



HYDRAULIC SLAVE CYLINDERS AND WHEEL CYLINDERS

Convert Hydraulic Pressure
to Mechanical Force



The hydraulic cylinders presented in this literature are small bore, short stroke cylinders used for remote clutch and brake actuation. They are also used in industry for holding, clamping, latching and other applications.

The drawings in this guide show only general dimensions. If more detailed information is required on any of the model numbers, a customer print is available upon request.

Edition 1

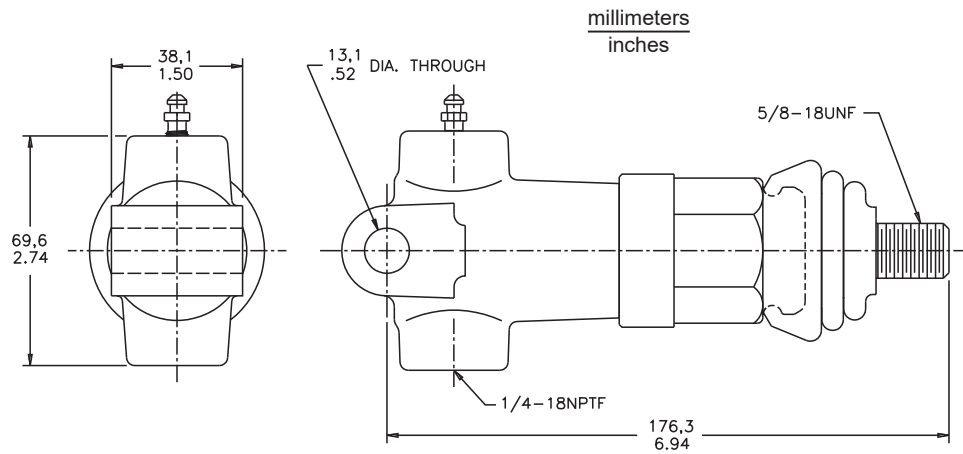
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80-100-001 (en)

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Slave Cylinder

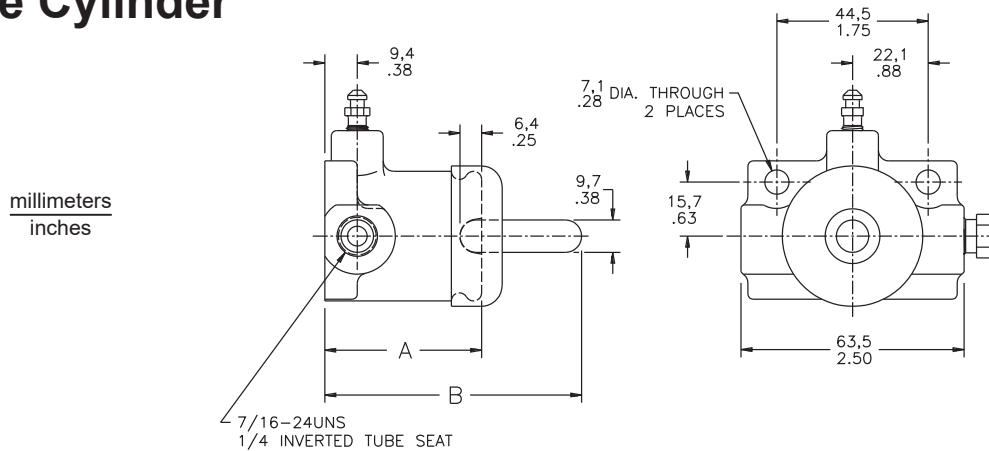


SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Effective Stroke	Fluid Volume Required for Full Stroke	Repair Kit Number
03-120-034	HO	25.4 mm (1.00 in)	44.5 mm (1.75 in)	22.5 cm ³ (1.37 in ³)	02-100-035
03-120-039	BF	25.4 mm (1.00 in)	44.5 mm (1.75 in)	22.5 cm ³ (1.37 in ³)	02-100-032
03-120-060	HO	25.4 mm (1.00 in)	44.5 mm (1.75 in)	22.5 cm ³ (1.37 in ³)	02-100-035
03-120-061	BF	25.4 mm (1.00 in)	44.5 mm (1.75 in)	22.5 cm ³ (1.37 in ³)	02-100-032

