

A collage of three Volvo vehicles. In the upper left, a silver Volvo SUV is shown from a front-three-quarter view, with its license plate 'RWX 056'. In the upper right, a red Volvo semi-truck is shown from a front-three-quarter view. In the lower left, a yellow Volvo construction vehicle, possibly a bulldozer, is shown from a side profile. A large blue rectangle with the word 'Haldex' in white is overlaid in the center.

Haldex

Innovative Vehicle Technology

Haldex is a vehicle technology company.

We offer proprietary and innovative solutions to the global vehicle industry.

We focus on products that improve

- Safety
- Environment
- Vehicle dynamics.

Customers & Products

Haldex

**Heavy
vehicles**



**Industrial
vehicles**



Engines



Cars



Brake-
systems
59%

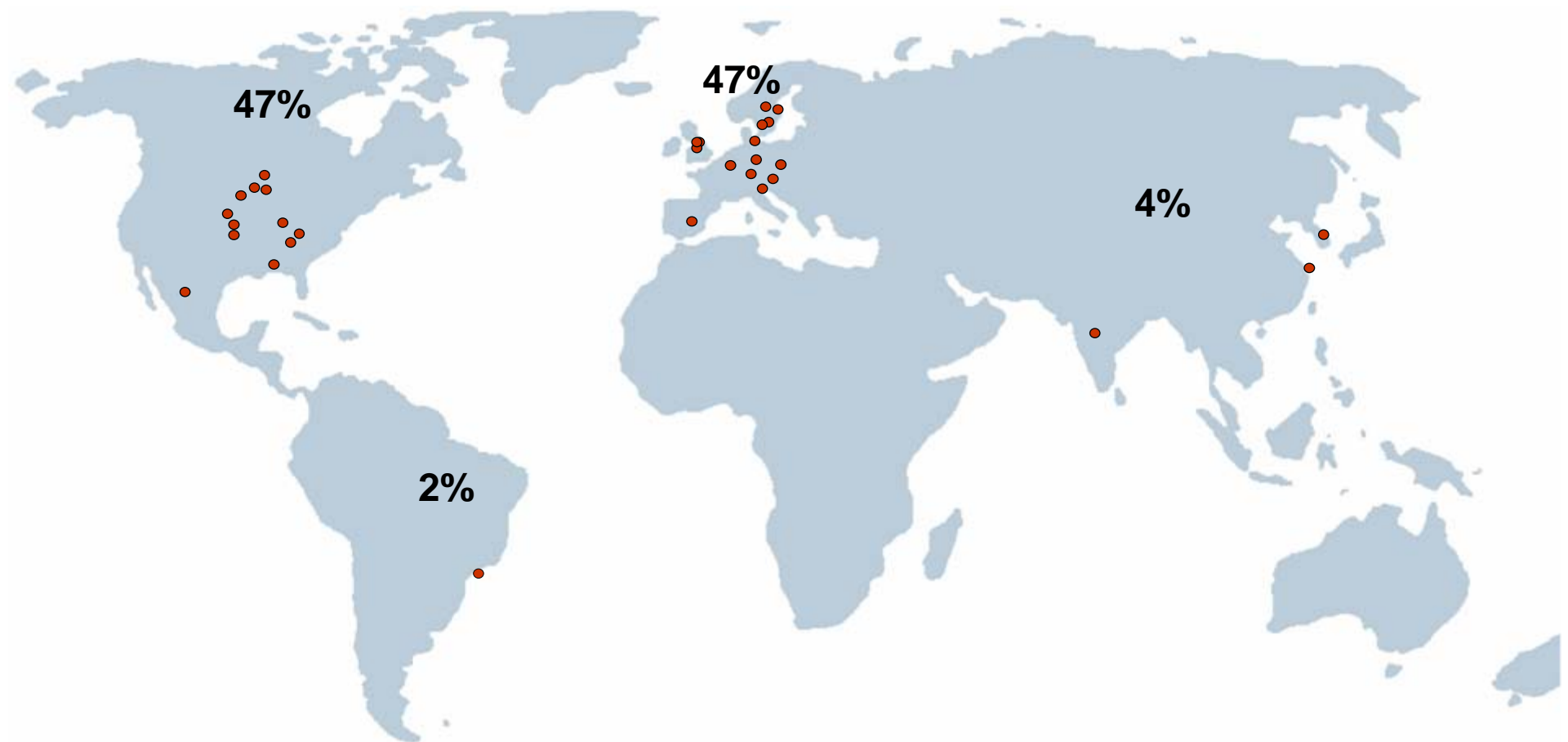
Hydraulic
systems
17%

Spring
wire
14%

AWD
systems
10%

Global presence

- Annual sales ~ 7.5 BSEK (~ \$1,000 m)
- 4,800 employees
- Production in North America, South America, Europe and Asia



Brake Systems

Haldex



Air Management



Compressor



Air dryer systems



Air cleaner

Brake Control



ABS



EBS



Valves



Brake chamber

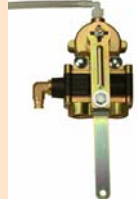
Air Suspension



Height control



Suspension control



Wheel Brake



Brake adjusters
(drum)



