

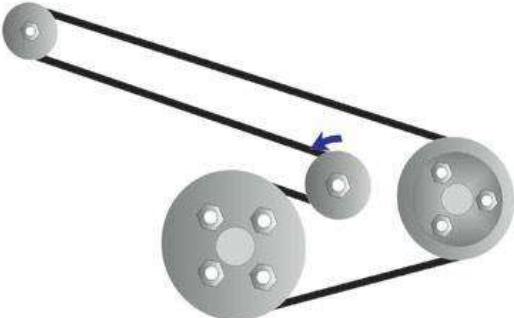


OPEL / VAUXHALL **Astra H (Classic III) (A04)** 2.0

16V Turbo Z 20 LER

2004 - 2014

Adjustment Data

Engine (general)	
Engine code	Z 20 LER
Capacity	1998(cc)
Distribution type	
Timing belt	
Number of cylinders	4
Speed at maximum power	5400(rpm)
Engine (specifications)	
Engine management (make and type)	Bosch Motronic ME7.6.2
Firing order	1-3-4-2
Spark plugs (make and type)	Bosch FQR8LE2
Spark plug gap	0.9 - 1.1(mm)
Injection pressure/system pressure	3.3(bar)
Number of spark plugs	4
<i>Drive belt layout</i> 	
Idle speed(Use: Tech 2 tester)	700 - 900(rpm)
Valve clearance	
Hydraulic	
Compression pressure	
Normal	11.0 - 14.0(bar)
Differential limit between cylinders	< 1.0(bar)
Differential limit between cylinders	25(%)
Oil pressure(At idle speed)	1.8 - 2.6(bar/rpm)
Emissions	
CO at fast-idle speed	0.2(%)
Fast-idle speed	2800 - 3200(rpm)
Lambda change (Delta Lambda)	0.97 - 1.03
Oil temperature during test	80(°C)
Test speed	700 - 900(rpm)
Catalytic converter conditioning	0.5(min)
Lambda	0.97 - 1.03
Fuel consumption, extra-urban driving	7.10 - 7.30(l/100 km)
Fuel consumption, urban driving	13.10 - 13.30(l/100 km)



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Fuel consumption, combined usage	9.30 - 9.50(l/100 km)
MPV/Van/Manual transmission	
Emission code	70/220*2003/76B
Emission standard	Euro 4
CO2 average	226(g/km)
CO	0.452(g/km)
HC	0.080(g/km)
NOx	0.022(g/km)
HC NOx	-
Hatchback/Manual transmission	
Emission code	70/220*2002/80B,70/220*2003/76B
Emission standard	Euro 4
CO2 average	223(g/km)
CO	0.452(g/km)
HC	0.080(g/km)
NOx	0.022(g/km)
HC NOx	-
Coupe/Manual transmission	
Emission code	70/220*2002/80B,70/220*2003/76B
Emission standard	Euro 4
CO2 average	223(g/km)
CO	0.452(g/km)
HC	0.080(g/km)
NOx	0.022(g/km)
HC NOx	-
Cabriolet/Manual transmission	
Emission code	70/220*2003/76B
Emission standard	Euro 4
CO2 average	228(g/km)
CO	0.452(g/km)
HC	0.080(g/km)
NOx	0.022(g/km)
HC NOx	-
Cooling system	
Thermostat opens at	92(°C)
Electrical	
Alternator	120(A)
Battery location	
Engine compartment	



