

Sundaram-Clayton Limited



43rd Annual Report 2005

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Sundaram-Clayton Limited**Board of Directors**

SURESH KRISHNA
Chairman

venu srinivasan
Managing Director

gopal srinivasan
Joint Managing Director

K MAHESH

T K BALAJI

Dr CHRISTIAN WIEHEN

MICHAEL CAPPARIS

NIKHIL MADHUKAR VARTY

LEON LIU

D E UDWADIA

D D UDESHI
Alternate to Leon Liu

RYNA KARANI
Alternate to Nikhil Madhukar Varty

J JAYARAMAN
Alternate to Dr Christian Wiehen

Executive Director

H LAKSHMANAN

Audit Committee

T K BALAJI (*Chairman*)

D E UDWADIA

J JAYARAMAN

Investors' Grievance Committee

SURESH KRISHNA (*Chairman*)

venu srinivasan

T K BALAJI

K MAHESH

Bankers

STATE BANK OF INDIA
Corporate Accounts Group Branch
Greams Dugar
Greams Road
Chennai 600 006

STATE BANK OF MYSORE
Whites Road Branch
Chennai 600 014

Auditors

SUNDARAM & SRINIVASAN
Chartered Accountants
23 Sir C P Ramaswamy Road
Alwarpet, Chennai 600 018.

Listing of shares with :

Madras Stock Exchange Ltd., Chennai.
The National Stock Exchange of India
Ltd., Mumbai.
The Stock Exchange, Mumbai.

Registered Office

"Jayalakshmi Estates"
24 (Old No.8) Haddows Road
Chennai 600 006

Factories

Padi, Chennai 600 050
Ambattur, Chennai 600 058
Belagondapalli, Hosur - 635 114

President - Automotive Products

C NARASIMHAN

President - Die Casting

N RAGHUNATHAN

President - Brakes

C N PRASAD

Senior Vice President - Finance

V N VENKATANATHAN

R MURALI

Secretary

P SRINIVASAN



Sundaram-Clayton Limited

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Sundaram-Clayton Limited



FINANCIAL HIGHLIGHTS INCLUDING SELECTED INDICATORS AND RATIOS

	Rupees in lakhs									
Year ended	1996	1997	1998*	1999	2000	2001	2002	2003	2004	2005
Profit and Loss Account										
Sales	17484	21066	13000	16000	23183	24061	24682	29912	41735	53630
Other income	575	942	937	1318	1456	1463	1825	2416	2843	3253
Total income	18059	22008	13937	17318	24639	25524	26507	32328	44578	56883
Gross profit before interest, depreciation & tax (EBITDA)	3056	4126	1708	2624	3893	3490	4152	5905	8213	10159
Depreciation	301	587	410	577	799	948	1086	1202	1528	2142
Profit before interest & tax	2755	3539	1298	2047	3094	2542	3066	4703	6685	8017
Interest	97	222	35	(61)	60	153	129	(126)	49	384
Profit before taxation	2658	3317	1263	2108	3034	2389	2937	4829	6635	7633
Profit after taxation	1570	1950	694	1870	2268	1774	2185	3605	4601	5341
Balance Sheet										
Net fixed assets	3388	4940	5266	6492	8507	9618	9961	12482	18376	27513
Investments	4442	4353	4839	4352	4301	4301	4831	4318	5508	5709
Net current assets	3835	2845	2195	3036	4468	4621	2453	2815	2335	3036
Total	11665	12138	12300	13880	17276	18540	17245	19615	26219	36258
Share capital	948	1897	1897	1897	1897	1897	1897	1897	1897	1897
Reserves & surplus	8764	9202	9480	10718	12249	13397	13545	15820	18708	22103
Net worth	9712	11099	11377	12615	14146	15294	15442	17717	20605	24000
Loan funds	1953	1039	923	1265	3130	3246	962	890	4481	10918
Deferred taxation (net)							841	1008	1133	1340
Total	11665	12138	12300	13880	17276	18540	17245	19615	26219	36258
EPS (Rs) @**	8.28	10.28	3.66	9.86	11.95	9.36	11.52	19.00	24.25	28.16
DPS (Rs) @	2.00	2.70	2.00	3.00	3.50	3.00	6.00	6.50	8.00	9.00
Book value per share (Rs) @	51.20	58.52	59.98	66.51	74.59	80.63	81.41	93.40	108.63	126.53
Return on capital employed (ROCE) %	25.5	29.7	12.7 #	15.6	19.9	14.2	17.1	25.5	29.2	25.7
Return on net worth (RONW) %	17.2	18.7	7.3 #	15.6	16.9	12.1	14.2	21.7	24.0	23.9
Fixed assets turnover (No. of times)	6.2	5.1	3.0 #	2.7	3.1	2.7	2.5	2.7	2.7	2.3
Working capital turnover (No. of times)	4.9	6.3	6.2 #	6.1	6.2	5.3	7.0	11.4	16.2	20.0
EBITDA as % of sales	17.5	19.6	13.1	16.4	16.8	14.5	16.8	19.7	19.7	18.9
EBITDA as % of total income	16.9	18.7	12.3	15.2	15.8	13.7	15.7	18.3	18.4	17.9
Net profit as % of total Income	8.7	8.9	5.0	10.8	9.2	7.0	8.2	11.2	10.3	9.4

