Ohio River Blvd., Pittsburgh 15202	AERA (1 MS)
BEERMAN AUTO BODY SUPPLY 86-90 Bridge St., Johnstown 15902 Abe Beerman (GM) Frank Berkable, Dotty Shumaker (SM) Eleanor Herskowitz (B) Number of Salesmen Traveled 4	ASIA	CREST AUTO SUPPLY, INC. 5815 Torresdale Ave., Philadelphia 19135 Joe DePrato (GM) David Abramowitz (SM)	ASIA	GENUINE MOTOR PARTS OF PA., INC. 4925 Baum Blvd., Pittsburgh 15213 P. A. Lavinson (GM) W. C. Benson III (SM) R. Foltyn (B) Number of Salesmen Traveled 4	ASIA AERA (1 MS)
BENNETT AUTO SUPPLY, INC., C. W Railroad St., Box 262, Washington 15301	ASIA	D & D REBUILDING SERVICE 618 18th Ave., Box 474, New Brighton 15068 Donald C. Bolland (GM) Stanley E. Reeb (SM) John Hemphill (B)	AERA	GILES & RANSOME 777 American Dr., West-Port Ind. Pl., Bensalem 19020	AERA
BEREL'S AUTO PARTS & SUPPLIES 4061-67 Penn Ave., Pittsburgh 15224 Burt Unger (GM) Barel Broffman (B)	ASIA	DL-AUTOMOTIVE 2440 Commercial Blvd., State College 16801 Richard Lassman (GM) (SM) (B)	AERA (1 MS)	GRAY BATTERY & AUTO SUPPLY, INC. Box 169, Clearfield 16830 Robert K. Gray (GM) (SM) (B) Number of Salesmen Traveled 1	AERA (1 MS)
BERGEY'S AUTO & TRUCK PARTS 462 Harleysville Pl., Franconia 18924 Wayne Derstine (SM) Number of Salesmen Traveled 1	ASIA	DELL AUTO PARTS 810 Monroe St., Newark 18603 Lewis Dellagrotti (GM) (B) Phil Dellagrotti (SM) Number of Salesmen Traveled 1	ASIA (1 MS)	H & H MACHINE 101-1/2 Pleasant View Dr., Johnstown 15905 Ludwig R. Hruska (GM) (B)	AERA (1 MS)
BERKS AUTO IGNITION CO. 315 N. 4th St., Box 231, Reading 19603 Elmer N. Kline, Jr. (GM) (B) Robert Krebs (SM) Number of Salesmen Traveled 3	AEA (1 MS)	DIAMOND AUTO PARTS 2 E. Main St., Mt. Pleasant 15668 Stanley W. Yanuck (GM) (SM) (B) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)	HAMM'S OREFIELD AUTO PARTS & SERVICE, INC. 1292 Main St., Box 39, Orefield 18069	AERA
BERLIN AUTO SUPPLY 128 E. Glenside Ave., Box 209, Glenside 19038 Max Berlin (GM) Leo Posatko (SM) Clyde Glen (B) Number of Salesmen Traveled 6	AERA (1 BR.) (1 MS)	DIAS SPRING SERVICE, INC. 364 W. 12th St., Erie 16501	ASIA	HANNUM'S, INC. 340 State St., Curwensville 16833	ASIA
BETHLEHEM AUTO PARTS, INC. 403 W. Union Blvd., Bethlehem 18018	AERA	DIELON AUTO PARTS 622 South Ave., Pittsburgh 15221 Mark Lowery (GM) Number of Salesmen Traveled 1	ASIA (1 MS)	HARVEY'S AUTO SUPPLY 225 Washington St., Box 488, Johnstown 15901 Ron Partsch (GM) Ed Goldenberg (SM) Glenn Varner (B) Number of Salesmen Traveled 6	ASIA (1 MS)
BIG A AUTO PARTS, INC. 522 Chestnut St., Reading 19602 John R. Kurtz (GM) Dennis Mogel (SM) Number of Salesmen Traveled 16	AERA (1 BR.) (3 MS)	DISCOUNT AUTO PARTS 3254 Barth Rd., Bristol 19007	AEA	HAVEN AUTO SUPPLY 230 W. Main St., Schuylkill Haven 17978 James R. Haffron (GM)	ASIA
BIG BOYS AUTO PARTS CO. 123-29 S. 2nd St., Box 606, Sunbury 17801 Kathryn Friedman (GM) (SM) (B) Number of Salesmen Traveled 2	ASIA AERA (1 MS)	DOYLESTOWN AUTO PARTS 671 N. Main St., Doylestown 18901 A. Daniel Wendig (GM) Number of Salesmen Traveled 1	ASIA AERA (1 BR.)	HEAGY, WM. M. 33 S. Seward St., York 17404 Wm. M. Heagy (GM) (B)	AERA (1 MS)
BLAIR'S AUTOMOTIVE EQUIPMENT CO. 1301 W. State St., New Castle 16101 Warren E. Blair (GM) Stella Blair (B)	AERA (1 MS)	EDWARDS AUTOMOTIVE, JACK 101 S. Main St., Box 147, Harrisville 16038 Jack D. Edwards (GM) (SM) (B)	ASIA	HEAVY DUTY PARTS, INC. 50-92 S. Cameron St., Box 1439, Harrisburg 17105 Dennis K. Bittner (GM) Richard A. Miller (SM) Jon Shanberger (B) Number of Salesmen Traveled 55	ASIA (23 BR.) (3 MS)
BOB'S AUTOMOTIVE RD #1, Eldred 16731	AERA	EATON & SON, INC., ED. 4605 Edgmont Ave., Brookhaven 19015	ASIA	HILL AUTO PARTS, INC., DICK 1997 Carlisle Rd., York 17404 Richard L. Hill (GM) Patrick L. Karcher (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)
BOTTS AUTO PARTS CO., INC. 29 Sunbury St., Minersville 17954 Ronald H. Scharer (GM) (SM) (B) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)	EARL'S BATTERY & IGNITION SERVICE CO. 9001 W. Chester Pike, Upper Darby 19082	ASIA AERA	HILLER TRADING CORP. 211 Washington Ave., Dravosburg 15034 F. W. Shendan (GM) R. G. Petty (SM) P. London (B) Number of Salesmen Traveled 3	AEA (2 BR.) (1 MS)
BRAKE & CLUTCH CO. OF PHILA., THE 1610-14 Fairmount Ave., Philadelphia 19130 E. L. Smith, Jr. (GM)	ASIA (1 BR.) (1 MS)	EHLERS AUTO PARTS 923 Broad Ave., Belle Vernon 15012 Joe Cline (GM) Ernie Ehlers (B) Number of Salesmen Traveled 3	ASIA (2 BR.) (1 MS)	HINERMAN AUTOMOTIVE, INC. 1005-07 E. Greene St., Waynesburg 15370 William K. Hinerman (GM) Ed L. Hinerman (SM) W. Doug Hinerman (B) Number of Salesmen Traveled 1	ASIA (1 BR.) (1 MS)
BROWN MOTOR SUPPLY CO., INC. N. Railroad & Richard Sts., Box 162, Bedford 15522 Ned Brown (GM) Don Brown (SM) Alfred Clark (B) Number of Salesmen Traveled 2	ASIA AERA (8 BR.) (1 MS)	FAST EDDIE'S AUTO PARTS 812 Island Ave., McKees Rocks 15138 Thomas Fedorko (GM) (B)	AERA (1 MS)	HOFFMAN AUTO PARTS, INC. 237 W. Jefferson St., Butler 16001 Paul B. Hoffman (GM) Carl F. Hoffman, Jr. (SM) Richard G. Adams (B) Number of Salesmen Traveled 3	AERA (1 MS)
BROWN'S PARTS & MACHINE SHOP, INC. 311 High St., Bradford 16701 Robert Witchen, Dave Brown (GM) Robert Witchen (SM) (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	FEASER CO., ROBERT H. 1025 Mueach St., Harrisburg 17103 Robert H. Feaser (GM) Nelson G. Feaser (SM) (B)	ASIA (1 MS)	HONSDALE AUTO SUPPLY 314 Grandview Ave., Honesdale 18431	AERA
C & P AUTO PARTS 220 Larch St., Scranton 18509	AERA	FINLEYVILLE AUTO PARTS, INC. RD #5, Box 114A, Finleyville 15332 Angelo Vettori (GM)	ASIA (1 MS)	INDIANA AUTO SUPPLY 1270 Wayne Ave., Indiana 15701 Dan Payson (GM) Dale Learn, Greg Payson (SM)	ASIA (4 BR.)
CALBRO EQUIPMENT CO. 504 Evergreen Ave., Norristown 19401	AEA	FRIEND AUTO PARTS, BUD 7th & Chestnut Sts., Emmaus 18049 Michael Matlock (SM) Number of Salesmen Traveled 1	ASIA (1 MS)	INDUSTRIAL MOTOR SUPPLY, INC. Box 4128, Harrisburg 17111 C. E. Hembrough (GM) Number of Salesmen Traveled 2	AERA (1 MS)
CAMAC AUTO SUPPLIES 52 Concord Rd., Aston 19014 Charles McCartney (GM) (SM) (B) Number of Salesmen Traveled 1	ASIA	G. J. AUTO SUPPLY 216-20 Burtonwood St., Reading 19601 Douglas L. Becker (GM) (B) Terry L. Weidner (SM) Number of Salesmen Traveled 2	ASIA	INTERSTATE DIESEL & MACHINE SHOP SERVICE RD 3, King Rd., Conowingo 16406 Ernest F. Achterman (GM) Scott Walker (SM) Dave Wimer (B) Number of Salesmen Traveled 1	AERA (1 MS)
CAM'D MACHINING CO., INC. Rear 176 Main St., Box 176, Landisville 17538	AERA	GALLATIN MOTOR PARTS, INC. 286 E. Fayette St., Box 932, Uniontown 15401 Charles Moore (GM) Charles Moore, Jr. (B) Number of Salesmen Traveled 1	ASIA AERA (1 MS)	J & N AUTO PARTS 531 Washington Blvd., Williamsport 17701	AERA
CARLISLE AUTO PARTS, INC. 161 S. East St., Carlisle 17013 Jay A. Chestnut (GM)	ASIA (1 MS)			JACK'S AUTO PARTS 712 Eastown Rd., Box 153, Sarver 16055 Rick J. Zandron (GM) Jeff Stauffer (SM) Roger Spencer (B)	ASIA (1 MS)
CARVER ENGINE MACHINE CO. 165 Stewart Ave., East Rochester 15074 John M. Carver (GM) Number of Salesmen Traveled 1	AERA (1 MS)			JEANNETTE AUTO PARTS CO., INC. 907 Lowry Ave., Jeannette 15644 I. Friedman (GM) Number of Salesmen Traveled 1	ASIA AERA (1 MS)