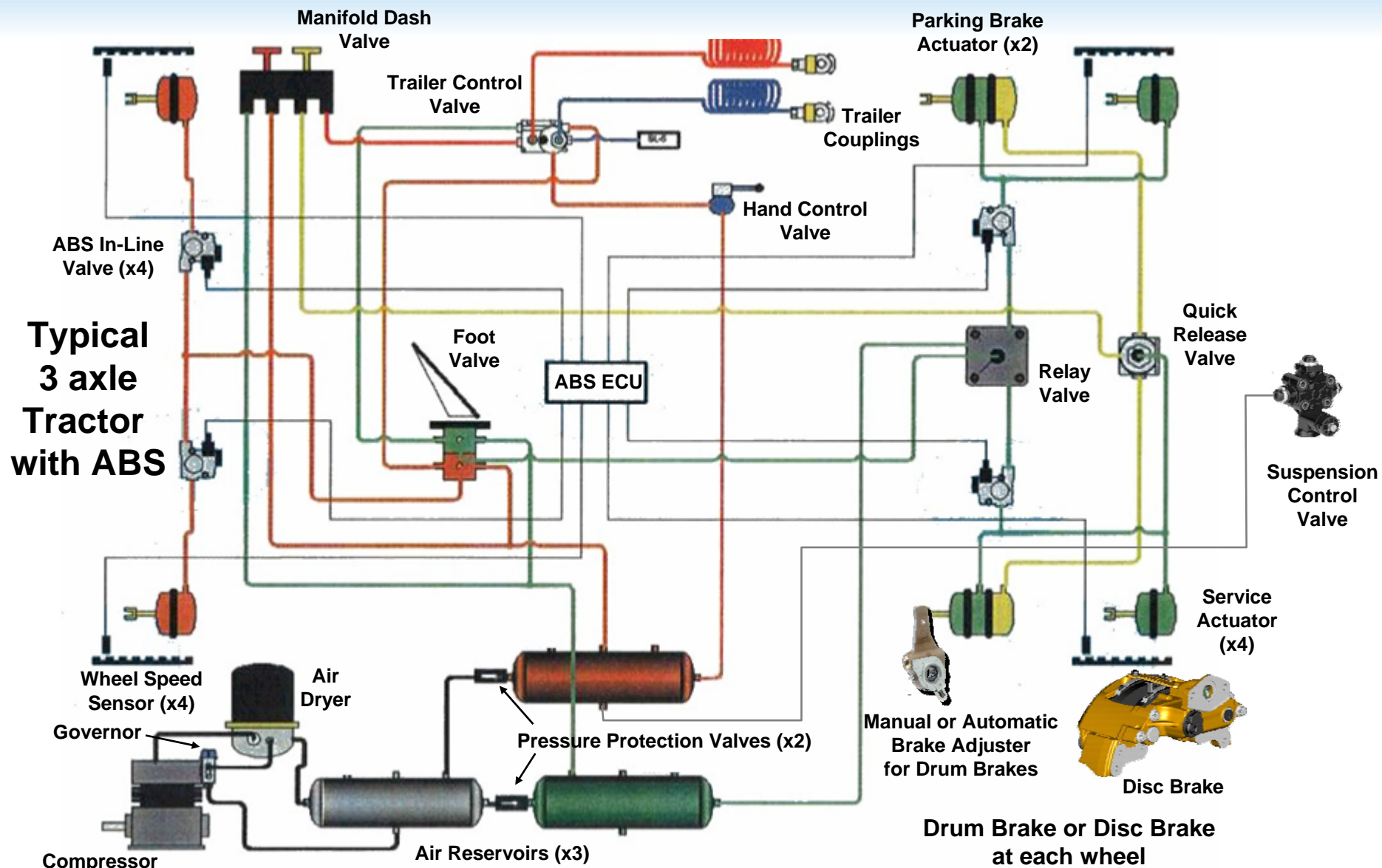
Disc brake



Brake linings

System Competence

Haldex



Power Systems

Haldex



Lift systems

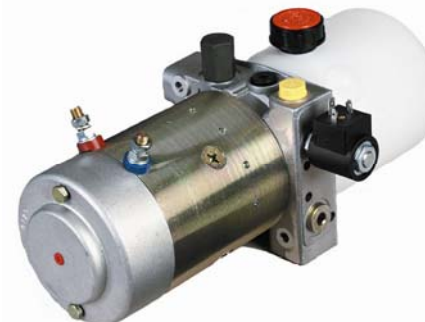
- Construction & Forklifts
- Truck tailgates & Axles
- Aerial work platforms

Other Power Systems

- Dump truck compaction
- Power steering
- Emergency brake & steer
- Commercial mowers & Ag equipment

Energy Management Systems

New technology
under development

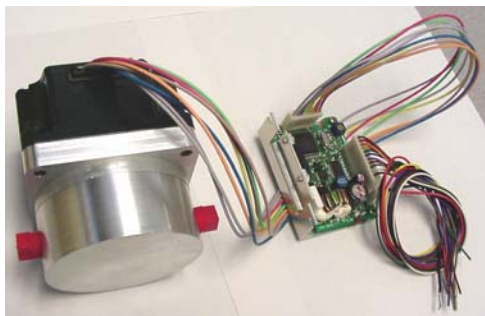