@ adjusted for bonus issue.

figures are annualised.

ROCE is profit before interest and taxation divided by average networth plus loan funds.

RONW is profit after tax divided by average networth.

Fixed assets turnover is sales divided by average net fixed assets as at the end of the year.

Working capital turnover is sales divided by average net current assets as at the end of the year.

* Figures for ten months ended 31st March 1998.

** EPS for the year 1996 calculated after adjusting subsequent bonus issue as per AS 20



Sundaram-Clayton Limited

Notice to the Shareholders

NOTICE is hereby given that the forty third annual general meeting of the company will be held at 'The Music Academy', New No.168 (Old No.306), TTK Road, Chennai 600 014 on Thursday, the 29th September 2005 at 10.15 a.m to transact the following business:

ORDINARY BUSINESS

- To consider and if thought fit, to pass with or without modification, the following resolution as an ordinary resolution:**

RESOLVED THAT the audited balance sheet as at 31st March 2005 and the profit and loss account of the company for the year ended on that date, together with the directors' report and the auditors' report thereon as presented to the meeting be and the same are hereby approved and adopted.

- To consider and if thought fit, to pass with or without modification, the following resolution as an ordinary resolution:**

RESOLVED THAT the first interim dividend of Rs.5/- per share declared by the board of directors of the company on 27th October 2004, and the second interim dividend of Rs.4/- per share declared by the board of directors of the company on 23rd June 2005, on 1,89,67,584 equity shares of Rs.10/- each fully paid absorbing a total sum of Rs.1707.08 lakhs in the aggregate and paid to the shareholders on 10th November 2004 and 5th July 2005, respectively, be and are hereby approved as final dividend for the year ended 31st March 2005.

- To consider and if thought fit, to pass with or without modification, the following resolution as an ordinary resolution:**

RESOLVED THAT Mr T K Balaji, director who retires by rotation and being eligible for re-appointment be and is hereby re-appointed as a director of the company.

- To consider and if thought fit, to pass with or without modification, the following resolution as an ordinary resolution:**

RESOLVED THAT Mr K Mahesh, director who retires by rotation and being eligible for re-appointment be and is hereby re-appointed as a director of the company.

- To consider and if thought fit, to pass with or without modification, the following resolution as an ordinary resolution:**

RESOLVED THAT the retiring auditors Messrs. Sundaram & Srinivasan, Chartered Accountants, Chennai be and are hereby re-appointed as auditors of the company to hold office from the conclusion of this annual general meeting till the conclusion of the next annual general meeting of the company on such remuneration as may be fixed in this behalf by the board of directors of the company.