KLEIN AUTO PARTS 354-66 N. River St., Wilkes-Barre 18702 Howard Klein (GM) Lan Kovacevski (SM) Don Brandreth (B) Number of Salesmen Traveled 8	AERA (3 BR.) (3 MS)	PAUL'S AUTO PARTS, INC. 215 Jacob St., Box 619, Kittanning 18201 Paul L. Boarts (GM) Paul W. Boarts (SM) Number of Salesmen Traveled 2	ASIA AERA (1 BR.) (1 MS)	BOMERSET ENGINE MACHINING CO. (SEMCO), INC. RD #6, Somerset 15501	AERA (1 MS)
KLINE & CO. 315 Hepburn St., Box 1385, Williamsport 17701 John R. Zurnasty (GM) Robert F. O'Conner (SM) Delbert Helkes (B) Number of Salesmen Traveled 3	ASIA (1 BR.) (1 MS)	PEPPER AUTO PARTS, INC., RALPH 8 S. Spring Garden St., Box 605, Carlisle 17013 Ralph Pepper (GM) (B) Clarence Pepper (SM) (B)	ASIA AERA (1 BR.) (1 MS)	SOUTHAMPTON AUTO PARTS, INC. 955 Industrial Hwy., Southampton 18968 Jerry Gerth (GM) Glenn Mumbover (B)	ASIA
KLINE'S AUTO & INDUSTRIAL SUPPLIES, INC. 630 N. 13th St., Allentown 18102 Allen Gribben (GM) Harry Hoffert (SM) Steve Owens (B) Number of Salesmen Traveled 5	ASIA (2 BR.)	PENNA AUTO BODY & SUPPLY, INC. 340 Main St., Box 68 Par Station, New Kensington 15068 John B. Martino (GM) Ray A. Burnis (SM) Dan Martino (B) Number of Salesmen Traveled 3	ASIA (1 BR.)	SPEED BOY'S AUTO PARTS 114 Washington St., East Stroudsburg 18301	ASIA (1 MS)
KNOX AUTO SUPPLY Miller St., Box "W", Knox 18232 Fred Mays (GM) Number of Salesmen Traveled 2	ASIA (1 BR.) (1 MS)	PENNA AUTO SERVICE & SUPPLY CO. 711 Mineral Ave., Scranton 18503 Sam Goosay (GM) Tom Henry (SM) (B)	ASIA	SPEED EQUIPMENT CORP. 777-79 Bristol Pk., Andalusia 19020 Raymond Duncley (GM) William L. Johnston (SM) Number of Salesmen Traveled 2	ASIA AERA (1 MS)
KOHLER AUTO PARTS Midtown Shopping Ctr., Box 388, Stewartstown 17363	ASIA	PENNA MOTOR PARTS 145 Lincoln Ave., Pottsville 19047 Donald H. Orr (GM) Nathan J. Thomeon (SM) Number of Salesmen Traveled 1	AERA (1 MS)	SPEEDOMETER SERVICE CO. 4740 Baum Blvd., Pittsburgh 15213 Richard P. Mowery (GM) Number of Salesmen Traveled 2	AEA
KRALL BATTERY & IGNITION CO., INC. 5th & Cumberland Sts., Lebanon 17042 Roger J. Krall (GM) (B) Arthur R. Krall (SM) Number of Salesmen Traveled 1	ASIA	PENNSSENGINES 98 E. End Dr., Box 524, Manheim 17645	AERA	STAMBAUGH AUTO PARTS, INC. Rr. 239 Ridge Ave., Box 68, Hanover 17331 Cletus L. Hull (GM) Dave Funk (SM) Number of Salesmen Traveled 1	ASIA (1 MS)
KRIEGER'S AUTOM. MACHINE SHOP RD #2 Link Hill Rd., Waterford 16441 Robert J. Krieger (GM) (SM) (B)	AERA (1 MS)	PIONEER ENGINE CO., INC. 414 Easton Rd., Warrington 18376 Richard Ervin (GM)	AERA (1 MS)	STANDARD AUTO PARTS CO. 27 S. Central Ave., Canonsburg 15317	AERA
KRIMES MACH. SHOP 701 E. Main St., Box 417, Ephrata 17522 Larry Krimes (GM)	AERA	PITTSBURGH CRANKSHAFT SERVICE, INC. 6515 Hamont Ave., Box 5256, Pittsburgh 15208 Justin Prizzo (GM) Brian Gordon (SM) Robert Straw (B) Number of Salesmen Traveled 1	AERA (1 MS)	STANDARD WHEEL & RIM CO. 200 S. Cameron St., Box 1715, Harrisburg 17105 D. R. Ludwig (GM) R. B. Morrow, II (SM) Number of Salesmen Traveled 12	ASIA (2 BR.)
KUNKEL AUTO PARTS, INC., BUD 4613 Rt. 8, Allison Pk., 15101 H. Bud Kunkel (GM) Michael P. Kunkel (SM) C. R. Walsh (B) Number of Salesmen Traveled 1	AERA (1 BR.) (1 MS)	PLAZA AUTO PARTS, INC. 2143 MacDade Blvd., Holmes 19043 Gerald K. Hoese (GM) Gerald S. Butcher (SM) Number of Salesmen Traveled 2	ASIA (1 BR.)	STAUFFER AUTO PARTS, INC., C. L. 350 Bridge St., Phoenixville 19460 Patrick Donohue (GM) Jack Proud (B) Number of Salesmen Traveled 2	ASIA AERA (2 BR.) (1 MS)
LANCASTER COUNTY AUTO PARTS, INC. 1675 Columbia Ave., Lancaster 17603 Horace W. Kruger (GM) Stephen B. Kruger (SM) Number of Salesmen Traveled 2	ASIA (1 MS)	POWELL AUTO SUPPLY Main St., Box 279, McKeen 16426	ASIA	SULLIVAN BROS., INC. Creek Rd. & Langone Ave., Box 140, Emerson 19520 Joe Sullivan (GM) Kevin Sullivan (SM) Number of Salesmen Traveled 5	AEA (1 BR.)
LAUBACH AUTO PARTS, INC. 357 Scott Ave., Bloomsburg 17815 Thomas Laubach (GM) George Fedler (B)	ASIA AERA (1 MS)	PRECISION PERFORMANCE CENTER 214-F, Rt. 13, Bristol 19007 Jeffrey P. Keown (GM)	AERA (1 MS)	SWOGGER AUTO PARTS 1552 E. State St., Sharon 18146 George Swogger (B) Number of Salesmen Traveled 2	AERA
LEIGHTON AUTOM. SUPPLY, INC. 442 N. 1st St., Leighton 18235 Harold Hoffman (GM) (B) Earl Trus (SM) Number of Salesmen Traveled 1	ASIA AERA (1 BR.) (2 MS)	R & J AUTOMOTIVE 30 W. Hancock St., Lanedale 18446 John L. Green (GM) Brad Green (SM) William Huff (B) Number of Salesmen Traveled 1	ASIA	TESTERMAN'S AUTOMOTIVE MACHINE SHOP, DON Rt. 103926, Cochranville 19330	AERA
LOWER BURRELL AUTO PARTS 3054 Leeburg Rd., Lower Burrell 15068	ASIA	R & R REBUILDING RD #4, Box 29, Brookville 15825	AERA	TRIANGLE AUTO PARTS 6407 Brownsville Rd., Pittsburgh 15236	ASIA
LUSCH MOTOR PARTS, INC. 131-39 N. 2nd St., Box 269, Leighton 18235 Charles N. Lusch (GM) Wilard E. Rimbey (SM)	ASIA AERA (1 MS)	RANSOME LIFT EQUIP. CO. 1045 Columbia St., Larnoyne 17043	AERA	TRUCKMOTIVE AUTO SUPPLY, INC. 2248 Bristol Pk., Bensalem 19020 Water A. Marante (GM)	AERA (1 MS)
MAC TRUCKS, INC. Commerce Dr., Middletown 17057	AERA	REARDON MACHINE SHOP & AUTO PARTS 318 N. Concord St., Lancaster 17603 James B. Reardon, II (GM) (B) Albert H. Arnold, Jr. (SM) Number of Salesmen Traveled 2	ASIA (1 MS)	TUNNESSEN'S, INC. 629 W. Green St., Hazleton 18201 Bob Tunnesen (GM) Nick Swankowski (SM) John Balder (B) Number of Salesmen Traveled 4	ASIA (1 BR.) (1 MS)
MAR AUTOMOTIVE 4651 Paul St., Philadelphia 19124 Anthony J. Cappuccio, Jr. (GM) Number of Salesmen Traveled 1	AERA (1 MS)	SIGAFOOS' MACHINE SHOP, INC. 1036 Spruce St., Easton 18042 Kenneth B. Sigafos, Sr. (GM) Rodney D. Noll, Jr. (SM) David B. Sigafos (B) Number of Salesmen Traveled 1	AERA (1 MS)	V-J AUTO PARTS CO., INC. 1516 Chester Pk., Foloroft 19032 Vincent M. Maraballa (GM) (B) Joseph F. Maraballa (SM) (B) Number of Salesmen Traveled 1	ASIA
MARKLE'S AUTOMOTIVE SUPPLIES 351 E. Princess St., York 17403	ASIA	SILL & SWAN CO., INC. 1738 9th Ave., Altoona 16602 Paul Blender (GM) Jeffrey H. Blender (SM) (B)	ASIA	VALLEY AUTO PARTS CO., INC. 329 Airbrake Ave., Wimerding 15148 Louis Cesty (GM) John Cesty (SM) Don Cesty (B)	AERA (1 MS)
MCCABE AUTO SUPPLY, INC. 515 Farmington Ave., Pottstown 19464 Don Decker (GM) (B) Number of Salesmen Traveled 4	ASIA (3 BR.)	SMALL'S AUTO PARTS, INC. 25 Maple Ave., Hanover 17331 George Post (GM) Karen Post (B) Number of Salesmen Traveled 2	ASIA (2 BR.) (1 MS)	WAGNER'S WHEEL ALIGNMENT, INC. 179 S. Mercer St., Greenville 16125 Larry A. Redfoot (GM)	AERA (1 BR.) (1 MS)
ORION MOTORS 218 S. Main St., Sellersville 18960 Jay Siff (GM) Rick Strauss (SM) Dan Vaughan (B) Number of Salesmen Traveled 3	AERA (3 BR.) (1 MS)	SMETHPORT AUTO PARTS 402 Main St., Smethport 16749 Bill Welts (GM) Carolyn Larson (SM) Virgil Schwab (B) Number of Salesmen Traveled 2	ASIA (1 MS)	WALNUTPORT AUTO PARTS, INC. 123 Main St., Walnutport 18088 James D. Pallock (GM) Number of Salesmen Traveled 1	AERA (1 BR.) (2 MS)
OST & OST, INC. 1265 W. Laurel Blvd., Box 390, Pottsville 17801 Daniel C. Ost (GM) Harry Dunheimer (SM) Charles Schaeffer, Richard W. Otto (B) Number of Salesmen Traveled 5	ASIA AERA (1 MS)	SMITH AUTO PARTS, INC., A. C. 112 Wilam St., Box 349, Towanda 16848 Lloyd Vaughn (GM) (SM) (B) Number of Salesmen Traveled 3	ASIA (3 BR.) (2 MS)	WAYNE AUTO ELECTRIC SERVICE 122 W. Lancaster Ave., Wayne 19067 Anthony J. Panaccio (GM) Robert Burns (SM) Number of Salesmen Traveled 1	AEA
P & R ENGINE REBUILDERS 952 W. Pittsburgh St., Greensburg 15601	AERA (1 MS)	SNAVELY & DOSCH, INC. 426 N. Prince St., Box 1538, Lancaster 17603 John Stensnyder (GM) Richard Seery (SM) Steven Stensnyder (B) Number of Salesmen Traveled 4	ASIA (2 BR.)	WEAVER AUTO PARTS Rt. 322 & Rt. 338, Box 31, Knoch 16331	AEA
PALMER ENGINES, INC. Rear 445 E. 3rd St., Williamsport 17701 David E. Palmer (GM)	AERA (1 MS)	SODANO'S AUTO PARTS 169 Lincoln Hwy., Pottsville 19047	ASIA		
		BOMERSET AUTO PARTS 214 Stoytown Rd., Box 510, Somerset 15501	ASIA		

APPENDIX I

MANUFACTURERS' REPRESENTATIVES GUIDELINES
AND LISTINGS

APPENDIX I

FROM MACRAE'S VERIFIED DIRECTORY OF MANUFACTURERS' REPRESENTATIVES

GUIDE TO MANUFACTURERS' REPRESENTATIVES' SERVICES

As the increasing number of independent sales representatives indicates, more and more manufacturers are discovering that reps can, indeed, provide the sales volume and intensive coverage they require in their sales effort. Rather than investing the time required to train and supervise their own sales force, manufacturers are taking advantage of the independent reps' experience and following.

When asked to list the major advantages of using outside reps, sales executives responded with:

1. Comprehensive and intensive sales coverage in all areas.
2. Speed in obtaining regional or national distribution of new and present product lines.
3. Ready accessibility to new and favored accounts through reps with established followings.
4. Predetermined and often lower sales expenses to allow for more realistic pricing and expense budgeting.
5. Economy of sales expenditure.
6. Effective sales administration with a minimum of management problems.
7. Lower sales personnel turnover.
8. Competent and aggressive sales representation.

Among the qualifications considered in choosing reps, sales executives listed:

1. Thorough knowledge of the trading area and its marketing potential.
2. Established following.
3. Related, but not competitive, lines presently handled.
4. Technical knowledge of products handled.
5. Adequate experience and sales training.
6. Pleasant appearance and personality.

Many marketing experts still feel that the full potential of manufacturers' representatives has yet to be realized by many manufacturers. To help you maximize those benefits, MacRAE'S Verified Directory of Manufacturers' Representatives offers the following suggestions:

A—SELECTING THE REPRESENTATIVE

The selection of competent representatives is of vital importance. Therefore, each applicant and prospect should be interviewed personally and screened carefully. Verify their references and experience statements by inquiring among manufacturers they now represent and customers to whom they are now selling or should be selling. Review the previously mentioned "major characteristics determining the selection of representatives" and apply these factors to each of your applicants. Your efforts now will be rewarded by greater sales volume and stability later.

In your interviews look first for in-depth understanding on the part of the representative of how your prospects can use and benefit from your product. You'll also want to ask many questions that will help you learn in detail how the rep operates, the lines he now represents, the amount of travel he does, who in his organization will handle your line, what their background and training is, what companies and what types of people they call on. You'll want to know what share of the agent's time your product will get.

You should also be interested in the questions that the agent asks you. Good reps are usually busy and often very discriminating in the products they choose to represent. Their selling time is valuable and they want good lines—products that will enable them to provide valuable service to their customers and that will build their business. Good reps should ask many questions about a product's features, benefits, competition, delivery, pricing, etc. If you don't get such questions, you haven't found the right agent for your company.

B—TRAINING

The representative is generally selected on the basis of an intimate knowledge of the general classification of products involved. Many new representatives require little more than a briefing before undertaking their sales responsibilities. However, when special skills or training are required, arrangements should be made for the newly appointed rep to spend ample time at your home office or factory to obtain the necessary training. This training period must be brief and well planned as the rep cannot spare too much time away from his own business.

C—PROMOTION, ADVERTISING & SALES AIDS

The manufacturer generally assumes the major expense and responsibility of advertising and promoting the products involved on both a national and regional level. However, the representative is obligated to assist in administering a cooperative advertising program by use of national advertising tie-ins at local levels. Dealer promotion programs are normally an integral part of a representative's activities.

The manufacturer should keep the rep supplied with adequate sales tools, promotional literature, samples and market data, and provide engineering assistance when and where needed.

D—COOPERATIVE SERVICES

Sales of the manufacturer's products require a great deal of planning and cooperation by both manufacturer and representative. It is often necessary to offer pre-sale as well as post-sale services, and the skill and cooperation of the manufacturer and representative are essential in concluding the initial sale and obtaining re-orders.

Pre-sale services may include cost analysis, plant layout design and installation, counselling, recommendations as to products application and determination of the class of merchandise best suited to the buyer's needs.

Post-sale services may include installation, maintenance, repairs, training of operators and repair service men.

E—COMMISSIONS—COMPENSATION

Manufacturers' reps are compensated exclusively on a commission basis. The commission varies considerably with the nature of the products, services to be performed, the type of market and

prevailing commissions in the particular industry. The greater the service performed by the rep, the higher the rate of compensation. Commission rates may vary with the size of the order and the volume of business a product can command.

Items that normally enjoy a rapid turnover carry a smaller commission rate and inversely slow moving products call for a higher rate. Commissions on unadvertised products should be higher, as a greater promotional effort is expected from the rep. New products generally carry higher commissions during their introductory phase, especially in highly competitive markets.

Manufacturers generally set a quota based on the rep's previous record and the market potential. In such cases, compensation may be based on the rep's ability to meet the quota; a lower rate below the quota and a graduated rising rate above the quota.

It is generally understood that a rep will pay all business expenses out of commissions earned, unless he is asked to perform a service above and beyond the normal routine.

F—SALES CONTRACT (also see suggested contract forms in the back of this directory).

When the manufacturer and the representative have reached a general agreement, it is customary to formulate a contract, which should be reviewed by competent counsel before signing.

The publisher realizes that it is almost impossible to prepare one contract that can be made all inclusive and applicable. However, our attorneys have formulated both a long form and short form contract as a guide which may be adapted to your circumstances and needs.

Essentially a manufacturer/manufacturers' representative contract should incorporate certain basic agreements and responsibilities. For the purpose of brevity and simplicity, we are outlining those provisions that should be reviewed and considered in the preparation of the contract.

They are:

1. **Products**—The line of products to be carried should be specified with a proviso that the rep will not represent a competing manufacturer.
2. **Contract Duration**—The length and term of the contract and provisions for its cancellation renewal or extension should be clearly defined.
3. **Quotas**—If the manufacturer insists on a minimum quota, the circumstances, amount and quota period should be defined.
4. **Territory**—The territory to be covered should be clearly defined. Also, whether exclusive territory representation is included.

The extent of territory to be covered will probably be based on the manufacturer's other commitments, his sales policy, capability of the representative, type of product, classification of customers, degree of competition, size of trading area, transportation facilities and the amount of service to be rendered.

5. **Compensation**—The rate of commission and procedure and timing for payments should be defined. In this regard it is important to define what constitutes a sale.
6. **Prices, Sales Terms and Warranties**—The manufacturer will set the selling price for his products and will state

the limitations and conditions, if any, in deviating from the fixed prices or in offering special discounts or allowances. Also, the manufacturer accepts responsibility for the sale of sub-standard or defective merchandise.

7. **Collections**—Procedures and the extent of the representative's cooperation on collections should be detailed.
8. **Advertising and Sales Promotion**—The burden of expense should be shouldered by the manufacturer. However, the representative will cooperate whenever possible, particularly in those programs involving regional promotions.
9. **Customer's Inquiries and Correspondence**—The manufacturer should refer all customers' inquiries which originate within the representative's territory directly to the rep for his "follow-up." The representative, in turn, should immediately refer all customer inquiries which originate outside his territory directly to the manufacturer.
10. **Policy on Orders**—Generally, all orders taken by the representative are conditional upon the manufacturer's approval. This minimizes the possibility of error or other unacceptable features.
11. **Expenses**—The manufacturer's responsibility, if any, for sales expenses should be defined as to circumstances, liability and form of reimbursement.
12. **Arbitration**—Provisions should be included for amicable arbitration of all controversies that may develop.
13. **Assignment of Contract**—Under certain conditions, it is advisable to provide that the contract may be assigned.
14. **Termination of Contract**—Methods of terminating the contract, extent of notice and form in which the notice is to be submitted must be stipulated.