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Battery	44(Ah)
 <i>Battery: procedures for disconnection/reconnection</i>	
Cold cranking amperes (CCA)	420(A)
Battery	50(Ah)
Cold cranking amperes (CCA)	420(A)
Battery	60(Ah)
Cold cranking amperes (CCA)	510(A)
Battery	65(Ah)
Cold cranking amperes (CCA)	640(A)
Battery	70(Ah)
Cold cranking amperes (CCA)	800(A)
Battery	36(Ah)
Battery	55(Ah)
Brakes	
Brakes	
Brake pedal free travel	15 ± 5(mm)
Parking brake adjustment	3(Notches)
Front disc brakes	
Disc diameter, front	308.0(mm)
Disc thickness, front	25.0(mm)
Disc thickness, front, minimum	22.0(mm)
Disc run-out, maximum	0.11(mm)
Brake pad thickness, front	14.0(mm)
Brake pad thickness, front, minimum	2.0(mm)
Rear drum brakes	
Drum diameter, rear	230.0(mm)
Drum diameter, rear, maximum	231.0(mm)
Drum lining thickness(Without backplate)	5.0(mm)
Drum lining thickness, minimum(Without backplate)	1.0(mm)
Rear disc brakes	
Disc diameter, rear	264.0(mm)
Disc thickness, rear	10.0(mm)
Disc thickness, rear, minimum	8.0(mm)
Disc run-out, maximum	0.1(mm)
Brake pad thickness, rear(Without backplate)	10.5(mm)
Brake pad thickness, rear, minimum(Without backplate)	2.0(mm)
Steering and wheel alignment	
Suspension	
<i>Vehicle condition(Unloaded)</i>	



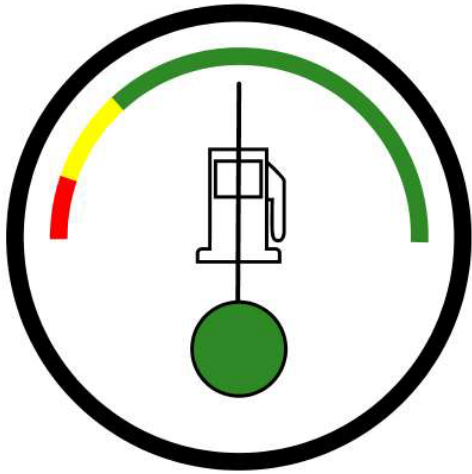
OPEL / VAUXHALL **Astra H (Classic III) (A04)** 2.0



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2004 - 2014

Adjustment Data



Standard suspension,(Saloon),(- 2005)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°10' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	15'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Saloon),(- 2005)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°10' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	15'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Saloon),(- 2005)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)



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2004 - 2014

Adjustment Data

Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°10' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	15'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Estate),(- 2005)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°05' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	15'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Estate),(- 2005)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°05' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	15'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Estate),(- 2005)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°05' (-20'/+30')(°)



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2004 - 2014

Adjustment Data

Maximum difference between the left-hand side and right-hand side	15'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Saloon),(2006)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 1°(°)
Toe-in, rear(Not adjustable)	0°10' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Saloon),(2006)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 1°(°)
Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Saloon),(2006)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Estate),(2006)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)



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2004 - 2014

Adjustment Data

Castor, front	3°30' ± 1°(°)
Toe-in, rear(Not adjustable)	0°02' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Estate),(2006)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Estate),(2006)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°40' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°02' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Saloon,3-door),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)



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Adjustment Data

Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(3-door,Saloon),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(3-door,Saloon),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Saloon,5-door),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°55' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°10' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Saloon,5-door),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)



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2004 - 2014

Adjustment Data

Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°05' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Saloon,5-door),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°25' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°50' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Estate),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°20' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°02' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Estate),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°40' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)



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2004 - 2014

Adjustment Data

Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Estate),(2007 - 2009)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°25' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°25' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°02' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(3-door,Saloon),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(3-door,Saloon),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°05' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(3-door,Saloon),(2010 -)	
Toe-in, front	0°00' ± 10'(°)



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2004 - 2014

Adjustment Data

Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°25' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°45' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(5-door,Saloon,4-door),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°55' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°10' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Lowered suspension,(4-door,5-door,Saloon),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°55' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°00' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°25' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(5-door,Saloon,4-door),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°35' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	4°05' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)



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2004 - 2014

Adjustment Data

Toe-in, rear(Not adjustable)	0°14' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(5-door,Saloon,4-door),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°25' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°50' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°15' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Estate,Van),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°20' ± 1°(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°02' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Estate,Van),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°40' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°30' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°07' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)