SPECIAL BUSINESS

- To consider and if thought fit, to pass with or without modification, the following resolution as an ordinary resolution:**

RESOLVED THAT Mr Leon Liu be and is hereby appointed as a director of the company, liable to retire by rotation.

By order of the board

Chennai
22nd August, 2005

P SRINIVASAN
Secretary

Registered office:
"Jayalakshmi Estates"
24, (Old No.8), Haddows Road
Chennai 600 006

Notes:

- A member entitled to attend and vote at the meeting is entitled to appoint one or more proxies to attend and vote instead of himself and the proxy or proxies so appointed need not be a member or members, as the case may be, of the company. The instrument appointing the proxy and the power of attorney or other authority, if any, under which it is signed or a notarially certified copy of that power or authority shall be deposited at the registered office of the company not later than 48 hours before the time fixed for holding the meeting.**
- The explanatory statement pursuant to Section 173(2) of the Companies Act, 1956 in respect of the special business as set out in the notice is annexed hereto.
- The register of members and the share transfer register will remain closed for a period of 3 days from 27th September 2005 to 29th September 2005 (both days inclusive).
- In terms of Section 205A read with Section 205C of the Companies Act, 1956, the dividends declared by the company, which remain unclaimed for a period of seven years will be transferred to the Investor Education and Protection Fund (IEPF), established by the Central Government on the due dates. The particulars of due dates for transfer of such unclaimed dividends to IEPF are furnished in the report on Corporate Governance.

Members who have not encashed their dividend warrants in respect of the above period are requested to make their claim by surrendering the unencashed warrants immediately to the company.
- Members holding shares in physical form, in their own interest, are requested to dematerialise the shares to avail the benefits of electronic holding / trading.
- Members are requested to notify to the company immediately any change in their address. Members holding shares in depository are requested to advise change of address to their depository participants.

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7. As a measure of economy, copies of the annual report will not be distributed at the annual general meeting. Members are, therefore, requested to bring their copies of the annual report to the meeting.
8. Members are requested to affix their signature at the space provided on the attendance slip annexed to proxy form and hand over the slip at the entrance of the meeting hall.
9. In terms of clause 49 (VI)(A) of the listing agreement with the stock exchanges, a brief resume of directors who are proposed to be appointed / re-appointed in this meeting is given below:

I. Mr T K Balaji

Born on 12th July 1948, Mr T K Balaji is a Bachelor of Engineering, securing first rank from Madras University and is also a Master of Business Administration from IIM Ahmedabad with a Gold medal for outstanding scholastic performance.

Mr T K Balaji is a member of Development Council for Automobiles & Allied Industries, Government of India. He is the past president of Automotive Component Manufacturers Association of India (ACMA) and was conferred a Special Award by the FIE Foundation of Maharashtra in March 1995 in recognition of his contribution to the development of automotive component industry. Currently he is a Member of CII National Council.

He is the Chairman of the Audit Committee and a member of Investors' Grievance Committee of the Company. Details of his other directorships and membership/chairmanship of committees are given below:

Sl. No.	Name of the company	Position held	Committee membership/ chairmanship
1.	TVS Motor Company Limited	Director	Member-Audit Committee
2.	India Nippon Electricals Limited	Chairman	Chairman - Investors' Grievance Committee
3.	Lucas TVS Limited	Managing Director	–
4.	Delphi-TVS Diesel Systems Limited	Managing Director	–
5.	Lucas Indian Service Limited	Director	–
6.	TVS Electronics Limited	Director	Member - Investors' Grievance Committee
7.	T V Sundram Iyengar & Sons Limited	Director	–
8.	Titan Industries Limited	Director	Member - Audit Committee Chairman - Remuneration Committee
9.	TVS Lean Logistics Limited	Director	–