In conclusion, we should like to repeat and stress a few points that merit consideration:

1. Check carefully through the entire directory for reps whose lines and territory are compatible with your needs.
2. Select a rep who is informed on business developments and industrial trends in his trading area.
3. Verify references and credit information submitted by the rep under consideration.
4. The representative should be provided with promotional aids and engineering and sales assistance when necessary.
5. The representative should be willing to spend ample time at your factory to gain an intimate knowledge of your products, processes, marketing programs and policies.
6. Prompt shipment and effective handling of customers' inquiries are conducive to favorable manufacturer/manufacturers' representative relations.
7. Representatives are not on any expense account nor are they generally reimbursed for their sales expenses. They, therefore, need and should receive their earned commissions as promptly as possible.
8. The representative/manufacturers' relationship should be based on mutual confidence, cooperation and integrity. A definite commitment should be made towards a permanent arrangement with a mutually satisfactory binding contract.

PRODUCT CLASSIFICATIONS

This section lists manufacturers' representatives according to the product lines handled. Below is a list of the product classifications used, along with a description of specific products included in the classifications which are not self-explanatory. These classifications are necessarily broad in scope to allow for allied product lines. While every effort has been made to include reps under all appropriate products, errors and/or omissions may occur, and we suggest you contact the reps directly concerning exact products handled.

ABRASIVES

ADVERTISING PRODUCTS & SERVICES

(includes labels, decals, premiums and incentives)

AEROSPACE & AVIATION

AGRICULTURAL EQUIPMENT & SUPPLIES

(includes lawn and garden equipment, pest control, fertilizers and feeds, nursery supplies)

AUDIO VISUAL EQUIPMENT & SUPPLIES

(includes stereo systems and components, video equipment, records and tapes)

AUTOMOTIVE EQUIPMENT & SUPPLIES

(includes recreational and special purpose vehicles, automotive paints and vinyls, service station equipment)

CASTINGS & FORGINGS

(includes ceramics, extrusions, foundry and refractory equipment, dies)

CHEMICALS & CHEMICAL PRODUCTS

(includes janitorial supplies, insecticides, pesticides, resins, solvents, clean room supplies)

COATINGS, SEALANTS & ADHESIVES

(includes caulks, laminates, weatherstripping, rust preventives, epoxies, waxes, glazes)

COMMUNICATIONS EQUIPMENT

(includes telephone and telegraph equipment, two-way radios, intercoms, broadcast equipment, answering machines, beepers, pagers, antennas, receivers, transmitters)

COMPUTER EQUIPMENT & SUPPLIES

(includes hardware, software, peripherals)

CONSTRUCTION EQUIPMENT & SUPPLIES

(includes skylights, partitions, roofing, insulation, flag poles, mail boxes, siding, doors, windows, shutters, gratings, nosings, treads, concrete, cement, tile)

CONTROLS & INSTRUMENTATION

(includes meters, scales, timers, monitors, oscilloscopes, detectors, counting and weighing systems, thermostats, shock and vibration control, analyzers, gauges)

EDUCATIONAL AIDS & SUPPLIES

ELECTRICAL/ELECTRONIC EQUIPMENT & SUPPLIES

(includes capacitors, resistors, relays, switches, semiconductors, printed circuit boards, solenoids, fuses, batteries, microwave components, transformers, transducers, consumer electronics and appliances)

ENERGY

(includes energy systems, solar energy systems, nuclear energy components, environmental equipment, energy conservation, energy recovery)

FASTENERS

(includes nuts, screws, bolts, rivets, grommets, connectors, couplings)

FOOD & FOOD PRODUCTS

(includes tobacco, beverages)

FOOD SERVICE EQUIPMENT

(includes coffee makers, ice makers, dispensing equipment, restaurant equipment, barbecues, canning and packaging equipment)

FURNITURE & FURNISHINGS

(includes wicker products, shelving, patio furniture, draperies, upholstery, carpeting, linens, wall coverings)

GAS, OIL & PETROLEUM PRODUCTS & SERVICES
(includes oil field equipment, skimmers, separators, gas detection)

GLASS & GLASS PRODUCTS

GOVERNMENT & MILITARY
(includes law enforcement equipment, municipal services, PX supplies)

HARDWARE & HOUSEWARES
(includes cookware, cutlery, household appliances, fireplace equipment, sewing notions, gaskets, hinges, latches, bearings, locks, tools, ladders)

INDUSTRIAL MACHINERY & EQUIPMENT
(includes machine tools, compressors, pneumatics and hydraulics, power plant equipment, generators, hoists, winches, cranes, railroad equipment, welding equipment, robotics, dryers, incinerators, control rods, shielded rooms, mining equipment)

LEATHER GOODS

LIGHTS & LIGHTING EQUIPMENT

LUBRICANTS

MARINE EQUIPMENT & SUPPLIES

MATERIAL HANDLING & PACKAGING
(includes conveyors, parts feeders, fluid and solids handling)

MEDICAL EQUIPMENT & SUPPLIES
(includes lasers and laser optics, optics and optical instruments, laboratory and hospital supplies, clean rooms)

METALS & METAL PRODUCTS

OFFICE EQUIPMENT & SUPPLIES
(includes office machines, filing and storage systems, office furniture)

PAINTS & VARNISHES
(includes painting equipment, spray paint booths)

PAPER & PAPER PRODUCTS

PHARMACEUTICALS
(includes health and beauty aids, cosmetics, drugs, sundries)

PHOTOGRAPHIC EQUIPMENT & SUPPLIES

PLASTICS & PLASTIC PRODUCTS

PLUMBING, HEATING, VENTILATION, AIR CONDITIONING & REFRIGERATION

POLLUTION CONTROL
(includes noise control, dust collectors, purifiers, emission, sewage and contamination control)

PROCESS EQUIPMENT

PUMPS & FILTERS

RUBBER & RUBBER PRODUCTS
(includes hoses, belting, protective boots, shoes and clothing)

SAFETY, EMERGENCY & SECURITY PRODUCTS
(includes smoke detectors, first aid, burglar alarms, fireproofing, life jackets, sight and hearing protection, safety enclosures, traffic signals, flashers)

SCREW MACHINE PRODUCTS

SPORTING GOODS, TOYS & NOVELTIES
(includes sportswear, swimwear, sunglasses, giftware, jewelry, watches, awards, medals, pet supplies, heat transfer)

TEST EQUIPMENT

TEXTILES & TEXTILE PRODUCTS
(includes apparel, rope, cordage and twine)

TUBES & TUBING
(includes pipes, sleeving, hose and fittings)

VALVES

WATER TREATMENT EQUIPMENT & SUPPLIES
(includes reverse osmosis, desalination, deionization, filtration, conditioning)

WIRE & WIRE PRODUCTS
(includes wire cloth, screens, cable, wire rope, wire mesh)

WOOD & WOOD PRODUCTS
(includes woodworking and sawmill machinery)

DIRECTORY PRODUCT CLASSIFICATIONS

	Page		Page		Page
Abrasives	147	Food/Chemicals	252	Paper Industry	349
Advertising Products & Services Decals, pressure sensitive labels & tapes, signs, display equip., name plates, promotional aids, identification products, printing equipment & supplies, etc.	149	Food/Processing	253	Photographic Supplies	354
Aerospace & Aviation Aircraft, accessories, components, missiles, rockets, equipment, machinery, etc.	151	Food/Products & Services	256	Plastics Injection molding, rotational molding, plastic pipe fittings, fabrication, etc.	354
Agriculture/Chemicals	156	Food Service Equipment	257	Plumbing, Heating, Ventilation, Air Conditioning	363
Agriculture/Equipment & Machinery	157	Furniture & Furnishings Office & home	259	Pollution Products & Services Air, water, noise, sewage, industrial & consumer.	370
Architects & Interior Designers	161	Gas, Oil & Petroleum Products & Services	261	Power Transmission	378
Automotive/Aftermarket Parts, accessories, tools, equipment, chemicals & supplies used in repairing or improving passenger vehicles—generally sold to wholesalers.	164	Government City, state, federal, schools, military, parks, etc.	264	Process Equipment	383
Automotive/DEM Passenger, truck, farm equipment, earth moving equipment, etc.	168	Hardware/Houseware	267	Pumps	392
Beauty Salon & Barber Equipment & Supplies	174	Heavy Duty Truck-Trailer Equipment Components, OEM, aftermarket, etc.	274	Recreational Vehicle/Aftermarket & OEM	397
Building Materials & Supplies Lumber, millwork, roofing, builders' hardware, architectural specialties	174	Import-Export	277	Refractories	400
Castings & Forgings	181	Industrial Equipment & Machinery	281	Retail Consumer Products & Services Giftware, novelties, hardware, house- ware, garden, home improvement, etc.	400
Chemicals/Industrial	187	Industrial Supplies Machine tools, tool supplies, valves, mill supplies, etc.	295	Rubber Products	405
Chemicals/Maintenance	191	Lubricants	305	Safety, Emergency & Security Products	410
Coatings Adhesives, etc.	192	Lumber Industry	306	Scientific Research Equipment & Supplies	413
Computer/Hardware, Software & Peripheral Equipment & Supplies	195	Machining Services	308	Screw Machine Products	415
Construction Equipment & Machinery Concrete, etc.	200	Maintenance Supplies Floor care, chemical cleaners, janitorial, etc.	312	Sporting Goods Supplies & Accessories	420
Controls & Instrumentation	204	Marine Equipment, fittings, paints, coatings, etc.	313	Steel Mills & Foundries	421
Electrical/Consumer	214	Material Handling	316	Textile/Apparel Trade	426
Electrical/Technical & Industrial	216	Medical Supplies & Services	323	Textile/Carpet, Drapery & Related Materials	426
Electronic/Communications, Audio-Visual & Professional Products	224	Metals/Processing, Assemblies & Products	325	Textile/Industrial	427
Electronic/Components & Materials	226	Metals/Raw Materials	335	Toys, Gifts & Novelties	428
Electronic/Consumer Products	232	Mining	337	Transportation	430
Electronic/Technical Products	234	Mobile Homes, Accessories & Supplies	340	Tubing	431
Energy	240	Nursery/Florist	341	Utilities	433
Fasteners	246	Office Supplies & Equipment Filing & storage systems, etc.	342	Veterinary	438
		Optical Supplies	343	Water Treatment Equipment & Products	438
		Packaging & Plastics	344	Welding	444
		Paints & Varnishes	347		

POTENTIAL MANUFACTURERS' REPRESENTATIVES
FOR LOW PRESSURE WASHERS

MAINTENANCE SUPPLIES

COMPANY NAME, ADDRESS AND PHONE	WAREHOUSING		TERRITORY COVERED	PRODUCT EMPHASIS
	YES	NO		
Robert Quigley & Assoc., Inc. Hathaway Ct. Muskegon, MI 49441 (616) 780-3800		X	MI, OH, IN, KY, WV, Western PA	Mopping equipment, mops, floor/hand 2458 pads, chemicals, mats, sweepers
Porter & Associates P.O. Box 40425 Cincinnati, OH 45242 (513) 489-3631		X	OH, WV, KY, IN, MI, PA	Brooms, mops, bar soap, janitorial chemicals, air dryers, floor pads, doedorant blocks
John Hancock Sales Co. 202 E. Huron St., Ste. 204 P.O. Box M-1021 Ann Arbor, MI 48106 (313) 668-7916		X	MI, OH	Concrete specialties, fasteners, hand/power tools, industrial construction supplies
Mcilvane & Associates 16333 Trenton Rd. Security Bank and Trust Bldg. Suite 914 Southgate, MI 48195 (313) 281-7920		X	MI, OH, IN, IL	Adhesives, sealants, rust preventatives, coatings, paints, cleaners, cutting oils, coolants, friction products
Hogg, William T. M. Box 2134 Syracuse, NY (315) 472-5664		X	NY - Upstate Northern PA	Janitorial supplies

POTENTIAL MANUFACTURERS' REPRESENTATIVES
FOR LOW PRESSURE WASHERS

CHEMICALS AND CHEMICAL PRODUCTS/MAINTENANCE

COMPANY NAME, ADDRESS AND PHONE	WAREHOUSING		TERRITORY COVERED	PRODUCT EMPHASIS
	YES	NO		
Riching & Wood Associates, Inc. P.O. Box 272 Lake Orion, MI 48035 - No phone -		X	MI	Maintenance supplies
Horowitz Associates 24261 Kenosha St. Oak Park, MI 48237 (313) 569-7766		X	MI, OH, IN, KY, Western WV	Janitorial paper and products, restaurant supplies
Defriest Sales Co., R.E. 509 W. Fayette Syracuse, NY 13204 (315) 474-5900	X		NY: Excluding Manhattan, Westchester County	Food service, janitorial supplies
Romanis & Associates, 5181 W. 161st St. Cleveland, OH 44142 (216) 267-1730	X		No terri- tories listed	Steam cleansers, chemicals, welders, linements, buffers and cleaners, auto products
Lundardini Inc., Michael J. Industrial Park Canonsburg, PA 15317 - No phone -	X		Western PA, MD, WV	Blast cleaning equipment and supplies

POTENTIAL MANUFACTURERS' REPRESENTATIVES
FOR LOW PRESSURE WASHERS

AGRICULTURAL
EQUIPMENT AND SUPPLIES

COMPANY NAME, ADDRESS AND PHONE	WAREHOUSING		TERRITORY COVERED	PRODUCT EMPHASIS
	YES	NO		
Dougherty Sales Co. H.L. Box 306 Warren, IN 46792 (219) 375-2415	X		IN, KY	Industrial and agricultural equip- ment, hydraulic components, poly tanks, precision chains, pumps, gear boxes, contractors
Marketing Service, Inc. 720 Clearington Rd. Westerville, OH 43081 (614) 891-4140		X	OH	Agricultural lawn and garden
Macewan Associates 3907 Hillview Dr. Columbus, OH 43220 (614) 451-3507	X		OH	Industrial material handling, construc- tion and farm equip- ment
Young's Equipment Co. 15092 Airport Lansing, MI 48906 (517) 321-4167	X		MI, OH, IN	Farm equipment

POTENTIAL MANUFACTURERS' REPRESENTATIVES
FOR LOW PRESSURE WASHERS AND PARTS CLEANERS

AUTOMOTIVE
EQUIPMENT AND SUPPLIES

COMPANY NAME, ADDRESS AND PHONE	WAREHOUSING		TERRITORY COVERED	PRODUCT EMPHASIS
	YES	NO		
Ault Sales Co. 4210 Crystal West Bloomfield, MI 48033 (313) 363-3610		X	MI	Automotive supplies
Brookie & Ham, Inc. Box 41242 Westfield, IN 46241 (317) 248-0847		X	IN, KY, OH	Automotive parts and equipment
Greenleaf & Co. J.R. 21245 Loraine Rd. Cleveland, OH 44126 - no phone -	X		OH, Northern KY	Automotive and electrical equipment and supplies
Pasher Courtley Floor Sales Unlimited 3436 Babcock Blvd. Pittsburgh, PA 15237 (412) 366-7890		X	Western PA, Western VA	Automotive and industrial equipment
Oehmler & Assoc., Inc. 60 Wickham Dr. Buffalo, NY 14221 (716) 634-5208		X	NY - Upstate	Auto body repair products, accesso- ries, chemicals equipment
Ultra Sales Associates, Inc. 155 Thackery Rd. Rochester, NY 14610 (716) 473-0402		X	NY - Upstate	Automotive parts and accessories, chemicals