Engine Products

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- Advanced wire products
- Fuel transfer pumps
- Cooling fan drive systems
- Crank case ventilation gas cleaning – Alfdex
- Fuel saving EGR systems - Varivent



AWD Systems

Haldex

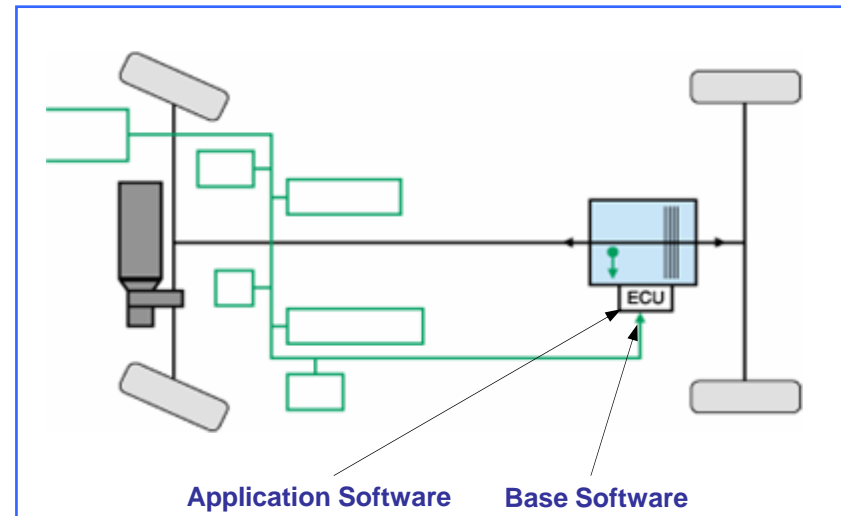


Electronically controlled system

- Automatic & extremely fast
- Improved safety & traction
- Compatible with ESP/ABS
- Optimized vehicle dynamics