BF = DOT 3, 4, 5, and 5.1 brake fluid HO = mineral base hydraulic oil

Slave Cylinder



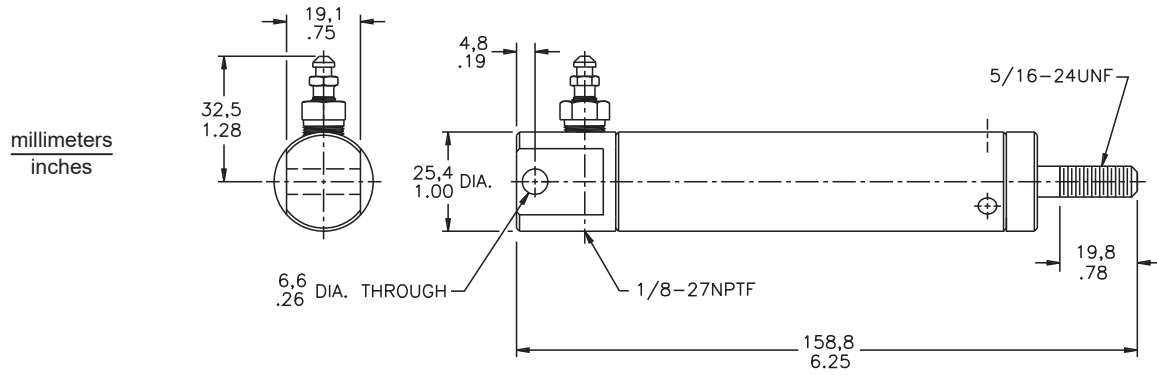
SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Effective Stroke	Fluid Volume Required for Full Stroke	Dimensions		Repair Kit Number
					A	B	
02-120-006	BF	25.4 mm (1.00 in)	12.7 mm (0.50 in)	6.4 cm ³ (0.39 in ³)	46.0 mm (1.81 in)	75.4 mm (2.97 in)	not available
02-120-016	BF	19.1 mm (0.75 in)	25.4 mm (1.00 in)	7.2 cm ³ (0.44 in ³)	58.7 mm (2.31 in)	100.8 mm (3.97 in)	02-100-001
* 02-120-017	BF	19.1 mm (0.75 in)	25.4 mm (1.00 in)	7.2 cm ³ (0.44 in ³)	58.7 mm (2.31 in)	n/a	02-100-001
02-120-020	HO	25.4 mm (1.00 in)	25.4 mm (1.00 in)	12.9 cm ³ (0.79 in ³)	58.7 mm (2.31 in)	100.8 mm (3.97 in)	02-100-029
02-120-021	BF	25.4 mm (1.00 in)	25.4 mm (1.00 in)	12.9 cm ³ (0.79 in ³)	58.7 mm (2.31 in)	100.8 mm (3.97 in)	02-100-007
02-120-026	BF	25.4 mm (1.00 in)	12.7 mm (0.75 in)	9.6 cm ³ (0.59 in ³)	52.3 mm (2.06 in)	88.1 mm (3.47 in)	02-100-007
02-120-071	BF	26.9 mm (1.06 in)	25.4 mm (1.00 in)	14.5 cm ³ (0.89 in ³)	58.7 mm (2.31 in)	100.8 mm (3.97 in)	02-100-016
* 02-120-117	BF	25.4 mm (1.00 in)	25.4 mm (1.00 in)	12.9 cm ³ (0.79 in ³)	58.7 mm (2.31 in)	n/a	02-100-007
03-120-010	HO	19.1 mm (0.75 in)	12.7 mm (0.50 in)	3.6 cm ³ (0.22 in ³)	46.0 mm (1.81 in)	75.4 mm (2.97 in)	not available
03-120-017	BF	25.4 mm (1.00 in)	25.4 mm (1.00 in)	12.9 cm ³ (0.79 in ³)	58.7 mm (2.31 in)	100.8 mm (3.97 in)	02-100-007
03-120-051	BF	15.7 mm (0.62 in)	12.7 mm (0.50 in)	2.5 cm ³ (0.15 in ³)	46.0 mm (1.81 in)	74.4 mm (2.93 in)	02-100-014