POTENTIAL MANUFACTURERS' REPRESENTATIVES
FOR PARTS CLEANERS

INDUSTRIAL SUPPLIES

COMPANY NAME, ADDRESS AND PHONE	WAREHOUSING		TERRITORY COVERED	PRODUCT EMPHASIS
	YES	NO		
Concord Sales Co., Inc. 2830 Concord Rd. Cleveland, OH 44124 (216) 831-1446		X	Northeast OH	Braze/solder alloys, wave solder machines, special machines, assembly machines
Indiana Machinery and Supply, Inc. P.O. Box 217 Fortville, IN 46040 (317) 485-5157	X		IN, KY, Central OH, Southwest MI	Abrasive blasting/ vibratory finishing equipment, supplies
Geni Industrial Sales Co. P.O. Box 218 Elk Rapids, MI 49629 (616) 264-5573		X	MI, FL	Carbide impregnating equipment, machine tools, carbide, steel pallets, portable 3-D drafting machines
Debco & Associates 437 Fenwick Drive Fairfield, OH 45014 (513) 863-0014	X		OH, IN, KY	Power transmission products, industrial supplies
Tricentury Corp. 24 Briarhurst Rd. Buffalo, NY 14221 (716) 634-1070		X	NY - Upstate Northwestern PA	Industrial supplies and equipment

POTENTIAL MANUFACTURERS' REPRESENTATIVES
FOR PARTS CLEANERS

CHEMICALS AND CHEMICAL
PRODUCTS/ INDUSTRIAL

COMPANY NAME, ADDRESS AND PHONE	WAREHOUSING		TERRITORY COVERED	PRODUCT EMPHASIS
	YES	NO		
Rudolph Brothers & Co. 354-A Lowery Ct. Box 205 Groveport, OH 43125 - No phone -	X		IL, IN, KY, MI, OH, TN, WV	Industrial chemicals
Wolfe Marketing Corp. 24630 Florence Ave. Box 279 North Olmstead, OH 44070 (216) 734-7647		X	No terri- tories listed	Plastic injection molding, metal stampings, vacuum forming, industrial chemicals

SELECTED EXISTING LOW PRESSURE WASHER MANUFACTURERS'
 REPRESENTATIVES IN THE GREAT LAKES REGION

COMPANY NAME, ADDRESS AND PHONE	MANUFACTURERS CURRENTLY REPRESENTED
Dick Dalton 8510 N. Park Ave. Indianapolis, IN 46240 (317) 255-1522	MI-T-M
Aalen Aides, Inc. 2054 S. Isabella Mt. Pleasant, MI 48858 (517) 772-9444	Spartan
David Bornt Four Falcon Ave. Selden, NY (516) 732-8261	MI-T-M
Sam Silverman 3926 Delmor Cleveland Heights, OH 44121 (216) 291-2479	MI-T-M

SELECTED EXISTING SOLVENT DEGREASER AND AQUEOUS
CLEANER MANUFACTURERS' REPRESENTATIVES
IN THE U.S. GREAT LAKES REGION

COMPANY NAME, ADDRESS AND PHONE	MANUFACTURERS CURRENTLY REPRESENTED
Industrial Systems 1411 Woodward Bloomfield Hills, MI (313) 338-7230	Branson (Ultrasonic Vapor Degreasers) Kleer-Flo (Aqueous Cleaners) Technochemie (Vapor Degreasers)
Wagner, A.T. Co. 2720 Wight Detroit, MI (313) 259-3220	Baron-Blakeslee (Vapor Degreasers)
Nolwood Chemical Corp. 8970 Hubbel Detroit, MI (313) 272-0992	Not Available
Leonard R. Nourie, Inc. 360 Euclid Avenue Canonsburg, PA (412) 746-4200	American Metal Wash (Aqueous Cleaners)
FBC Chemical Corp. Route 228 Mars, PA (412) 625-3166	Not Available
RFD Associates; Bob Deckleman 1276 W. Third Street, Suite 419 Cleveland, OH (216) 781-1855	Branson (Ultrasonic Vapor Degreasers)

Continued

Continued

COMPANY NAME, ADDRESS AND PHONE	MANUFACTURERS CURRENTLY REPRESENTED
Jack Matteson 19971 James Couzins Highway Detroit, MI 48235 (313) 342-4575	Phillips (Vapor degreasers)
Byron Ellis Associates 242 Front Street Berea, OH 44017 (216) 826-0559	Crest Ultrasonics (Ultrasonic vapor degreasers)
Dahly Marketing Co. 1651 Channing Court Melrose Park, IL 60160 (312) 345-2424	Kleer-Flo (Aqueous cleaners)
Jerry Rhodes Towers of Windsor Park Suite 7R - Toledo Cherry Hill, NJ 08002 (609) 429-1492	Kleer-Flo (Aqueous cleaners)
Industrial Equipment Sales 6428 Hancock County Road, #330 Fostoria, OH 44830 (419) 894-6551	Final Phase (Aqueous cleaners)
Grinding, Finishing Equipment & Supply Co. 9344 Rockville Road Indianapolis, IN 46234 (317) 271-0309	Final Phase (Aqueous cleaners)

APPENDIX J

MAPI PUBLICATIONS ON PRODUCT LIABILITY



MACHINERY AND ALLIED PRODUCTS INSTITUTE

MAPI PUBLICATIONS ON PRODUCTS LIABILITY*

- THE KASTEN BILL: MAPI Files Statement on Kasten Bill To Establish Uniform Federal Rules of Products Liability Law
Bulletin 6555, April 1985

Volume III: Still More Commentaries From the MAPI Products Liability Council
January 1985

- Volume II: Further Commentaries From the MAPI Products Liability Council
Memorandum G-144, April 1983

- Further Commentaries From the MAPI Products Liability Council
Memorandum G-133, August 1981

Products Liability and Corporate Acquisitions
Memorandum G-123, August 1980

- What's Happening in Products Liability?—Some Recent Studies in the Field
Memorandum G-113, January 1980

Products Liability—What Next?
A Transcript of a MAPI Conference, 1978

Company Programs To Reduce Products Liability: Some Matters To Be Considered
1978

Company Programs To Reduce Products Liability Hazards
A Transcript of a MAPI Seminar, 1972

Products Liability and Reliability: Some Management Considerations
1967

"Products Liability: Tax Relief and Tort Reform Measures Before the 96th Congress"
Bulletin 5857, April 1979

Products Liability: A MAPI Survey
Memorandum G-87, August 1976

Products Liability and Capital Goods
Memorandum G-52, October 1970

A New Look at Products Liability
Memorandum G-51, October 1970

* Listing does not include numerous MAPI statements on this subject presented at congressional hearings, to the Interagency Task Force on Product Liability chaired by the Under Secretary of Commerce, and to the successor, the Commerce Department's Task Force on Product Liability and Accident Compensation.

- Copies held by the U.S. Trade and Investment Development Division Department of External Affairs of the Government of Canada.

APPENDIX K

PONTIAC ENGINEERING STANDARDS MANUAL
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GENERAL MOTORS CORPORATION**

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MANUFACTURING ENGINEERING STANDARDS
PONTIAC MOTOR DIVISION
GENERAL MOTORS CORPORATION

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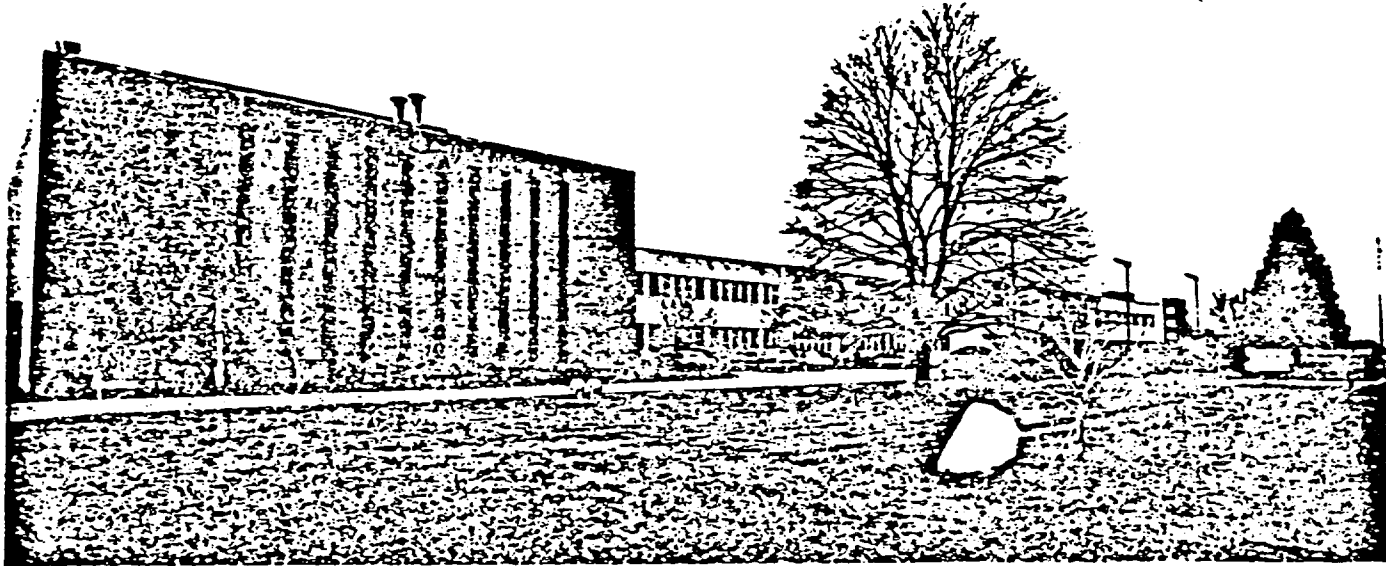
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APPENDIX L

FACTORY MUTUAL APPROVAL AND
TESTING SERVICES

FACTORY MUTUAL APPROVAL AND TESTING SERVICES



The Factory Mutual Engineering & Research Corporation home offices in Norwood, Massachusetts.

The equipment, materials and services listed in this Guide have been approved, unless otherwise specified, by the Factory Mutual Research Corporation. In every case, these products and services have been subjected to examinations and inspections and have been found to satisfy the criteria for approval. These examinations and inspections are performed by Factory Mutual technicians and engineers according to Factory Mutual requirements or recognized national and international requirements. Listed products are readily identifiable and available on the market.

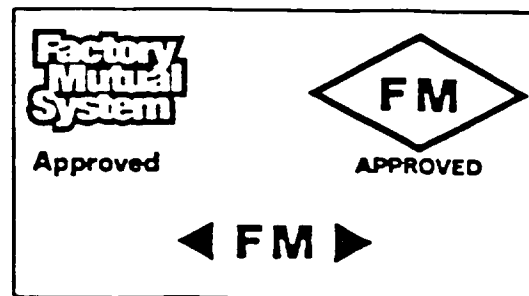
Continuance of approval depends on satisfactory performance in the field. Periodic reexaminations of equipment, materials and services and followup inspections of the manufacturing facility or service are parts of approval. Also as a condition of retaining approval, manufacturers may not change a product or service without prior authorization by FMRC. Unless covered by agreements executed between the manufacturer and Factory Mutual, approved products should not be altered or otherwise modified during or after installation. Unauthorized alterations or modifications may impact on the safety and performance of the product and will void the approval.

There is a distinction between Factory Mutual Research Corporation "approval" and Factory Mutual "acceptance." *Approval* is confirmation and subsequent listing by Factory Mutual that a product or service has been examined according to requirements and found suitable, subject to any limitations stated in the approval. Devices and services listed in this Guide are approved, unless otherwise indicated. *Acceptance* is confirmation that equipment or materials installed at a specific location are suitable for their intended use. *Accepted equipment or materials may be, but are not necessarily, approved.*

In addition to testing a product for approval, Factory Mutual tests products to meet certain standards or criteria set and required by others. Sometimes a product so tested is marked or advertised to that effect. However, FMRC approval should not be inferred.

Approval of a product does not imply any warranty by the Factory Mutual System against defects or failure in service, nor any responsibility in regard to patent infringements.

Most FMRC approved products will bear one of the following marks, with or without the word "approved." Only companies providing approved products or services may use these marks on their products or in their literature or advertising. The marks may be used only for the specific products or services approved.



It is suggested that the listings in this Guide be consulted before products affecting property conservation are purchased. Manufacturers' catalogs should also be consulted for further explanation of specific model numbers. The particular product, as listed, should be specified when an order is placed with the manufacturer or supplier.

One copy of the Guide is available as a loss prevention service to properties insured in the Factory Mutual System. Additional copies of the Guide may also be purchased for \$25.00 a copy. Orders should be addressed to Training Resource Center, Publications-Order Processing Department, Factory Mutual Engineering & Research, 1151 Boston-Providence Turnpike, P.O. Box 9102, Norwood, MA 02062. (See order card attached.)

The editors are grateful to the manufacturers who have supplied illustrative material. Pictures selected show typical devices and do not indicate special merit for a particular make. Nor is the order of listing indicative of comparative merit; it is entirely alphabetical.

CLEANING TANKS, Dipping, Washing

Safety dip tanks are recommended where flammable liquids are used in the coating, cleaning and dipping of small parts. Approved dip tanks may be obtained in sizes up to 2 ft² (0.19 m²) and are equipped with automatically closing covers actuated by fusible links.

Wash tanks are more convenient than perforated screen type bench cans for washing small parts in quantities. They are available in sizes up to 14½ in. (368.3 mm) in diameter, and in square or rectangular shape. The perforated basket containing the parts is lowered into the liquid and moved about for a short time. After the washing, the basket is lifted up onto brackets in the can and allowed to drain. Tanks are suitable also for dipping with the basket removed. A fusible link arrangement will close the cover automatically and snuff out fire in the container.

Approved parts washers are for use only with safety solvents having a flashpoint of 100°F (38°C), TAG closed tester, ASTM D-56-77, or above.

A & A Sheet Metal Products Inc 5122 N State Rd 39 LaPorte IN 48350
Self-Closing Rinse Tank. Models R8, R18, R20, R30. 8, 18, 20, 30 gal (30.3, 68.1, 75.7, 113.6 dm³) capacities, respectively.
Safety Dip Tank. Models L-7, L-8, L-11, L-20.

Graymills Corp 3705 N Lincoln Av Chicago IL 60613
Handi-Kleen Safety Tank. Models S18, S32, SL18, SL32.
Handi-Kleen Parts Washer. Models P18, PL18, P32, PL32, PL38.
All models have fusible link cover mechanisms that function at 160°F (71°C).