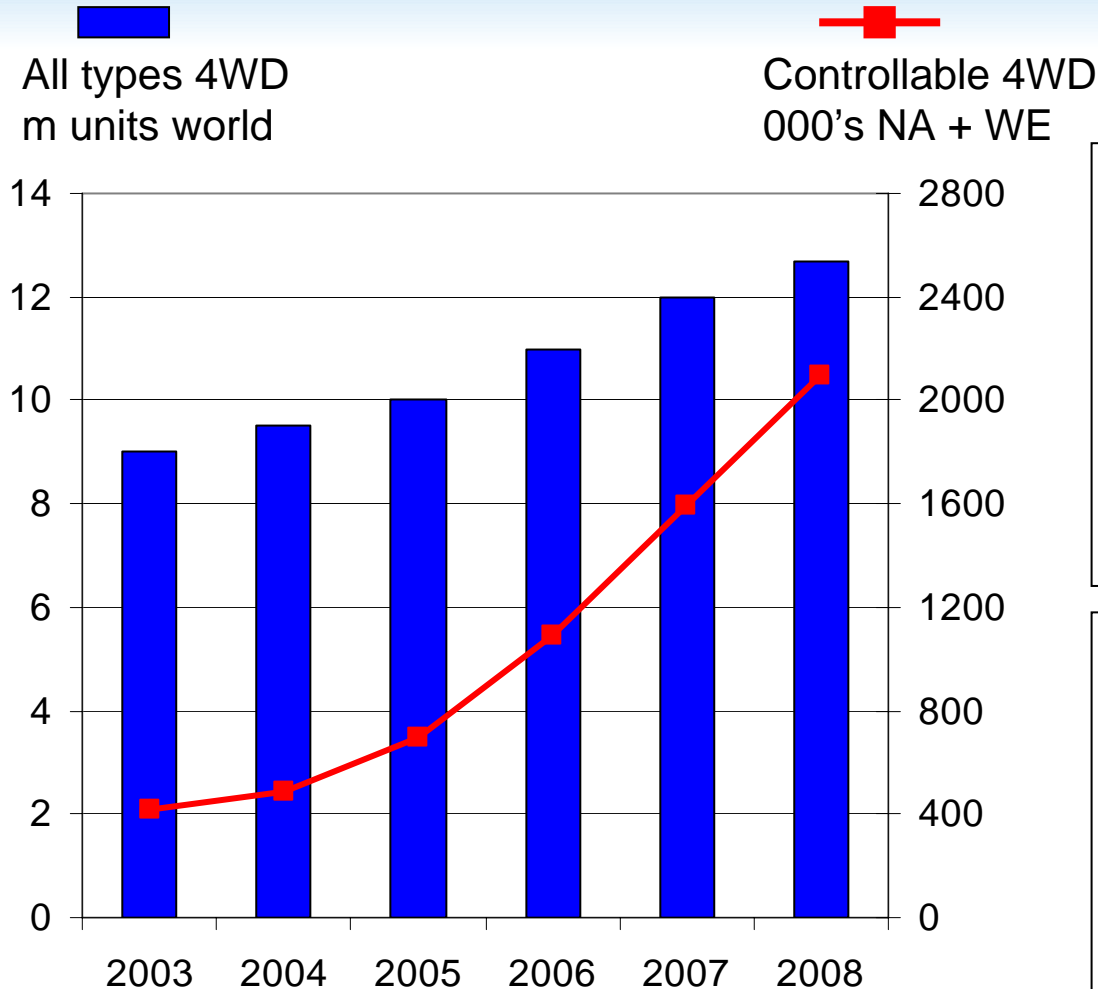


Generation III



Business Conditions - Market Upturn

Haldex



- Light vehicle growth ~ 3 %
 - 4WD penetration 18 % \Rightarrow 23 %
 - 4WD CAGR ~ 6.5 %
 - Controllable 4WD CAGR ~ 20 % in NA + EUR
-
- End of 2005 a slow down in sales of SUVs
 - Medium and long-term growth pattern looks promising, increased usage of AWD on passenger cars and increased usage of crossovers.