* Push rod not included

BF = DOT 3, 4, 5, and 5.1 brake fluid HO = mineral base hydraulic oil

Slave Cylinder



SPECIFICATIONS

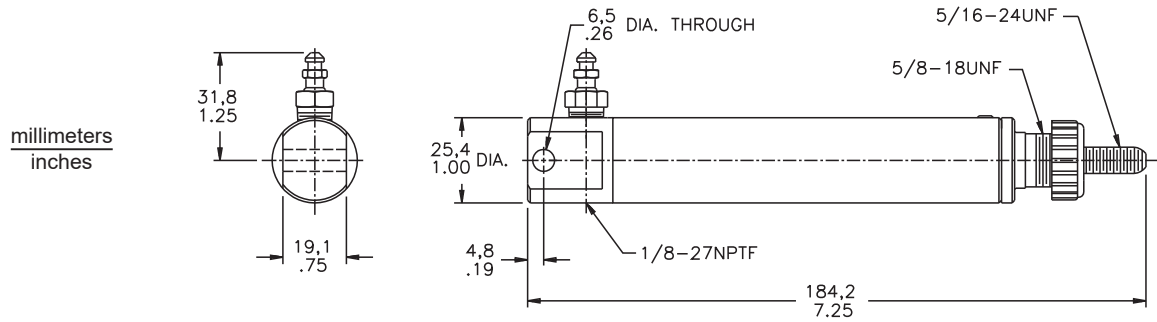
Model Number	Fluid Type	Bore Diameter	Effective Stroke	Fluid Volume Required for Full Stroke	Repair Kit Number
12-120-007	BF	15.7 mm (0.62 in)	62.0 mm (2.44 in)	12.1 cm ³ (0.74 in ³)	12-100-009
12-120-010	HO	15.7 mm (0.62 in)	62.0 mm (2.44 in)	12.1 cm ³ (0.74 in ³)	12-100-010
* 12-120-013	BF	15.7 mm (0.62 in)	62.0 mm (2.44 in)	12.1 cm ³ (0.74 in ³)	12-100-011

* Includes boot 42-570-009

BF = DOT 3, 4, 5, and 5.1 brake fluid HO = mineral base hydraulic oil

NOTE: Maximum pressure - 103.4 bar (1500 PSI)

Slave Cylinder



SPECIFICATIONS

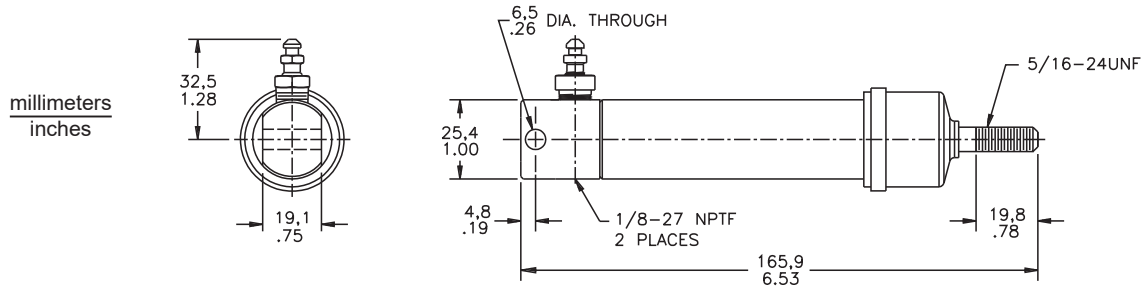
Model Number	Fluid Type	Bore Diameter	Effective Stroke	Fluid Volume Required for Full Stroke	Repair Kit Number
12-120-015	BF	15.7 mm (0.62 in)	52.3 mm (2.06 in)	10.3 cm ³ (0.63 in ³)	12-100-013
* 12-120-017	BF	15.7 mm (0.62 in)	52.3 mm (2.06 in)	10.3 cm ³ (0.63 in ³)	12-100-013
12-120-016	HO	15.7 mm (0.62 in)	52.3 mm (2.06 in)	10.3 cm ³ (0.63 in ³)	12-100-014