Sl. No.	Name of the company	Position held	Committee membership/ chairmanship
10.	Apollo Hospitals Enterprise Limited	Director	–
11.	Pricol Limited	Director	–
12.	India Japan Lighting Private Limited	Chairman	–
13.	Harita Electronics Private Limited	Director	–
14.	Hasstham Swasthi Private Limited	Director	–
15.	Punarvasu Swasthi Private Limited	Director	–

II. Mr K Mahesh

Born on 11th October 1943, Mr K Mahesh is a B.Tech graduate in metallurgy. He is the past president of Automotive Component Manufacturers Association of India and also the past chairman of ACMA Centre for Technology. He is the founder trustee of TSK Memorial Trust. He was the member of the National Council of Confederation of Indian Industry.

He is serving as director of the company since 28th July 1975.

He is a Member of the Investors' Grievance Committee of the Company. Details of his other directorships and membership/chairmanship of committees are given below:

Sl. No.	Name of the company	Position held	Committee membership/ chairmanship
1.	Southern Roadways Limited	Director	–
2.	T V Sundram Iyengar & Sons Limited	Wholetime Director	–
3.	Sundaram Brake Linings Limited	Chairman and Managing Director	Member – Investors' Grievance Committee
4.	Sundaram Industries Limited	Director	–
5.	Sundaram Textiles Limited	Director	–
6.	TVS Global Trade Private Limited	Director	–

III. Mr Leon Liu

Born on 13th November 1961, Mr Leon Liu is WABCO Vehicle Control Systems' regional president for the Asia Pacific (APAC) business unit. Mr. Leon Liu is responsible for WABCO's business objectives in Asia Pacific and he leads the team that drives regional business, integrates local market needs and requirements and implements strategies aligned with product and aftermarket business units.



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Mr Leon Liu brings nearly 15 years of U.S and Asia Pacific Automotive Engineering and Tier 1 Supplier experience to WABCO. His career began with major Japanese Tier 1 suppliers, then progressed to Ford Motor Company and Visteon Corporation where he held management positions of increasing responsibility in product development, product launches, program management, corporate strategy and business development. Mr Leon Liu joined WABCO after serving as Visteon's director of business planning and strategy for the company's Asia operations.

A native of China, Mr Leon Liu earned a Bachelor's degree in Engineering from China East University, Shanghai, China; a Master's degree in Business administration in general management from Michigan State University, East Lansing, Mich., U.S and a Ph.D in materials science and engineering from the Tokyo Institute of Technology in Japan. He is fluent in Japanese, English

and Chinese. He was co-opted as a director of the company effective 23rd June 2005.

He is not a member of any committee of directors. Details of his other directorships are given below.

Sl. No.	Directorships in other companies	Position held
1.	WABCO Korea Limited	Director
2.	Shandong Weiming Automotive Product Co Ltd	Chairman/Director
3.	WABCO China Co Limited	Chairman/Director
4.	WABCO Japan Inc.	Director
5.	WABCO Shanghai Co. Ltd	Chairman/Director

Annexure to Notice

Explanatory statement pursuant to Section 173 (2) of the Companies Act, 1956.

The following explanatory statement sets out all material facts relating to the special business mentioned in the accompanying notice dated 22nd August, 2005 and shall be taken as forming part of the notice.

Item No. 6

Mr Leon Liu was appointed as a director of the company with effect from 23rd June 2005 in the casual vacancy caused by the resignation of Mr Guenter Seegers. In terms of section 262 of the Companies Act 1956, Mr Leon Liu will hold office only upto the date of this annual general meeting, when Mr Guenter Seegers would have retired in the normal course.

Notice has been received from a member of the company under section 257 of the Companies Act, 1956 alongwith a deposit of Rs.500/- signifying his

intention to propose the candidature of Mr Leon Liu for the office of director and to move the resolution as set out in item no. 6 of this notice.

The directors recommend the resolution for approval of the shareholders.