Justrite Mfg Co Box 565 Mattoon IL 61938
Self-Closing Rinse Tank. Model Nos. 25080, 25140, 25150, 25110, 25260, 25220.
Dip Tank. Model Nos. 27150, 27190, 27311, 27322, 27417, 27601, 27602, 27603, 27605, 27608.
Wash Tank. Model Nos. 27230, 27260, 27711, 27712, 27713, 27716. With basket.
Automatic Cleaning Tank. Model 28100 has pneumatic oscillator platform, 160°F (71°C) fusible link to hold cover open and 30 gal (113.6 dm³) cap. Model 28105 has added metal basket and removable tray.
Cleaning Tank. Model No. 27310. 8 gal (30.3 dm³) capacity. 160°F (71°C) fusible link holds cover open.

Protectoseal Co 225 W Foster Av Bensenville IL 60106
Protectoseal Dip Tank. Nos. 284L, 3 pt (1.4 dm³); 271, 6 gal (22.7 dm³); 272, 12½ gal (47.3 dm³); 1448E. With brush rack.
Protectoseal Dip Tank. Nos. 1423A, 1 gal (3.8 dm³); 1423, 2 gal (7.6 dm³); 1425E, 3½ gal (13.2 dm³); 1426E, 5 gal (18.9 dm³); 1428E, 8 gal (30.3 dm³). With optional removable basket.
Protectoseal Wash Tank. Model 1438G. With drainboard, removable basket, self-closing cover.
Protectoseal Wash Tank. Nos. 277A, 277T, 277R, 8 gal (30.3 dm³), 1, 2, 3 compartments respectively; 279A, 279T, 279R, 25 gal (94.6 dm³), 1, 2, 3 compartments respectively. Full capacity 11 gal (41.6 dm³). Stands waisthigh. Gravity-closure cover operated by foot treadle.
Protectoseal Spray- and Dip-Tank Station. Series 1500, 1600.
Protectoseal Spray Gun Container. Model No. 1360. With removable basket and self-closing cover.

Safety-Kleen Corp 16325 W Ryerson Rd New Berlin WI 53151
Parts Washer. Model Nos. 17.4X, 16 gal (60.6 dm³); 30.3X, 30 gal (113.6 dm³). Fusible link holds cover open.

APPENDIX M

TRADE ASSOCIATIONS

APPENDIX M

TRADE ASSOCIATIONS FOR MANUFACTURERS' REPRESENTATIVES
AND DISTRIBUTORS

★2323★ SOCIETY OF MANUFACTURER'S REPRESENTATIVES

(Manufacturer's Agents) (SMR)
700 E. Maple Rd., No. 202 Phone: (313) 646-3331
Birmingham, MI 48011 Carol Kettenbeil, Exec.Sec.
Founded: 1953. Members: 400. Manufacturers representatives and agents.
Informs members of manufacturers who are seeking agency representation.
Bestows awards; conducts annual seminar. Maintains Representative
Certification Program. Publications: (1) Newsletter, monthly; (2) Roster of
Membership, annual. Formerly: Society of Manufacturer's Agents.
Convention/Meeting: monthly, except June, July, and August - always
Detroit, MI area.

★1955★ MECHANICAL EQUIPMENT MANUFACTURERS
REPRESENTATIVES ASSOCIATION (Industrial Equipment) (MEMRA)

c/o Engineering Center
11 W. Mt. Vernon Pl. Phone: (301) 686-8700
Baltimore, MD 21201 G. Robert Reese, Pres.
Founded: 1960. Members: 40. Manufacturer's representatives united to
seek better ways to serve the industry as well as to seek information which
will help members improve the efficiency of their business operations.
Sponsors expositions. Membership presently concentrated in the Baltimore,
MD area, but new chapters in other cities may be formed. Publications:
Directory, biennial.

★1324★ AGRICULTURAL AND INDUSTRIAL MANUFACTURERS

REPRESENTATIVES ASSOCIATION (Farm Equipment) (AIMRA)
P.O. Box 1311 Phone: (913) 262-1350
Mission, KS 66222 Frank Bistrom, Exec.Dir.
Founded: 1962. Members: 200. Staff: 2. Manufacturers representatives
(155) and manufacturers (75). Purposes are: to promote professionalism
among representatives; to maintain strong relations with short line
manufacturers in the farm, industrial, power, garden, and lawn equipment
fields; to encourage adherence to the association's code of ethics. Conducts
seminars. Publications: (1) Representative, bimonthly; (2) Membership
Directory, annual. Formerly: (1963) American Farm and Power Equipment
Agents Association. Convention/Meeting: annual management conference -
1984 Nov. 25-28, Chicago, IL; 1985 Nov. 15-18, Toronto, ON, Canada;
1986 Atlanta, GA; 1987 New Orleans, LA.

★1335★ NATIONAL FARM AND POWER EQUIPMENT DEALERS
ASSOCIATION (NFPEDA)

P.O. Box 8517 Phone: (314) 821-7220
10877 Watson Rd. William E. Gabraith, Exec.V.Pres.
St. Louis, MO 63126
Founded: 1900. Members: 11,000. Staff: 60. Regional Groups: 33.
Retailers of farm machinery, implements, light industrial machinery, tools,
vehicles, lawn and garden equipment, and related supplies. Conducts programs
on management training, governmental, and trade relations. Sponsors group
health and accident insurance program for members and their employees.
Compiles statistics. Publications: (1) Farm and Power Equipment Magazine,
monthly; (2) Official Guide - Tractors and Farm Equipment, semiannual; (3)
Official Industrial Equipment Guide, semiannual; also publishes Lawn and
Garden Valuation Guide and Management Aids. Formerly: (1962) National
Retail Farm Equipment Association. Convention/Meeting: annual - 1985
Sept. 8-12, Louisville, KY; 1986 Aug. 24-28, Reno, NV; 1987 Aug. 16-19,
Nashville, TN.

★425★ AUTOMOTIVE WAREHOUSE DISTRIBUTORS ASSOCIATION
(AWDA)

9140 Ward Pkwy. Phone: (816) 444-3500
Kansas City, MO 64114 Martin Fromm, Pres.
Founded: 1947. Members: 879. Warehouse distributors of automotive parts
and supplies (610); manufacturers of automotive parts and suppliers (261);
publishers (8). Publications: (1) Newsletter, monthly; (2) Leadership
Directory, annual. Convention/Meeting: annual conference - always Las
Vegas, NV. 1984 Oct. 29-Nov. 2; 1985 Oct. 28-Nov. 1; 1986 Oct. 27-31;
1987 Oct. 26-30; 1988 Oct. 31-Nov. 4.

★2322★ MANUFACTURERS' AGENTS NATIONAL ASSOCIATION
(MANA)

P.O. Box 3467 Phone: (714) 859-4040
23016 Mill Creek Rd. James J. Gibbons, Pres.
Laguna Hills, CA 92654
Founded: 1947. Members: 7800. Staff: 16. Manufacturers' agents in all
fields representing two or more manufacturers on a commission basis;
associate members are manufacturers and others interested in improving the
agent-principal relationship. Maintains fair code of ethics and rules of business
and professional conduct; maintains list of attorneys and accountants
experienced in agency matters; issues model standard form of agreement.
Committees: Education; Speakers' Bureau. Publications: (1) Agency Sales
Magazine, monthly; (2) Repletter, monthly; (3) Confidential Bulletins,
quarterly; (4) Annual Directory of Members; also publishes special
announcements. Convention/Meeting: quarterly regional seminars - 1984
(next) Sept. 20-21, Boston, MA and Nov. 15-16, San Francisco, CA.

★1969★ NATIONAL INDUSTRIAL DISTRIBUTORS ASSOCIATION
(Industrial Equipment) (NIDA)

1900 Arch St. Phone: (215) 564-3484
Philadelphia, PA 19103 Robert G. Clifton, Exec.V.Pres.
Founded: 1905. Members: 750. Staff: 6. Wholesalers of industrial
machinery, equipment, and supplies. Compiles statistics. Conducts seminars
on sales management training, inventory management, purchasing paperwork,
and sales profitability analysis. Committees: Educational Aids; Financial
Management; Government Affairs; Industry Recognition; Operations
Management; Sales and Marketing. Publications: Membership Directory,
annual. Formerly: National Supply and Machinery Distributors Association.
Convention/Meeting: annual - always May. 1985 Las Vegas, NV; 1986
Washington, DC; 1987 San Francisco, CA.

★2323★ SOCIETY OF MANUFACTURER'S REPRESENTATIVES
(Manufacturer's Agents) (SMR)

700 E. Maple Rd., No. 202 Phone: (313) 646-3331
Birmingham, MI 48011 Carol Kettenbeil, Exec.Sec.
Founded: 1953. Members: 400. Manufacturers representatives and agents.
Informs members of manufacturers who are seeking agency representation.
Bestows awards; conducts annual seminar. Maintains Representative
Certification Program. Publications: (1) Newsletter, monthly; (2) Roster of
Membership, annual. Formerly: Society of Manufacturer's Agents.
Convention/Meeting: monthly, except June, July, and August - always
Detroit, MI area.

★2238★ ASSOCIATED EQUIPMENT DISTRIBUTORS (Machinery)
(AED)

615 W. 22nd St. Phone: (312) 654-0650
Oak Brook, IL 60521 P. D. Hermann, Exec.V.Pres.
Founded: 1919. Members: 1330. Staff: 35. Local Groups: 52. Distributors
and manufacturers of construction, mining, logging and road maintenance
equipment in the U.S., Canada, and overseas. Activities include: industry
information and statistics; periodic conferences on financial management,
rental management, sales management, service and parts management;
seminars for salesmen; program for younger executives. Maintains
Washington, DC office and field services program as well as a separate
service corporation (AED Research and Services). Offers group and business
insurance to members. Conducts on-going industry relations program with
construction equipment manufacturers and users. Operates Market Trends
Index Program, covering monthly distributor sales and inventories. Sponsors
annual Founders Awards for significant industry contributions and
accomplishments. Committees: Casualty Insurance and Safety; Education
and Training; Financial Management; Government Relations; Industry
Relations; Industry Round Table (distributors and manufacturers); Light
Equipment Distributor Council; Market Study and Research; Political Action;
Public Relations; Service and Parts Management; Young Executives.
Publications: (1) Contact (Bulletin of Industry News), biweekly; (2)
Washington Watch, monthly; (3) Construction Equipment Distribution, 10/
year; (4) Topics (for local associations), quarterly; (5) Compilation of National
Averaged Rental Rates, annual; (6) Directory, annual; (7) Survey on Cost-of-
Doing Business, annual; also publishes books and pamphlets. Formerly:
National Distributors Association of Construction Equipment. Convention/
Meeting: annual - always January. 1985 Jan. 26-29, Washington, DC; 1986
Jan. 25-28, San Francisco, CA; 1987 Jan. 17-20, Chicago, IL; 1988 Jan.

TRADE ASSOCIATIONS FOR PRESSURE WASHER MANUFACTURERS

WATER JET TECHNOLOGY ASSOCIATION

University of Missouri, Rolla
201 Rock Mechanics Facility
Rolla, Missouri 65401-0249

Phone: (314) 341-4311
Dr. David A. Summers, President

Founded: 1983. Created by members of the water jet industry in concert with university faculty and government officials to provide a means of service communication and cooperation within the industry; to promote the interests of the jet application industry in all branches, including the establishment of codes of practice and safety standards. Publications: Newsletter, bimonthly. Convention/Meeting: Biannual conference. 1985 May, Pittsburgh, PA.

2270 CLEANING EQUIPMENT MANUFACTURERS ASSOCIATION (Maintenance) (CEMA)

6043 Hudson Rd., Suite 135
St. Paul, MN 55125

Phone: (612) 731-1051

Gretchen B. Dian, Exec. Dir.

Founded: 1980. Members: 90. Staff: 2. Manufacturers of pressure washer systems; manufacturers of component parts for pressure washer systems. To promote the powered cleaning systems and components industry. Acts as a voice for the industry; maintains national media relations. Promotes educational advancement of members through programs on current industry topics such as finance, marketing, and sales; offers network service to educate and recruit young persons considering careers in the field. Publications: News, monthly. Convention/Meeting: semiannual exhibition conference - always spring and fall. 1984 (next) October, Toronto, ON, Canada.

3131 AMERICAN RENTAL ASSOCIATION (ARA)

1900 19th St.
Moline, IL 61265

Phone: (309) 764-2475

C. A. Siegfried, Jr., Exec. Dir.

Founded: 1956. Members: 2590. Staff: 15. Local Groups: 65. Firms engaged in the rental of medical equipment, banquet and party equipment, tools, machinery and other products; includes independent, franchised and chain store operators. Associates are suppliers of equipment, merchandise and other items. Seeks to develop standard of ethics; foster better business methods; promote study of economic trends in the rental industry. Presents three annual awards: Distinguished Service, Meritorious Service, and Special Service. Committees: Education; Legislation; Manufacturers Relations; Political Action; Research. Councils: Construction and Industrial Equipment; General Tool and Equipment; Medical & Party Equipment; Mobile Equipment. Publications: (1) Newsletter, monthly; (2) Rental Age, monthly; (3) Roster of Members, annual. Formerly: (1961) American Associated Rental Operators. Convention/Meeting: annual trade show - 1985 Feb. 10-14, Anaheim, CA.

TRADE ASSOCIATIONS FOR PRESSURE WASHER USERS

***2245* EQUIPMENT MAINTENANCE COUNCIL (Machinery) (EMC)**
1133 15th St., N.W., Suite 1000 Phone: (202) 429-9440
Washington, DC 20005 William E. Schmidt, Exec.Dir.
Founded: 1981. Members: 372. Persons who select, maintain, or manage the operations of heavy equipment and components, editorial members of the trade press, and representatives of educational institutions; individuals or companies that manufacture, sell, or service mobile heavy equipment. Seeks to represent and provide a forum for personnel concerned with the selection, application, management, and maintenance of heavy equipment used in mobile operations; provide training and continuing education programs; and establish better working relationships with equipment manufacturers, suppliers, federal and state agencies, equipment dealerships, universities, technical colleges, and other maintenance groups affecting the design, knowledge, and service of mobile heavy equipment. Conducts seminars and workshops. Bestows awards and compiles statistics on equipment use. Study Groups: Attachments; Drive Trains and Chassis; Electrical; Engines; Equipment Energy Conservation; Hydraulics, Fuels and Lubricants; Management Control Methods; Shops, Tools and Technicians; Technical Information and Standardization; Undercarriages. Divisions: Construction; Educational; Governmental; Logging and Forestry; Manufacturer, Dealer and Distributor; Mining; Oil Field, Exploration and Drilling; Utilities. Publications: (1) Newsletter, quarterly; (2) Membership Directory, annual; also publishes Technical Tips. Convention/Meeting: annual - always spring. 1985 Denver, CO.