* No return spring

BF = DOT 3, 4, 5, and 5.1 brake fluid HO = mineral base hydraulic oil

NOTE: Maximum pressure - 103.4 bar (1500 PSI)

Slave Cylinder



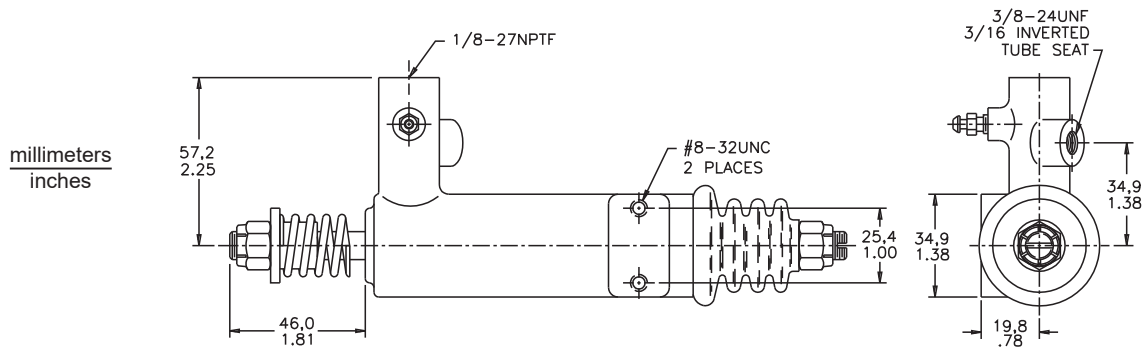
SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Effective Stroke	Fluid Volume Required for Full Stroke	Repair Kit Number
12-120-123	BF	15.7 mm (0.62 in)	54.6 mm (2.15 in)	10.8 cm ³ (0.66 in ³)	12-100-020

BF = DOT 3, 4, 5, and 5.1 brake fluid

NOTE: Maximum pressure - 103.4 bar (1500 PSI)

Slave Cylinder

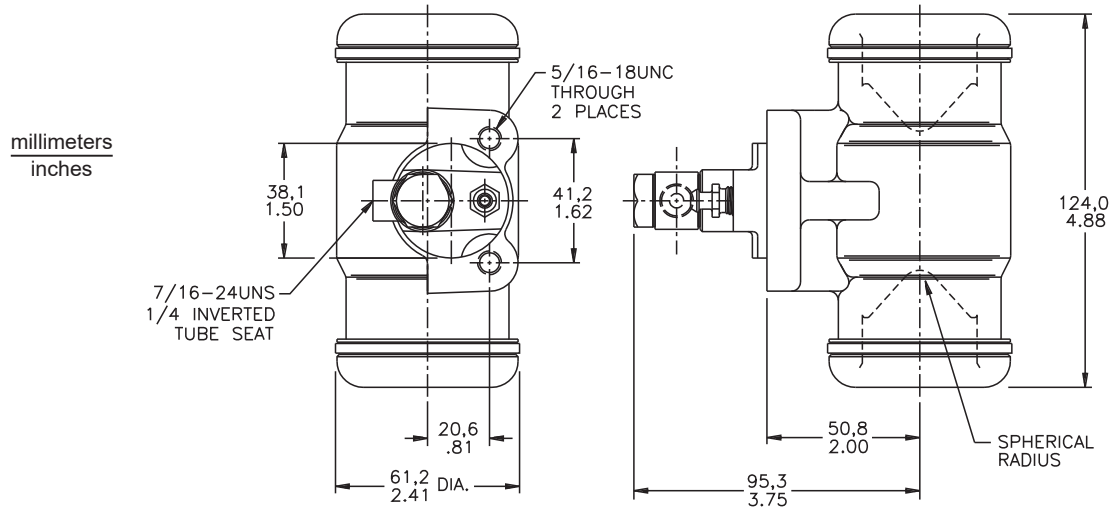


SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Effective Stroke	Fluid Volume Required for Full Stroke	Repair Kit Number
02-120-057	BF	25.4 mm (1.00 in)	9.7 mm (0.38 in)	4.8 cm ³ (0.29 in ³)	02-100-018