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16V Turbo Z 20 LER

2004 - 2014

Adjustment Data

Reinforced suspension,(Estate, Van),(2010 -)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°25' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°25' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°02' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Standard suspension,(Convertible,Coupe)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°50' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°50' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°13' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Sport/lowered suspension,(Convertible,Coupe)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°45' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Castor, front	3°50' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°13' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)
Reinforced suspension,(Convertible,Coupe)	
Toe-in, front	0°00' ± 10'(°)
Front-wheel steering angle, outer(Measured with the inside wheel turned 20°)	18°15' ± 45'(°)
Camber, front	-0°45' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)



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2004 - 2014

Adjustment Data

Castor, front	3°55' ± 45'(°)
Maximum difference between the left-hand side and right-hand side	1°(°)
Toe-in, rear(Not adjustable)	0°13' (-20'/+30')(°)
Maximum difference between the left-hand side and right-hand side	25'(°)
Camber, rear(Not adjustable)	-1°20' ± 30'(°)
Maximum difference between the left-hand side and right-hand side	35'(°)

Wheels and tyres

Emissions	
Speed index, min.(Based on the maximum speed as listed in the European Type Approval data sheets)	L

Wheels and tyres	
Tyre size	205/55 R16 91H/V (6½Jx16)
Tyre size (optional)	225/45 R17 91V (7Jx17)
Front tyre pressure	2.3(bar)
Front tyre pressure(Convertible)	2.5(bar)
Rear tyre pressure	2.1(bar)
Rear tyre pressure(Convertible)	2.3(bar)
Tyre size	215/45 R17 91V (7Jx17)
Tyre size	225/40 R18 92W (7½Jx18)
Front tyre pressure	2.6 - 2.7(bar)
Rear tyre pressure	2.4 - 2.5(bar)
Spare tyre size	T115/70 R16
Spare tyre pressure	4.2(bar)
This vehicle is fitted with direct TPMS	
Note: Do not damage the tyre pressure sensors in the wheels	

Capacities

Engine	
Engine sump, including filter	4.25(l)
<i>Lubricants and Fluids(Engine)</i>	
<i>Lubricants and Fluids(Cooling system)</i>	
Cooling system	7.7(l)
<i>Plug location</i>	



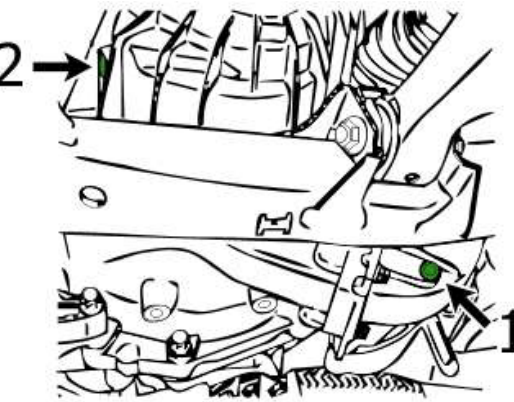
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2004 - 2014

Adjustment Data



Brakes	
Brake system	0.5(l)
 Lubricants and Fluids(Brakes)	
Manual transmission,(M32)	
Manual transmission	M32-6
 Manual transmission: level and drain/refill (M20,M32)	
 Lubricants and Fluids(Manual transmission,(M32))	
Gearbox refill	2.2(l)
Gearbox refill after overhaul	2.4(l)
<i>Plug location(1 - Drain plug; 2 - Level plug)</i>	
	
<i>Plug location(Filler plug)</i>	
 Technical Drawings	
Air conditioning	
Refrigerant	
<i>Plug location(High-pressure connecting pipe (H); low-pressure connecting pipe (L))</i>	