Mr Leon Liu is deemed to be concerned or interested in the resolution.

By order of the board

Chennai
22nd August 2005

P SRINIVASAN
Secretary

Registered office:
"Jayalakshmi Estates"
24, (Old No.8), Haddows Road
Chennai 600 006

Sundaram-Clayton Limited



Directors' report to the shareholders

The directors herewith present the forty third annual report and the audited accounts for the year ended 31st March 2005.

2. FINANCIAL HIGHLIGHTS

Details	Rs. in lakhs	
	Year ended 31.03.2005	Year ended 31.03.2004
Sales and other income	56882.51	44578.00
Gross profit before interest and depreciation	10159.18	8213.30
Interest -Net	383.77	49.27
Depreciation	2142.06	1528.27
Profit before tax	7633.35	6635.76
Provision for taxation (including deferred tax)	2307.35	1948.27
Profit after tax	5326.00	4687.49
Tax relating to earlier years	14.72	(86.99)
	5340.72	4600.50
Surplus brought forward from previous year	1745.50	1256.85
Total	7086.22	5857.35
Appropriations:		
First Interim dividend paid	948.38	663.88
Second Interim dividend	758.70	853.55
Tax on dividend	232.54	194.42
Transfer to general reserve	3000.00	2400.00
Surplus in profit & loss account	2146.60	1745.50
	7086.22	5857.35

3. DIVIDEND

During the year, the board of directors declared two interim dividends of Rs.5/- per share on 27th October 2004 and Rs.4/- per share on 23rd June 2005, thus totaling Rs.9/- per share (i.e 90%) absorbing in the aggregate a sum of Rs. 1707.08 lakhs. The directors have recommended no further dividend for the year ended 31st March 2005.

4. PERFORMANCE

As indicated in the last year, the company successfully commissioned its new state of the art manufacturing facility for production of air brake systems for commercial vehicles at Ambattur, Chennai, Tamilnadu. The entire existing facilities for manufacturing air brake systems have been shifted to this new location.

The new facility has been built at a cost of Rs.58 crores with an objective to cater to emerging demand. This facility combines the strengths of the two JV partners – the manufacturing capabilities of TVS and the product technology of WABCO – to offer the world class braking products at affordable prices to the customers.

During the year under review, the commercial vehicle industry continued the positive growth recording an increase of 27% in production.

The brakes division has achieved a turnover of Rs. 363 Crores as against Rs. 303 Crores recording a growth of 20% over the previous year.

The die casting division achieved a sales tonnage of 13,795 during the year as against 11,211 tonnes in the preceding year registering a growth of 23%. In value terms, the overall sales grew by 46% from Rs. 150 crores in the previous year to Rs. 218.50 crores. Exports increased substantially from Rs. 19 crores to Rs. 53 crores, which was achieved by supplying new products to Holset, Fleet Guard etc and other customers in US, Europe and Japan.

5. CAPITAL EXPENDITURE

During the financial year 2005-2006, the company has proposed to make additional investments of Rs.43 crores in brakes business to meet capacity expansion and new products development and Rs.93 crores in die casting business. This will be met partly by internal accruals and partly by low cost rupee loans and foreign currency loans.

6. SUBSIDIARIES

During the year under review, a company by name Auto (India) Engineering Limited (AIEL) was incorporated as a wholly owned subsidiary of the company on 18th November 2004 with an authorized capital of Rs. 5 lakhs.

The entire paid up capital of Rs.5 lakhs in AIEL is held by the company and its nominees. AIEL is yet to commence its commercial activities and had closed its accounts for the first time for the period 18th November 2004 to 31st March 2005.