***2271* ENVIRONMENTAL MANAGEMENT ASSOCIATION (Maintenance) (EMA)**
1019 Highland Ave. Phone: (813) 586-5710
Largo, FL 33540 Harold C. Rowe, Pres.
Founded: 1957. Members: 48,000. Staff: 7. Local Groups: 46. Individuals administering environmental sanitation maintenance programs in industrial plants, commercial and public buildings, institutions, and governmental agencies. Conducts research activities and educational programs. Presents awards; operates placement service; maintains biographical archives. Compiles statistics. Subsidiaries: Building Service Managers Institute; Food Sanitation Institute (see separate entry); Health Care Institute; Sanitation Suppliers and Contractors Institute; The Green Industry Division. Publications: Professional Sanitation Management, 6/year. Formed by merger of: Association of Food Industry Sanitarians; Industrial Sanitation Management Association; National Association of Bakery Sanitarians. Formerly: Institute of Sanitation Management. Convention/Meeting: annual - always Clearwater Beach, FL. 1984 Oct. 19-25; 1985 Oct. 4-10.

***2280* AMA/INTERNATIONAL (Management) (AMA/I)**
135 W. 50th St. Phone: (212) 586-8100
New York, NY 10020 Robert S. Rano, Pres.
Founded: 1956. Staff: 149. Overseas division of American Management Associations (see separate entry). To develop management education services overseas and to serve as an international organization extending and adapting AMA techniques and services in the international business community. Conducts over 500 meetings a year; in-company programs; and multimedia. Management center locations: Brussels, Belgium; Sao Paulo, Brazil; Mexico City, Mexico; and Toronto, ON, Canada. Also known as: American Management Associations/International. Formerly: International Management Association.

***1335* NATIONAL FARM AND POWER EQUIPMENT DEALERS ASSOCIATION (NFPEDA)**
P.O. Box 8517 Phone: (314) 821-7220
10877 Watson Rd. William E. Galbraith, Exec.V.Pres.
St. Louis, MO 63126
Founded: 1900. Members: 11,000. Staff: 60. Regional Groups: 33. Retailers of farm machinery, implements, light industrial machinery, tools, vehicles, lawn and garden equipment, and related supplies. Conducts programs on management training, governmental, and trade relations. Sponsors group health and accident insurance program for members and their employees. Compiles statistics. Publications: (1) Farm and Power Equipment Magazine, monthly; (2) Official Guide - Tractors and Farm Equipment, semiannual; (3) Official Industrial Equipment Guide, semiannual; also publishes Lawn and Garden Valuation Guide and Management Aids. Formerly: (1962) National Retail Farm Equipment Association. Convention/Meeting: annual - 1985 Sept. 8-12, Louisville, KY; 1986 Aug. 24-28, Reno, NV; 1987 Aug. 16-19, Nashville, TN.

***2586* COUNCIL OF FLEET SPECIALISTS (Motor Vehicle) (CFS)**
8245 Neman Rd., Suite 111 Phone: (913) 492-1620
Shawnee Mission, KS 66214 U. J. Reese, Exec.V.Pres.
Founded: 1967. Members: 217. Staff: 5. Heavy duty truck parts and service distributors. Committees: Planning; Reciprocal Warranty; Research. Publications: Directory, annual. Convention/Meeting: annual - 1985 Apr. 21-24, Las Vegas, NV; 1986 May 4-7, Dallas, TX; 1987 Apr. 26-29, Kansas City, MO.

***2272* INTERNATIONAL MAINTENANCE INSTITUTE (IMI)**
P.O. Box 266695 Phone: (713) 481-0869
Houston, TX 77207 George C. Colass, Bd.Chm.
Founded: 1961. Members: 1500. Staff: 1. Local Groups: 15. Persons directly engaged in maintenance in a key position (superintendent, supervisor, foreman, manager) for chemical refineries, manufacturing firms, government agencies, institutions, and other organizations; associate members are persons indirectly engaged in maintenance in sales, service, consulting, or publications capacities. To promote the professionalism of maintenance personnel and keep members informed of developments in the field. Assembles and disseminates maintenance information related to modern cost-saving methods, processes, and equipment. Conducts plant tours; local chapters sponsor monthly meetings, lectures, and discussions on such topics as preventive maintenance, electrical specification and maintenance, purchasing procedures, painting, heating, and grounds maintenance. Publications: Maintenance Newsletter, bimonthly. Convention/Meeting: annual.

***2273* INTERNATIONAL SANITARY SUPPLY ASSOCIATION**
(Maintenance) (ISSA)
5330 N. Elston Ave. Phone: (312) 286-2575
Chicago, IL 60630 Jack D. Ramaley, Exec.V.Pres.
Founded: 1923. Members: 3000. Staff: 13. Manufacturers and distributors of cleaning and maintenance supplies, chemicals, and equipment used by janitors, custodians, and maintenance men in all types of industrial, commercial, and institutional buildings. Provides home study courses for custodians; produces films and other educational materials. Sponsors competitions; offers computerized services and specialized education; maintains data bases. Bestows annual Cleaner World Award. Publications: (1) ISSALERT, biweekly; (2) ISSA Today, monthly; (3) Membership Directory, annual; also publishes booklets on a wide variety of maintenance subjects. Formerly: National Sanitary Supply Association. Convention/Meeting: annual Educational Conference and Merchandise Exposition - always October. 1984 Oct. 18-20, Los Angeles, CA; 1985 Oct. 17-19, Atlanta, GA; 1986 Oct. 23-25, Houston, TX; 1987 Oct. 29-31, Anaheim, CA.

***2268* AMERICAN INSTITUTE OF MAINTENANCE (AIM)**
P.O. Box 2068 Phone: (213) 244-1176
Glendale, CA 91209 Charles F. Wheeler, Jr., Sec.
Founded: 1958. Members: 402. Staff: 2. Individuals and organizations active in cleaning maintenance and management, including Contract Cleaner firms. Has developed home study educational courses and publications to promote self-improvement and efficient work methods. Maintains library of books, booklets, and articles on building maintenance. Publishes brochures, maintenance supervision course, four educational booklets, and Contract Cleaner Companion Manual.

***2269* BUILDING SERVICE CONTRACTORS ASSOCIATION**
INTERNATIONAL (Maintenance) (BSCA)
8315 Lee Hwy., Suite 301 Phone: (703) 698-8810
Fairfax, VA 22031 Walter L. Cook, CAE, Exec.V.Pres.
Founded: 1965. Members: 1500. Staff: 16. Individuals, firms, and corporations primarily engaged in contracting of building maintenance services such as providing labor, purchasing materials, and supplying janitorial cleaning and maintenance for a building or its surroundings; associate members are manufacturers of cleaning supplies and equipment. Seeks to provide a unified voice of building service contractors and to promote increased recognition by government, property owners, and the general business and professional public. Conducts continuing study and action, through committees and special task groups, in such areas as public affairs, costs and ratios, uniform accounting, industrial relations and personnel, marketing and sales, contract improvement, research and planning, materials and supplies sources, group insurance, management training, statistics collection, safety, and insurance costs. Has developed a certification program for building service executives, and a registration program for building service managers. Holds annual executive and educational seminars. Publications: (1) Magazine (services), monthly; (2) Legal Rights Series, quarterly; also publishes management and technical monographs. Formerly: (1974) National Association of Building Service Contractors. Convention/Meeting: annual - 1985 April, Chicago, IL; 1986 April, Nashville, TN; 1987 May, Reno, NV.

TRADE ASSOCIATIONS FOR MANUFACTURERS AND
USERS OF CLEANERS

★2249★ NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION
(Machinery) (NMTBA)

7901 Westpark Dr.
McLean, VA 22102

Phone: (703) 893-2900
James A. Gray, Pres.

Founded: 1902. Members: 400. Staff: 56. Manufacturers of power driven machines, not portable by hand, that are used to shape or form metal by

cutting, impact, pressure, electrical techniques, or a combination of such processes. Seeks to improve methods of producing and marketing machine tools; promotes research and development in the industry. Sponsors: International Machine Tool Show every two years; legal and tax clinics; sales and sales training conferences; seminars for training in use of numerical controls, accident prevention and safety, and advertising management; annual competition for excellence in machine tool advertising. Develops and supervises standards for training apprentices. Participates in programs of standardization of design and performance of machine tools and components. Serves as a clearinghouse for technical aspects of the industry. Promotes orderly disposal of government-owned surplus machine tools. Collects and publishes monthly machine tool production data. Committees: Distributor Relations; Economics and Statistics; Electrical Standards; Environmental; Financial Reporting and Analysis; Government Relations; Human Resources and Training; International Trade; Machine Tool Political Action; Manufacturing; Marketing Communications; NC Software; Numerical Control; OSHA; Product Liability; Public Affairs; Research and Development; Safety Standards; Sales Management; Service Management; Show; Small Business; Technical Standards; Transportation; Vocational Education. Publications: (1) Directories of Machine Tools, annual; (2) Economic Handbook of the Machine Tool Industry, annual; also publishes Machine Tools Today and Made in USA. Convention/Meeting: semiannual - 1984 (next) Nov. 7-10, Boca Raton, FL; 1985 May 1-4, Hot Springs, VA and Nov. 6-9, Scottsdale, AZ; 1986 Apr. 23-26, Boca Raton, FL and Oct. 22-25, Phoenix, AZ; 1987 Apr. 8-11, Palm Beach, FL and Oct. 21-25, Rancho Mirage, CA.

★5804★ SOCIETY OF MANUFACTURING ENGINEERS (SME)

P.O. Box 930
One SME Dr.
Dearborn, MI 48121

Phone: (313) 271-1500
William J. Hilly, Exec. V. Pres.

Founded: 1932. Members: 70,000. Senior Chapters: 240. Student Chapters: 90. Professional society of manufacturing engineers and

management executives concerned with manufacturing techniques. To advance the science of manufacturing through the continuing education of manufacturing engineers and management. Administers research and educational grants; conducts national seminars, tool and manufacturing expositions, chapter education courses, and programmed learning courses. Maintains extensive library. Sponsors eight national awards. Committees: Education; Honor Awards; Technical Council. Divisions: Assembly; Casting, Molding, and Metallurgical Processing; Engineering Materials; Finishing and Coating; Inspection and Quality Control; Manufacturing Management; Manufacturing/Numerical Control Systems; Material Forming; Material Removal; Tool Engineering. Subsidiaries: Association for Finishing Processes of SME; Computer and Automated Systems Association of SME; Robotic International; and SME Manufacturing Engineering Education Foundation (see separate entries). Publications: (1) Manufacturing Engineering, monthly; (2) Robotics Today, bimonthly; (3) CAD/CAM Technology, quarterly; (4) Newsletter, quarterly; (5) Manufacturing Engineering Transactions, annual; (6) Technical Division Newsletters, irregular. Formerly: (1960) American Society of Tool Engineers; (1969) American Society of Tool and Manufacturing Engineers. Convention/Meeting: annual - always April or May. 1985 May 6-9, Detroit, MI.

TRADE ASSOCIATIONS FOR USERS OF CLEANERS

★5343★ ASSOCIATION FOR FINISHING PROCESSES OF SME

(Coatings) (AFP)
P.O. Box 930
One SME Dr.
Dearborn, MI 48128
Phone: (313) 271-1500
William J. Yeates, Exec. Dir.
Founded: 1975. Members: 2000. Staff: 5. Regional Groups: 5. Sponsored by Society of Manufacturing Engineers (see separate entry). Engineers, scientists, and technicians involved in industrial finishes with specialization in powder coating, radiation curing, waterborne, high solids, wood finishing, coating and finishing of plastics, and surface preparation. Purposes are to serve the continuing education needs of the members by: following and assessing the trends and developments in industrial finishes; interpreting, publishing and distributing such information; cooperating and coordinating activities with other technical societies and trade organizations concerned with the dissemination of knowledge related to industrial finishing. Conducts seminars, clinics, and expositions. Publications: Newsletter, bimonthly; has also published a book, *Fundamentals of Powder Coating*. Convention/Meeting: biennial - 1985 Sept. 17-19, Detroit, MI.

★406★ AUTOMOTIVE ENGINE REBUILDERS ASSOCIATION (AERA)

234 Waukegan Rd.
Glenview, IL 60025
Phone: (312) 729-6400
James H. Templin, Pres.
Founded: 1922. Members: 3150. Staff: 7. Wholesalers of automotive replacement parts and equipment with machine shop operations; associate members are suppliers of parts, equipment, tools, and services to the rebuilder members. Acts as clearinghouse for automotive jobber machine shop problems. Presents Charles W. Yount Distinguished Service Award. Publications: (1) Monthly Bulletin; (2) Proceedings of Annual Convention; (3) Membership Roster, biennial; (4) Camshaft Identification Guide, triennial; (5) Cylinder Head and Block Identification Guide, triennial; (6) Administrative Bulletin, irregular; (7) Service Bulletin, irregular; (8) Shop Procedure Bulletins, irregular; (9) Technical Bulletin, irregular; also publishes *The Crankshaft Manual*. Formerly: National Cylinder Grinders Association. Convention/Meeting: annual - 1985 June 20-22, Washington, DC.

★5398★ AMERICAN ELECTROPLATERS' SOCIETY (AES)

1201 Louisiana Ave.
Winter Park, FL 32789
Phone: (305) 647-1197
J. Howard Schumacher, Jr., Exec. Dir.
Founded: 1909. Members: 9000. Staff: 21. Local Groups: 85. International professional society of scientists, technicians, and others interested in research in electroplating, surface finishing, and allied arts. Bestows awards; conducts research programs and specialized education. Publications: *Plating and Surface Finishing*, monthly. Formerly: (1913) National Electroplaters Association of U.S. and Canada. Convention/Meeting: annual - 1985 July 14-18, Detroit, MI; 1986 June 22-27, Philadelphia, PA; 1987 Chicago, IL.

★2246★ MACHINERY AND ALLIED PRODUCTS INSTITUTE (MAPI)

1200-18th St., N.W.
Washington, DC 20036
Phone: (202) 331-8430
Charles W. Stewart, Pres.
Founded: 1933. Members: 500. Staff: 45. Companies and 22 individual product line associations. Membership concentrated in capital goods and allied product industries; producers of machinery, industrial equipment, components, cutting tools, farm equipment, graphic arts equipment, scientific and industrial instruments, forgings, testing equipment, material handling equipment, business and electronic equipment, construction equipment, and aerospace products. Conducts research on the economics of capital goods (the facilities of production, distribution, transportation, communication, and commerce) to further the technological progress of the United States; also engages in management research. Keeps members informed on key regulatory and legislative developments through analytical reports. Sponsors seminars on health care cost containment, international operations, accounting and financial reporting, pension administration, equal employment requirements, federal taxation, products liability, and business investment policy. Management Councils: Financial; Government Contracts; Human Resources; International Operations; Law; Manufacturing; Marketing; Products Liability; Public Affairs; Purchasing; Risk Management; Tax. Publications: (1) Bulletin Memorandum and Executive Letter, 4-5/week; (2) *Capital Goods Review*, quarterly; also publishes books, manuals, pamphlets and economic briefs on capital formation and investment, government contracts, export financing, leasing of equipment; manuals on business investment policy, sales compensation, accounting, and other management problems.

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★2690★ NATIONAL PAINT AND COATINGS ASSOCIATION (Paints and Finishes) (NPCA)

1500 Rhode Island Ave., N.W.
Washington, DC 20005

Phone: (202) 462-6272

Larry L. Thomas, Exec. Dir.