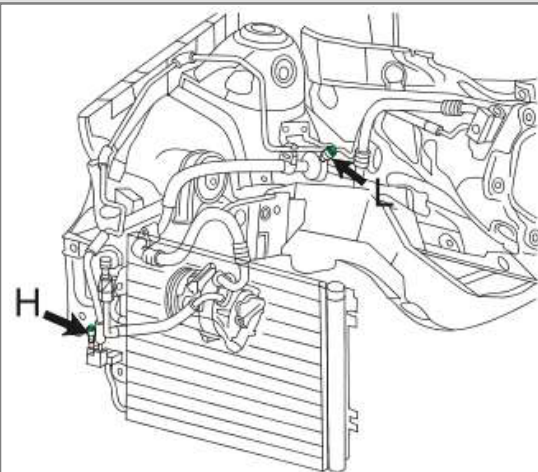


OPEL / VAUXHALL **Astra H (Classic III) (A04)** 2.0

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2004 - 2014

Adjustment Data



Air-conditioning compressor oil	150(ml)
Lubricants and Fluids(Air conditioning)	
Lubricants and Fluids((- 2005))	
Lubricants and Fluids((2006 -))	
(- 2005)	
Refrigerant	500(g)
(2006 -)	
Refrigerant	475(g)
Torque settings	
Engine	
Note: Always renew stretch bolts and self-locking nuts	
<i>Cylinder head</i>	
Renew the bolts	
Stage 1	25(Nm)
Stage 2	90(°)
Stage 3	90(°)
Stage 4	90(°)
Stage 5	15(°)
Main bearing cap(Renew the bolts)	
Stage 1	50(Nm)
Stage 2	45(°)



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Adjustment Data

Stage 3	15(°)
Big-end bearing cap(Renew the bolts)	
Stage 1	35(Nm)
Stage 2	45(°)
Stage 3	15(°)
Spark plugs	25(Nm)
Knock sensor	20(Nm)
Camshaft bearing caps	8(Nm)
Valve cover	8(Nm)
Ignition coil	8(Nm)
Camshaft position sensor	6(Nm)
Camshaft gearwheel	
Renew the bolts	
Stage 1	50(Nm)
Stage 2	60(°)
Stage 3	15(°)
Inlet manifold	8(Nm)
Exhaust manifold(Renew the nuts)	
Stage 1	8(Nm)
Stage 2(Wait for 5 minutes)	
Stage 3	16(Nm)
Engine oil drain plug	10(Nm)
Oil filter	15(Nm)
Sump	
Stage 1	8(Nm)
Stage 2	30(°)
Alternator	35(Nm)
Starter motor	45(Nm)
Flywheel(Renew the bolts)	
Stage 1	35(Nm)
Stage 2	30(°)
Stage 3	15(°)
Coolant pump	8(Nm)
Oxygen sensor	40(Nm)
Crankshaft gearwheel(Renew the bolts)	
Stage 1	130(Nm)
Stage 2	45 ± 5(°)
Crankshaft pulley(Outer bolts)	20(Nm)
Brakes	
Brakes: Refer to 'Technical drawings'	
<i>Technical Drawings(Rear drum brakes)</i>	



OPEL / VAUXHALL **Astra H (Classic III) (A04)** 2.0

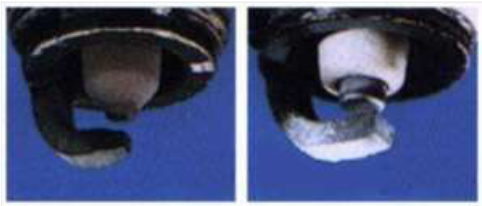
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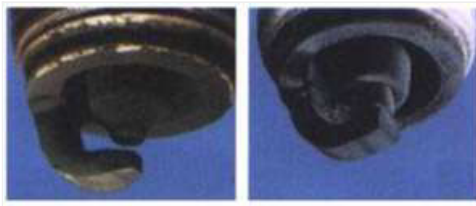
Adjustment Data

<i>Technical Drawings(Brakes)</i>	
<i>Technical Drawings(Rear disc brakes)</i>	
<i>Technical Drawings(Front disc brakes)</i>	
Manual transmission,(M32)	
Clutch cover	M6: 12(Nm)
Clutch cover	M7: 15(Nm)
Clutch cover	M8: 28(Nm)
Manual transmission filler plug	30(Nm)
Manual transmission drain plug	20(Nm)
Suspension	
Front drive shaft to wheel bearing housing	
Stage 1	150(Nm)
Stage 2(Loosen)	
Stage 3	45(°)
Stage 4	250(Nm)
Suspension: Refer to 'Technical drawings'	
<i>Technical Drawings(Suspension)</i>	
Wheels and tyres	
Wheel bolts(Grease the taper)	110(Nm)
Tyre pressure sensor	9(Nm)
Steering	
Steering wheel	30(Nm)
Power steering pump	22(Nm)
Steering: Refer to 'Technical drawings'	
<i>Technical Drawings(ZF)</i>	
<i>Technical Drawings(TRW)</i>	
Air conditioning	
Air-conditioning compressor	25(Nm)