As on the date of this report, the following are the subsidiaries of the company:

Name of Company	Subsidiary of M/s.
Harita Stocks Limited	Sundaram-Clayton Limited
Anusha Investments Limited	Sundaram-Clayton Limited
Auto (India) Engineering Limited	Sundaram-Clayton Limited
TVS Investments Limited	Sundaram-Clayton Limited
TVS Motor Company Limited	Sundaram-Clayton Limited
Sundaram Auto Components Ltd	TVS Motor Company Limited
TVS Electronics Limited	TVS Investments Limited
TVS Finance and Services Limited	TVS Investments Limited

In terms of Accounting Standard 21 prescribed by the Institute of Chartered Accountants of India, the accounts of the subsidiaries are consolidated with the accounts of the company and the consolidated accounts form part of this report.

An application in terms of Section 212(8) of the Companies Act, 1956 was made to the Central Government, seeking exemption from attaching the balance sheet and profit and loss account of the subsidiaries alongwith the report of the board of directors and that of the auditors' thereon, with the company's accounts. The Central Government vide its letter No.47/237/2005 dated 8th August 2005 granted exemption from attaching the audited accounts and reports of the subsidiaries with that of the company for the year ended 31st March 2005.



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As directed by the Central Government, the company is presenting the consolidated financial statement of each of its subsidiary duly audited by the statutory auditors. The annual accounts of the subsidiaries and the consolidated financial information will be made available, at any point of time, to the investors of both the holding and the subsidiary companies upon seeking such information from the company. The audited accounts of the subsidiaries will be kept for inspection by the members at the registered office of the company and the subsidiaries during the business hours on any working day.

7. DIRECTORS

Mr T K Balaji and Mr K Mahesh, directors, will be retiring at this annual general meeting and are eligible for re-appointment.

Mr Guenter Seegers had resigned from the board with effect from 23rd June 2005. Mr Leon Liu was appointed as a director in the casual vacancy caused by the resignation of Mr Guenter Seegers as a director on 23rd June 2005. Ms Ziyen Moledina also ceased to be an alternate director effective 22nd June 2005. The board of directors wish to place on record their appreciation of the services rendered by Mr Guenter Seegers and Ms Ziyen Moledina during their tenure as directors of the company.

Mr Leon Liu, who was appointed as a director on 23rd June 2005 in the casual vacancy caused by the resignation of Mr Guenter Seegers, will vacate his office in terms of section 262 of the Companies Act, 1956 at the ensuing annual general meeting of the company and is eligible for re-appointment. Notice has been received from a member of the company signifying his intention to propose the appointment of Mr Leon Liu in terms of section 257 of the Companies Act, 1956 along with the requisite deposit of Rs.500/-.

8. AUDITORS

M/s Sundaram & Srinivasan, Chartered Accountants, Chennai retire at the ensuing annual general meeting and are eligible for re-appointment.

9. STATUTORY STATEMENTS

As per the requirements of Section 217(1)(e) of the Companies Act, 1956, read with the Companies (Disclosure of Particulars in the Report of Board of

Directors) Rules, 1988, the information regarding conservation of energy, technology absorption and foreign exchange earnings and outgo are given in annexure I to this report.

The particulars required pursuant to Section 217(2A) of the Companies Act, 1956 read with the Companies (Particulars of Employees) Rules, 1975 as amended by Companies (Particulars of Employees) Rules, 2002 are given in annexure II to this report.

As required under Section 217(2AA) of the Companies Act, 1956, the directors' responsibility statement is enclosed in annexure III to this report.

10. CORPORATE GOVERNANCE

The company has complied with the provisions of Listing Agreement concerning corporate governance and a report to this effect is enclosed as required by Clause 49 of the listing agreement with the stock exchanges. A certificate issued by the auditors of the company regarding compliance of conditions of corporate governance, is also annexed to the said report.

A management discussion and analysis report as required by listing agreement is also enclosed which forms part of this report.

11. ACKNOWLEDGEMENT

The directors gratefully acknowledge the continued support and co-operation received from M/s. T V Sundram Iyengar and Sons Limited, Madurai, and American Standard Inc., USA.

The directors thank the vehicle manufacturers, distributors, vendors and bankers for their continued support and assistance.