Founded: 1933. Members: 1000. Staff: 55. Local Groups: 30. Manufacturers of paints and chemical coatings; suppliers of raw materials and equipment. Conducts statistical surveys; research, government, and public relations programs; management information programs; and management and technician development programs. Compiles statistics and maintains data bases; bestows awards. Committees: Chemical Coatings; Communications; Credits and Collections; Fire Retardant Coatings; Furniture Finishes; Government Suppliers; High Performance Architectural Coatings; Industry Suppliers; Labeling; Management Information; Manufacturing Management; Marine Coatings; Paint and Coatings Political Action; Scientific; Spray Paint; Tariff; Trade Sales Marketing. Publications: (1) Coatings (newsletter); (2) Annual Report; also publishes member/services directory; "how-to" consumer pamphlets; Technical, Legislative and Legal, Statistical, Traffic, Safety and Health, and Community Services Bulletins; trademark directory; Guide to U.S. Government Paint Specifications; Raw Materials Indexes; Abstract Review; Scientific Circulars; Paint Industry Labeling Guide. Formed by merger of: American Paint Manufacturers Association and National Paint, Oil and Varnish Association. Formerly: National Paint, Varnish and Lacquer Association. Convention/Meeting: annual - 1984 Oct. 22-24, Chicago, IL; 1985 Nov. 4-6, New Orleans, LA; 1986 Nov. 2-5, Atlanta, GA; 1987 Oct. 26-28, Washington, DC; 1988 Oct. 17-19, Chicago, IL.

★2518★ NATIONAL ASSOCIATION OF METAL FINISHERS (Metallurgy) (NAMF)

111 E. Wacker Dr.
Chicago, IL 60601

Phone: (312) 644-6610

J. Dollard Carey, Exec. Dir.

Founded: 1955. Members: 1200. Staff: 6. Local Groups: 24. Management executives of firms engaged in plating, hard chroming, galvanizing, electroforming, metalizing, organic coating, phosphating, rust-proofing, polishing, buffing, anodizing, and other forms of metal finishing. Primarily concerned with management education and development of finishing standards. Compiles statistics. Sponsors annual Silvio C. Taormina Memorial Award, as well as awards of merit and awards for special recognition. Committees: Educational; Government Liaison; Industry Liaison; Operating Costs; Standards; Strategic Materials. Divisions: Anodizing; Barrel Plating; Bumper Plating; Decorative; Electro-Galvanizing; Hard Chrome; Organic Coating; Vacuum Coating. Publications: (1) Finisher's Management, monthly; (2) Finishing Line, monthly; also publishes NAMF Accounting Manual and management manual. Formed by merger of: National Association of Plating and National Federation of Metal Finishers. Convention/Meeting: annual - 1985 Mar. 17-21, Dorado Beach, PR; 1986 Mar. 9-13, Marco Island, FL; 1987 Mar. 1-5, Maui, HI.

APPENDIX N

TRADE SHOWS AND CONVENTIONS

APPENDIX N

SELECTED CONVENTIONS FOR MEETING MANUFACTURERS'
REPRESENTATIVES AND DISTRIBUTORS

AMERICAN MACHINE TOOL DISTRIBUTORS' ASSOCIATION (MACHINERY) (AMTDA)

4720 Montgomery Lane
Bethesda, Maryland 20814

Phone: (301) 654-1200
Robert A. Gale, Exec. V.P.

Convention/Meeting: Annual; also holds auxiliary meeting -
1986: April 13-16, Scottsdale, AZ

SOCIETY OF MANUFACTURERS' REPRESENTATIVES (MANUFACTURERS' AGENTS) (SMR)

700 East Maple Road, No. 202
Birmingham, Missouri 48011

Phone: (313) 646-3331
Carol Kettenbeil, Exec. Sec.

Convention/Meeting: Monthly, except June, July and August -
always Detroit, MI area

NATIONAL INDUSTRIAL DISTRIBUTORS ASSOCIATION (NIDA)

1900 Arch St.
Philadelphia, Pennsylvania 19103

Phone: (215) 564-3484
Robert G. Clifton, Exec. V. Pres.

Convention/Meeting: Annual - 1986: Washington DC;
1987: San Francisco, CA

In addition, industrial trade shows listed in this Appendix are valuable for meeting manufacturers' representatives.

SELECTED TRADE SHOWS AND CONVENTIONS FOR MEETING POTENTIAL CUSTOMERS
FOR HIGH PRESSURE INDUSTRIAL WASHING AND DEGREASING EQUIPMENT

SOCIETY OF MANUFACTURING ENGINEERS (SME)

P.O. Box 930
One SME Drive
Dearborn, Michigan 48121

Phone: (313) 271-1500
William J. Hilly, Exec. V.P.

Convention/Meeting: Annual - always April or May
1986: May 19-22, Philadelphia, PA

AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
(ENGINEERING) (ASHRAE)

1791 Tullie Circle, N.E.
Atlanta, Georgia 30329

Phone: (404) 636-8400
A. T. Boggs, Exec. V.P.

Holds annual meeting and exposition -
1986: January 19-22, San Francisco, CA

NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION (MACHINERY) (NMTBA)

7901 Westpark Drive
McLean, Virginia 22102

Phone: (703) 893-2900
James A. Gray, Pres.

Convention/Meeting: Semiannual - 1985: May 1-4, Host Springs, VA
and November 6-9, Scottsdale, AZ; 1986: April 23-26,
Boca Raton, FL and October 22-25, Phoenix, AZ

AMERICAN INSTITUTE OF PLANT ENGINEERS (ENGINEERING) (AIPE)

3975 Erie Avenue
Cincinnati, Ohio 45208

Phone: (513) 561-6000
Milton Tatter, Exec. Dir.

Convention/Meeting: Annual - 1985: October 7-9, Atlanta, GA;
1986: October 21-23, Chicago, IL

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NATIONAL ASSOCIATION OF METAL FINISHERS (METALLURGY) (NAMF)

111 East Wacker Drive
Chicago, Illinois 60601

Phone: (312) 644-6610
J. Dollard Carey, Exec. Dir.

Convention/Meeting: 1986:March 9-13, Marco Island, FL

In addition to these trade shows noted by study respondents, most of the trade associations listed in Appendix N conduct trade shows.

APPENDIX O

TRADE PUBLICATIONS

APPENDIX O

DIRECTORIES OF MANUFACTURERS' REPRESENTATIVES AND DISTRIBUTORS

<u>TITLE</u>	<u>DIRECTORY</u>
<u>Jobber Topics</u> Irving - Cloud Publication 7300 N. Cicero Avenue Lincolnwood, IL 60646	July - Marketing Directory Issue
<u>Agency Sales</u> P.O. Box 16878 Irvine, CA 92713	July - Manufacturers' Agents National Association Membership Directory
<u>MacRae's Manufacturers' Agents Guide</u> MacRae's Blue Book Inc. 817 Broadway New York, NY 10003	
<u>Profiles of U.S. Chemical Distributors</u> Charles H. Kling & Co., Inc. Fairfield, NJ 07006	

In addition, many of the trade associations for manufacturers' representatives and distributors listed in Appendix N publish membership directories.

PUBLICATIONS - GENERAL INDUSTRIAL

<u>TITLE</u>	<u>DIRECTORY</u>
<u>Thomas Register of American Manufacturers & Thomas Register Catalog File</u> Thomas Publishing Company 1 Penn Plaza New York, NY 10119	17 volume Industrial Purchasing Directory
<u>U.S. Industrial Directory</u> Cahners Publications 999 Summer St. Box 3809 Stamford, CT 06905	
<u>Industrial Equipment News</u> Thomas Publishing Company One Penn Plaza New York, NY 10119	March - Plant Engineering & Maintenance Show
<u>Industry Digest</u> Industrial Products Master Catalog The United Technical Publishing, Inc. 645 Stewart Ave. Garden City, NY 11530	
<u>Marketing Economics Key Plants - Guide to Industrial Purchasing Power</u> Marketing Economics Institute, Ltd. 108 West 39th Street New York, NY 10018	

PUBLICATIONS FOR USERS OF PRESSURE WASHERS

<u>TITLE</u>	<u>DIRECTORY</u>
<u>Installation & Cleaning Specialist</u> Specialist Publications Suite 312,,17835 Ventura Blvd. Encino, CA 91316	May - Annual Directory Issue
<u>Maintenance Supplies</u> MacNair - Dorland Company 101 W. 31st Street New York, NY 10001	November - Buyer's Guide
<u>Sanitary Maintenance</u> Trade Press Publishing Company Box 694 Milwaukee, WI 53201	January - Buyer's Guide
<u>Power</u> McGraw-Hill Publications 1221 Avenue of the Americas New York, NY 10020	November - Plant Design Equipment Roundup
<u>Farm Supplier</u> Watt Publishing Company Sandstone Building Mt. Morris, IL 60154	November - Application Equipment Guide December - Directory & Product Showcase
<u>Farm Building News</u> American Farm Building Services Inc. 260 Regency Court Waukesha, WI 53186	October - Buyer's Guide
<u>Michigan Truck Trader</u> Allied Publications, Inc. 101 E. 14th Street Box 603 Indianapolis, IN 46206	
<u>New Equipment Digest</u> Penton/IPC, Inc. Penton Plaza Cleveland, OH 44114	
<u>Hazardous Waste Report</u> Aspen Systems Corp. 1600 Research Blvd Rockville, MD 20850	

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<u>TITLE</u>	<u>DIRECTORY</u>
<u>Industrial Maintenance and Plant Operation</u> Chilton Company, Ames Division One Chilton Way Radnor, Pennsylvania 19089	
<u>Fleet Equipment</u> Irving - Cloud Publishing Co. 7300 No. Cicero Ave. Lincolnwood, IL 60646	
<u>Fleet Owner</u> McGraw Hill Inc. 1221 Ave. of Americas New York, NY 10020	
<u>Implement & Tractor</u> Intertec Publishing Corp. 9221 Quivira Road Box 12901 Overland Park, Kansas 66212	March - Directory Issue/Product File
<u>Material Handling Engineering</u> Industrial Publishing Company 614 Superior Avenue W. Cleveland, Ohio 44113	Annual Handbook & Directory
<u>Industrial Maintenance & Plant Operations</u> Ames Publishing Company 1 W. Olney Avenue Philadelphia, Pennsylvania 19120	
<u>Maintenance Engineering</u> Cleworth Publishing Company, Inc. 1 River Road Cos Cob, Connecticut 06807	
<u>Professional Sanitation Management</u> Environmental Managment Assn. 1019 Highland Avenue Fargo, Florida 33540	
<u>Specialist, The (Truck Washing)</u> Chilton Chilton Way Radnor, Pennsylvania 19089	

PUBLICATIONS FOR USERS OF CLEANERS

<u>TITLE</u>	<u>DIRECTORY</u>
<u>Metal Finishing</u> Metal & Plastics Publications 1 University Plaza Hackensack, New Jersey 07601	January - Guidebook Directory
<u>Iron Age</u> Chilton Company Chilton Way Radnor, Pennsylvania 19089	January - Annual Issue
<u>Metalworking Digest</u> Gordon Publications Inc. Box 2106-R Morristown, New Jersey 07960	July - Metalworking Buyers Guide October - Metal Cleaning, Coating & Finishing
<u>American Machinist</u> Box 414 Hightstown, New Jersey 08520	
<u>Tooling & Production</u> Huebner Publications 5821 Harper Road Solon, Ohio 44139	
<u>Assembly Engineering</u> Hitchcock Publishing Company Hitchcock Building Wheaton, Illinois 60187	
<u>Products Finishing</u> Gardner Publications 600 Main Street Cincinnati, Ohio 45202	September - Products Finishing Directory
<u>Electronic Products Magazine</u> Hearst Business Communications, Inc. 645 Stewart Avenue Garden City, New York 11530	

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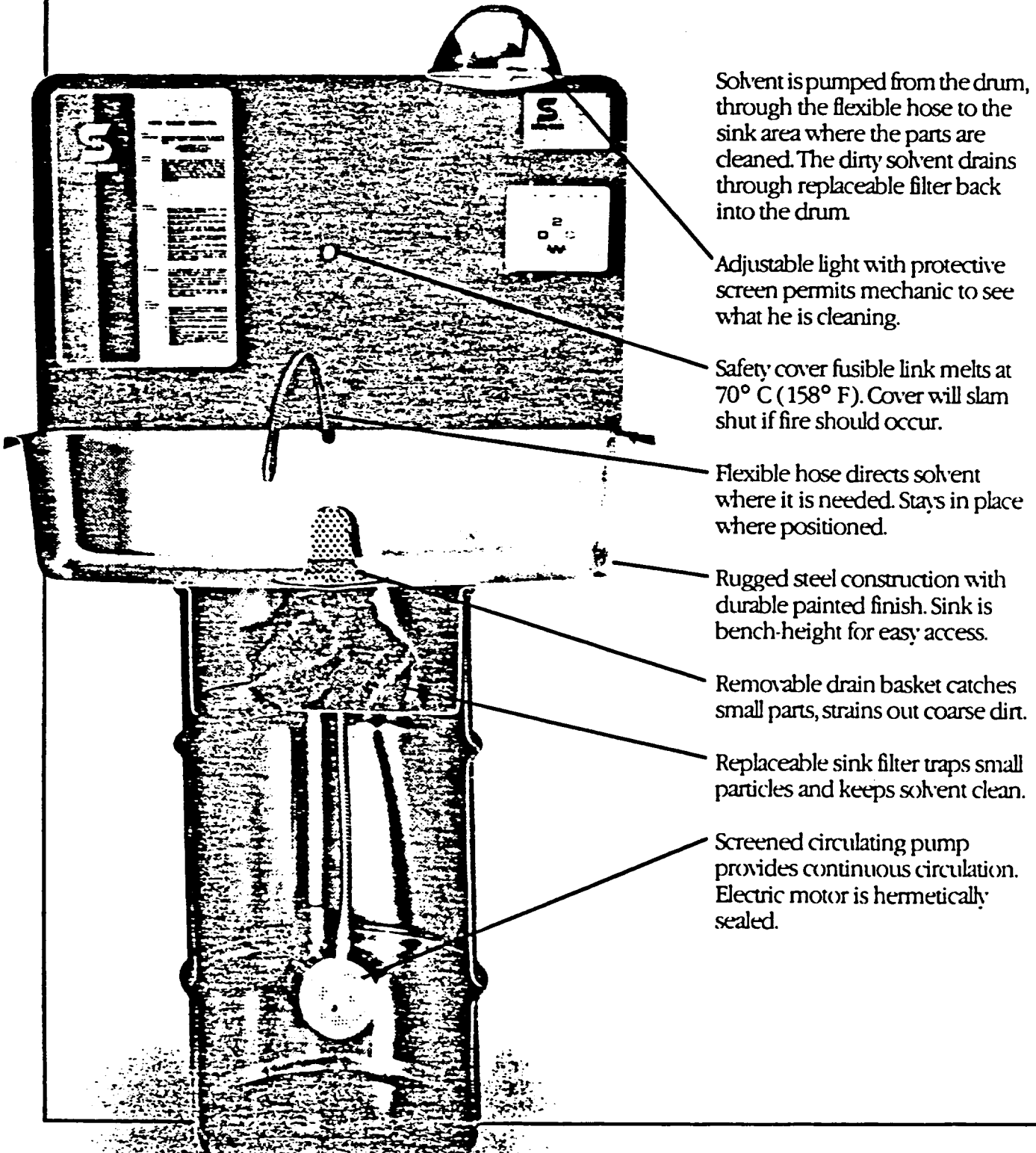
<u>TITLE</u>	<u>DIRECTORY</u>
<u>Purchasing</u> Cahners Publishing Company 221 Columbus Avenue Boston, Massachusetts 02116	
<u>Purchasing World</u> Technical Publishing Company 1301 S. Grove Avenue Barrington, Illinois 60010	
<u>Plant Engineers Digest</u> Engineer's Digest (Formerly Plant & Industrial Engineer's Digest) Walker-Davis Publications, Inc. 2500 Office Center Willow Grove, Pennsylvania 19090	
<u>Electronics Engineers Master Catalog</u> EEM-Electronics Engineers Master Hearst Business Communications, Inc. 645 Stewart Ave. Garden City, New York 11530	

APPENDIX P

SAFETY-KLEEN PARTS CLEANERS

SAFETY-KLEEN PARTS CLEANERS

Safety-Kleen's Parts-Washers make cleaning dirty, grimy parts easier and more efficient.