BF = DOT 3, 4, 5, and 5.1 brake fluid

Wheel Cylinder

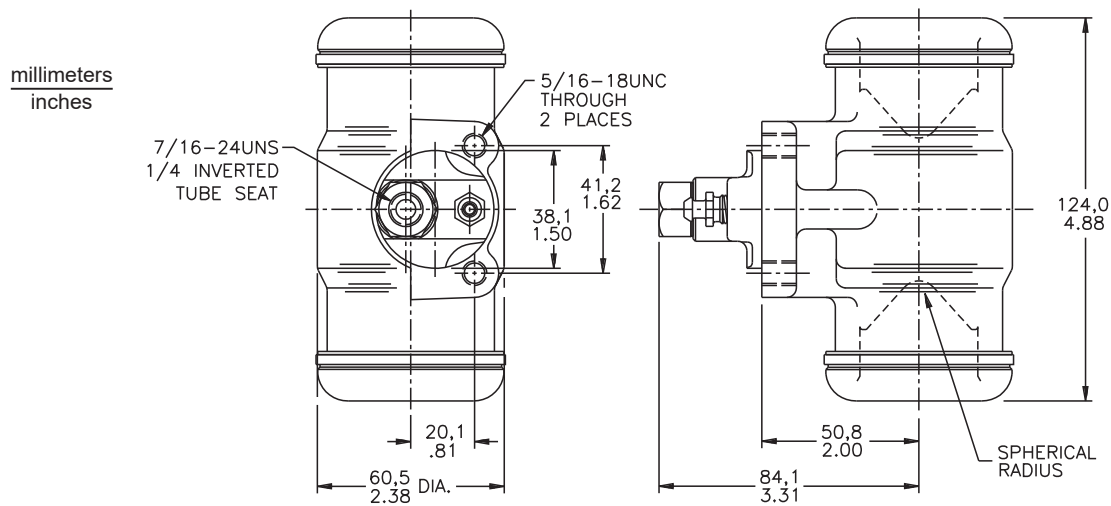


SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Effective Stroke Each Side	Effective Stroke Total	Spherical Radius	Repair Kit Number
12-140-011	BF	38.1 mm (1.50 in)	16.8 mm (0.66 in)	33.5 mm (1.32 in)	6.4 mm (0.25 in)	12-100-003
12-140-012	HO	44.5 mm (1.75 in)	10.4 mm (0.41 in)	20.8 mm (0.82 in)	7.9 mm (0.31 in)	12-100-002
12-140-013	BF	44.5 mm (1.75 in)	10.4 mm (0.41 in)	20.8 mm (0.82 in)	7.9 mm (0.31 in)	12-100-005
12-140-021	BF	35.1 mm (1.38 in)	16.8 mm (0.66 in)	33.5 mm (1.32 in)	6.4 mm (0.25 in)	not available