The directors wish to place on record their appreciation of the excellent work done by all the employees of the company in yet another year. The directors specially thank the shareholders for their continued faith in the company.

For and on behalf of the board

Chennai
22nd August 2005

SURESH KRISHNA
Chairman

Sundaram-Clayton Limited



Annexure I to Directors' report

Information as required under Section 217(1) (e) of the Companies Act, 1956

A. CONSERVATION OF ENERGY

1. Measures taken:

- (i) Reduction of air leaks in compressed airlines in certain production units;
- (ii) Automatic power factor correction through 12 stage capacitor banks;
- (iii) Progressive introduction of energy efficient motors in existing SPMs and other machines;
- (iv) Implementation of on load tap changer in all transformers;
- (v) Implementation of variable speed drive in compressor and various other machines;
- (vi) Introduction of Variable Frequency Drive (VFD) in centralized exhaust;
- (vii) Introduction of various other energy saving devices.

The above measures have resulted in an annual saving of about Rs.25.92 lakhs.

2. Proposed measures:

- (i) Provision of localized lighting in machine shop to reduce MH lamp power;
- (ii) Clock control for starting and stopping of compressor to eliminate idle time running;
- (iii) Provision of Variable Frequency Drive for 600 CFM Compressor and PDC machine;
- (iv) Improvement of compressed air system efficiency;
- (v) Automatic switching off of lighting and air conditioning in work place during break time;
- (vi) Automation of internal road lighting through timer;
- (vii) Optimizing air conditioning system;
- (viii) Implementation of turbo ventilation for exhaust;
- (ix) Introduction of several other equipments for energy savings.

This will result in a saving of about Rs.77.93 lakhs per annum.

- (d) Push to connect fittings has been designed and developed. This will improve productivity of the customer assembly line and enhance performance of the brake system by eliminating leakages.

(2) Benefits derived as a result of R & D:

- (a) More robust and leak-free brake system;
- (b) More environment friendly vehicles;
- (c) Fuel saving;
- (d) Longer product life;
- (e) Best braking system;
- (f) The innovative ideas generated, during the year, have enabled the company in filing applications for four patents under the Patents Act, 1970.

(3) Future plan of action:

- (a) Design, development and proving of automatic slack adjuster;
- (b) E6 dual brake valve will be developed for North American OEM's;
- (c) Products will be upgraded for meeting extended temperature range to meet international benchmarks;
- (d) Introduction of electronic braking systems in commercial vehicles;
- (e) The extensive road development projects will lead to larger and faster vehicles for carrying goods and passengers in India. The company's R&D focus will be to develop reliable and cost effective products meeting international benchmarks for new generation vehicles. The products to be developed include the latest anti-lock braking system;
- (f) The R&D efforts will also be able to develop air brake system products for export markets.

(4) Expenditure in R & D:

Rs. in lakhs

Capital expenditure	41.23
Recurring expenditure (including salaries)	463.92
	505.15
Total expenditure as percentage of turnover	0.89%

B. TECHNOLOGY ABSORPTION

Research & Development (R & D)

(1) Specific areas in which R & D is carried out by the company.

Existing activities:

- (a) Environmental friendly, energy efficient and reliable 160 cm³ compressor have been designed, developed and launched;
- (b) Dual break valve with integral filter and silencer has been designed, developed and launched to prevent air leakage and save fuel;
- (c) Type 24/75 Spring brake actuator with improved performance characteristics has been developed and launched;

Technology absorption, adaptation and innovation:

(a) Efforts in brief:

1. Updation of technology development plan and product upgradation plan;
2. Continued efforts in evolving design rules from technology development projects to reduce development lead time;
3. Utilizing the services of eminent consultants to improve efficiency in product development;
4. Development of brake system engineering standards to achieve global standards of braking performance on vehicles;
5. Development of surface protection for aluminium products to meet global standards of performance.