Global Customer Base

Haldex



Truck & Bus

DAF, Daewoo, Dong Feng, FAW, Ford, Freightliner, Hino, Hyundai, Iveco, Kenworth, Kia, Mack, MAN, Telco, Mercedes, Navistar, RVI, Volvo, Peterbilt, Scania

Axle & Trailer

BPW, Dana, Fruehauf, General Trailer, Great Dane, Kögel, ROR, SAF, SESR, SMB, Traylor, Utility, Wabash



Cars

VW (Golf, Bora, Beetle Rsi, Sharan), Audi (Audi A3/S3, Audi TT), Skoda (Octavia), Seat (Leon, Alhambra), Volvo (S60, V70, S80, XC70, XC90), Ford Mercury, Bugatti Veyron, Land Rover



Forklifts

Atlet, Toyota (BT, Raymond, Prime Mover), Jungheinrich, Linde, NACCO (Hyster, Yale), Rocla, Crown

Construction

Bobcat, Caterpillar, Dana, Dynapac, Genie, Grove, Komatsu, O&K, Vögele Weyhausen, Volvo Construction Equipment

Tailgate/Bogie

Behrens, Bär, Dautel, Interlift, Ray Smith, Volvo Scania, Sorensen, Zepro



Engines

Caterpillar, Cummins, DAF, Detroit Diesel, Mercedes, Scania, Volvo

Springs

Associated, Matthew Warren/Automatic, Meritor Suspension Systems, Muhr & Bender, Peterson, Renault, Scherdel

Competitors and Market Shares



Brake
Systems

Competitors

Arvin Meritor
Knorr Bremse
Wabco

Haldex market shares

- Overall ~ 15%
- By product 5 - 65%



AWD
Systems

Borg Warner
GKN
Magna Drive Train
Torsen
Toyoda

- All AWD types ~ 5%
- Controllable AWD ~ 35%



Power
Systems

Bosch
Eaton
Parker Hannifin
Sauer Danfoss

- Overall ~ 10%
- By product 5 – 35%



Engine wire
Products

ASW
Kiswire
Suncall
Suzuki

- Overall ~ 30%
- By product 20 – 35%

Focus on profitability



Growth

- Strengthen positions on new markets
- Product development
 - Increase product range to heavy trucks
 - New generation AWD
 - New technology for diesel engines
- Joint ventures and acquisitions

Cost improvements

- Increased production in low-cost countries
- World class production
- Reduced purchase costs

Product development

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<i>Rationalization</i> <i>Improve/maintain margins</i>	<i>Upgrading</i> <i>Increased business</i>	<i>New product</i> <i>New/increased business</i>
ABS/EBS Trailers		ABS Trucks
	ModulX disc brakes	Product line (P) Actuators
Product line (DF) Actuators	XWD and PreX	EBS Trailers, NA
	ModulAir Air dryer products	W100, 1200, Låg rpm pump
	Platform power systems	Elektric fuel insertion pump
New suppliers of rod wire	Brake linings (Long-life)	Twin Disc brake
	Oteva 90 Valve spring wire	Energy Management Systems
	Nitratable piston ring	Alfdex
AWD Generation III		Varivent
		Oil-free compressor
		Elektric disc brake

Challenge

Haldex

**That in a business with
an annual growth of
2-3 % find niches that
have higher growth**

Haldex has grown:

- organically
- by mergers and acquisitions

Therefore a complex structure of

- organization
- ERP systems
- CAD systems
- PDM or Product definitions

Customer base:

- global
- different standards
- different CAD
- different requirements
- different ECM

Requires agreements on conversion Haldex data to their standards.

Communication:

- e-mail
- CD
- EDI
- Direct, e.g. VW