BF = DOT 3, 4, 5, and 5.1 brake fluid HO = mineral base hydraulic oil

Wheel Cylinder

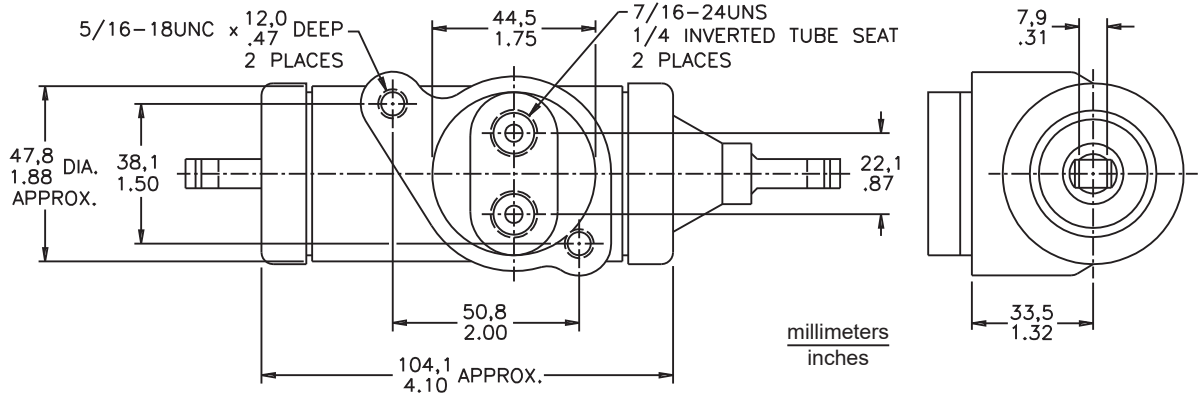


SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Effective Stroke Each Side	Effective Stroke Total	Spherical Radius	Repair Kit Number
04-140-015	BF	38.1 mm (1.50 in)	16.8 mm (0.66 in)	33.5 mm (1.32 in)	6.4 mm (0.25 in)	12-100-003
04-140-021	BF	44.5 mm (1.75 in)	10.4 mm (0.41 in)	20.8 mm (0.82 in)	7.9 mm (0.31 in)	12-100-005

BF = DOT 3, 4, 5, and 5.1 brake fluid

Wheel Cylinder

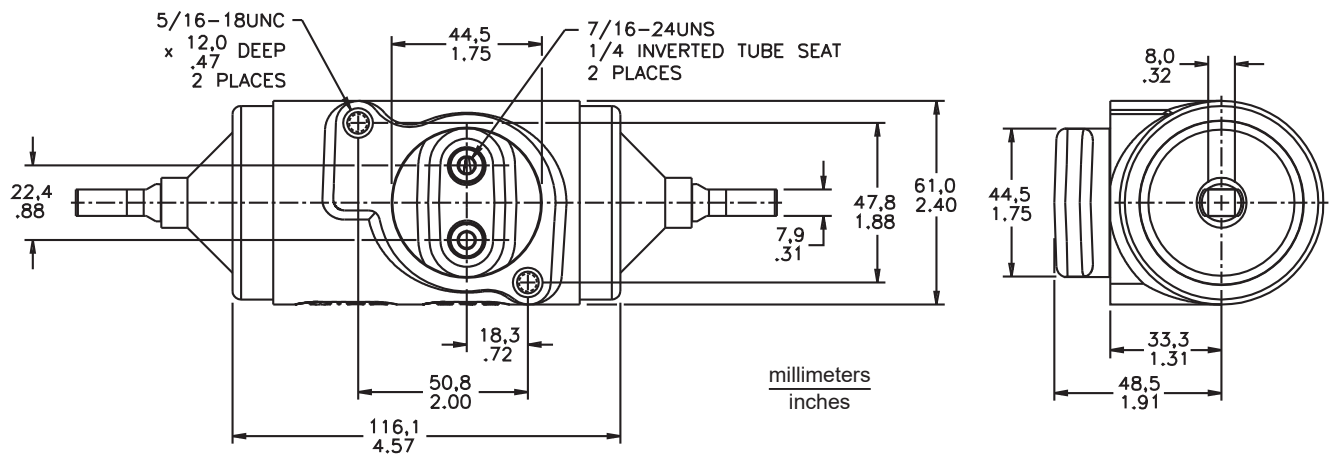


SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Repair Kit Number
04-120-031	BF	38.1 mm (1.50 in)	not available

BF = DOT 3, 4, 5, and 5.1 brake fluid

Wheel Cylinder



SPECIFICATIONS

Model Number	Fluid Type	Bore Diameter	Repair Kit Number
03-140-011	BF	44.5 mm (1.75 in)	02-100-038
03-140-013	BF	38.1 mm (1.50 in)	02-100-051

BF = DOT 3, 4, 5, and 5.1 brake fluid

About ZF Friedrichshafen AG

ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. ZF allows vehicles to see, think and act. In the four technology domains Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies different kinds of vehicles. With its products, the company contributes to reducing emissions and protecting the climate.

ZF, which acquired WABCO Holdings Inc. on May 29, 2020, now has 162,000 employees worldwide with approximately 260 locations in 41 countries. In 2019, the two then-independent companies achieved sales of €36.5 billion (ZF) and \$3.4 billion (WABCO).

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