Solvent is pumped from the drum, through the flexible hose to the sink area where the parts are cleaned. The dirty solvent drains through replaceable filter back into the drum.

Adjustable light with protective screen permits mechanic to see what he is cleaning.

Safety cover fusible link melts at 70° C (158° F). Cover will slam shut if fire should occur.

Flexible hose directs solvent where it is needed. Stays in place where positioned.

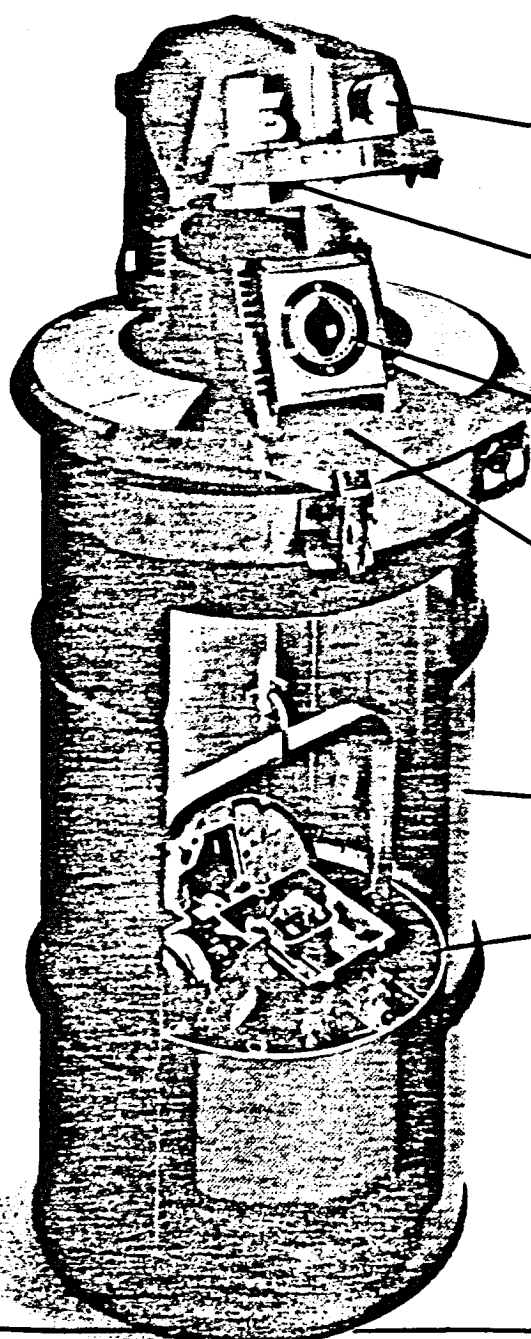
Rugged steel construction with durable painted finish. Sink is bench-height for easy access.

Removable drain basket catches small parts, strains out coarse dirt.

Replaceable sink filter traps small particles and keeps solvent clean.

Screened circulating pump provides continuous circulation. Electric motor is hermetically sealed.

Use Safety-Kleen's Immersion Cleaner for removing gum and varnish from carburetors and other hard-to-clean parts.



Parts are disassembled, loaded into the basket. Shut the cover, set the timer, lower the basket into the solvent and turn on the power. The machine does the rest.

On/off control knob for air powered agitation model. Manual model available.

Air powered assembly agitates parts in solvent bath automatically to clean parts, inside and out.

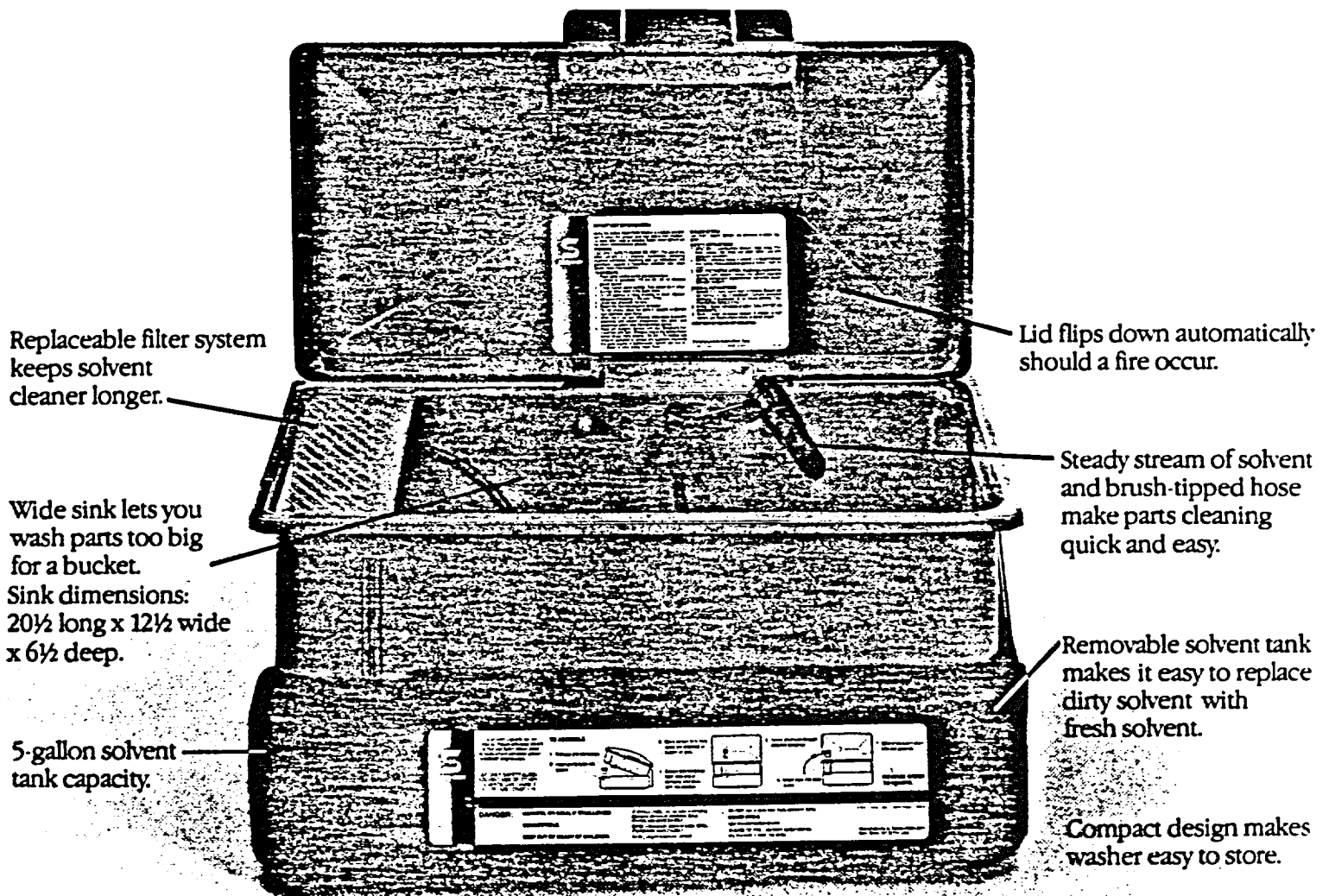
Quick-set timer allows agitation interval to be pre-set. Timer bell signals the end of the agitation cycle.

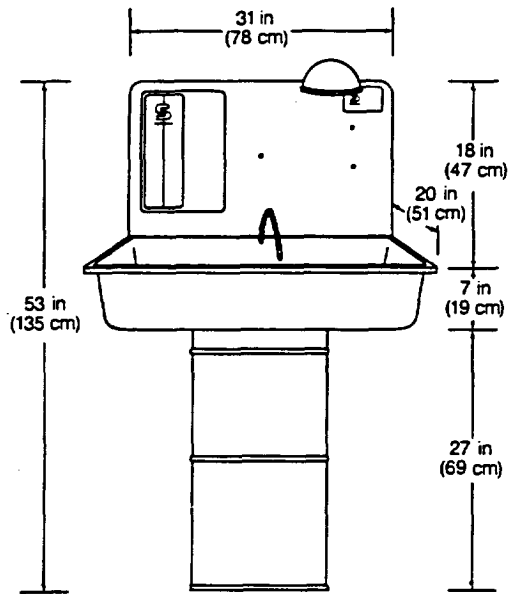
Molded polypropylene cover provides tight drum seal to reduce solvent evaporation and odor into the work area.

Durable painted steel drum provides stability.

Basket locks in Up position for easy loading and unloading. This allows solvent to drain off parts. Basket is removable for water rinse of parts.

Safety-Kleen goes portable.





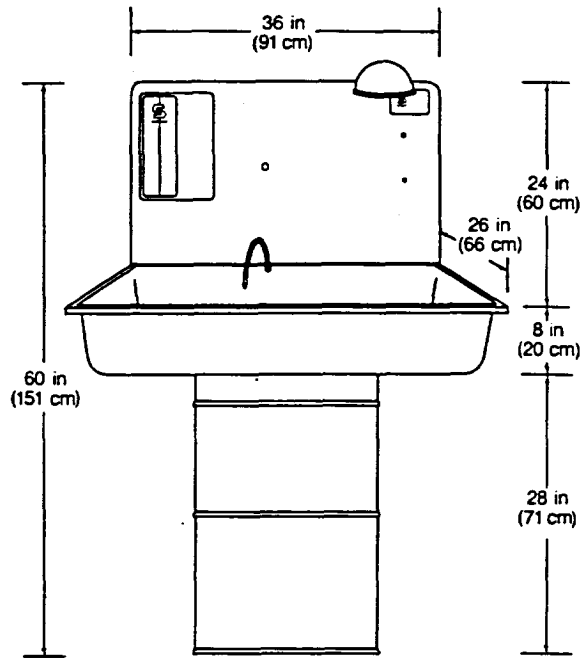
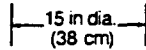
Parts Washer:

Model 16

Sink Dimensions: 31 in. (78 cm), 20 in. (51 cm), 7 in. (19 cm)

Solvent Capacity: 10 U.S. gallons (37 liters)

Power: 120 volts, 60 hz.



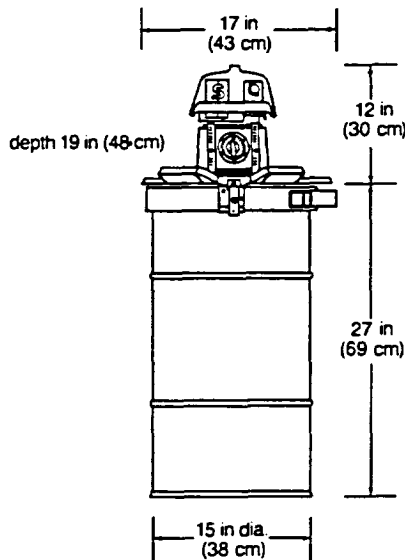
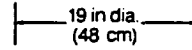
Parts Washer:

Model 30

Sink Dimensions: 36 in. (91 cm), 26 in. (66 cm), 8 in. (20 cm)

Solvent Capacity: 20 U.S. gallons (72 liters)

Power: 120 volts, 60 hz.



Immersion Cleaner:

Model 11—Air Powered

Basket: 6 in. (15 cm), 11 in. (29 cm)

Solvent Capacity: 6 U.S. gallons (23 liters)

Power: Air, minimum 80 PSI

APPENDIX Q

SELECTED SYSTEM DESIGN ENGINEERING COMPANIES

APPENDIX Q

SELECTED SYSTEM DESIGN ENGINEERING COMPANIES

Industrial Systems
1411 Woodward
Bloomfield Hills, Michigan 48103
(313) 338-7230

ADS Machinery Corp.
1201-T Vine, N.E.
Warren, Ohio 44482
(216) 399-3601

George Cook Company
10 South 11th Avenue
Evansville, Indiana 47744
(812) 426-9600

Production Machinery
8500-T Station Street
Mentor, Ohio 44060
(216) 255-3437

Stamco Division of
Monarch Machine Tool Co.
Box 108
New Bremen, Ohio 45869
(419) 629-2061

Electric Furnace Company
154 West Wilson Street
Salem, Ohio 44460
(216) 332-4661

APPENDIX R

GOVERNMENT OFFICES OF EPA AND OSHA

APPENDIX R
GOVERNMENT OFFICES
ENVIRONMENTAL PROTECTION AGENCY

Indiana

Air Pollution Control Division
Environmental Protection Agency
P.O. Box 1964
Indianapolis, Indiana 46206
Contact: Ed Stresino
(317) 633-0600

Michigan

Air Quality Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909
Contact: Asad Khan, Environmental Engineer
(517) 322-1333

Ohio

Ohio EPA
Division of Air Pollution Control
361 East Broadstreet
P.O. Box 1049
Columbus, Ohio 43266-0558
Contact: Bell Juris
(614) 466-6116

New York

U.S. EPA
Air Compliance Branch
26 Federal Plaza
New York, New York 10278
Contact: Frank Giaccone
(212) 265-2515

Pennsylvania

Bureau of Air Quality Control
Pennsylvania Department of Environmental Resources
P.O. Box 2063
Harrisburg, Pennsylvania 17120
Contact: James K. Hamoright, Director
(717) 787-4310

GOVERNMENT OFFICES
DEPARTMENT OF LABOR - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION

Indiana

Indiana Division of Labor, Industrial Hygiene - I.O.S.H.A.
404 North Capitol, Suite 218
Indianapolis, Indiana 46204
Contact: Mr. Charles Shields, Industrial Hygienist
(317) 269-7290

Michigan

Michigan Department of Public Health, M.I.O.S.H.A.
Industrial Hygiene Department
3500 North Logan Street
P.O. Box 30035
Lansing, Michigan 48909
Contacts: William Cleary, Acting Chief
James Butt, Industrial Hygienist, Special Programs
(517) 373-1410

Ohio

U.S. Department of Labor - O.S.H.A.
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