Normal



Formación de hollín



Causa posible:

- Mezcla incorrecta
- Filtro de aire sucio
- Dispositivo de arranque en frío
- Rango de calor de la bujía incorrecto

Depósito de plomo sobre la bujía



Causa posible:

- Combustible incorrecto
- Gran carga de motor

Aceite depositado sobre la bujía



Causa posible:

- Demasiado nivel de aceite
- Aro(s) de pistón desgastados
- Guía(s) de válvula desgastada

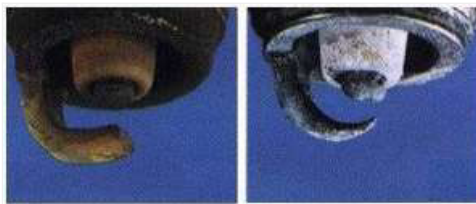
Cenizas depositadas sobre la bujía



Causa posible:

- Aceite de motor incorrecto

Electrodo central desgastado



Causa posible:

- Bujía demasiado vieja
- Golpeteo del motor
- Establecimiento en la cámara de combustión
- Aditivos del combustible y / o aceite

Electrodo fundido



Causa posible:

- Incandescencia de encendido
- Puesta a punto de encendido incorrecta
- Establecimiento en la cámara de combustión
- Válvulas dañadas
- Distribuidor roto

Electrodo central fundido



- Combustible incorrecto

Causa posible:

- Incandescencia de encendido
- Puesta a punto de encendido incorrecta
- Establecimiento en la cámara de combustión
- Válvulas dañadas
- Distribuidor roto

Las fotografías han sido cedidas amablemente por Robert Bosch GmbH



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2004 - 2014

Lubricants and Fluids

Description	Quality	Temperature	Viscosity
Engine			
Engine oil	GM-LL-A-025/Dexos 2		SAE 0W-30
Engine oil	GM-LL-A-025/Dexos 2		SAE 0W-40
Engine oil	GM-LL-A-025/Dexos 2		SAE 5W-30
Engine oil	GM-LL-A-025/Dexos 2		SAE 5W-40
Coolant		Above -27 °C	
Water with 40 - 50% anti-freeze			
 Engine sump, including filter	4.25 (l)		
 Cooling system	7.7 (l)		
 Plug location			
			
 Engine oil drain plug	10 (Nm)		
Cooling system			
Coolant	LLC	Above -28 °C	
Water with 50% anti-freeze			
 Cooling system	7.7 (l)		
 Plug location			

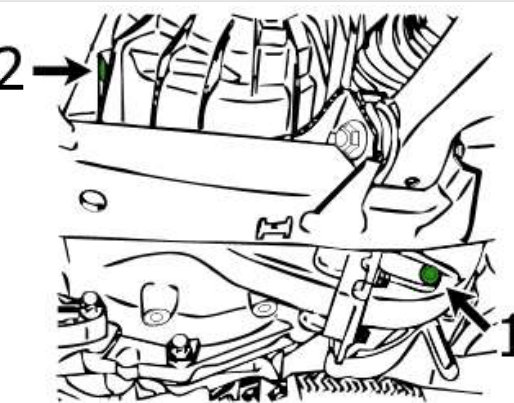


OPEL / VAUXHALL **Astra H (Classic III) (A04)** 2.0

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2004 - 2014

Lubricants and Fluids

Description	Quality	Temperature	Viscosity
			
Brakes			
Brake fluid	DOT 4+		
Brake fluid	DOT 4 ESP		
 Brake system	0.5 (l)		
Manual transmission,(M32)			
Gear oil	API GL-4		
Gear oil	Opel No. 19 40 768		
 Manual transmission	M32-6		
 Gearbox refill	2.2 (l)		
 Gearbox refill after overhaul	2.4 (l)		
 Plug location		1 - Drain plug; 2 - Level plug	
			
 Plug location		Filler plug	

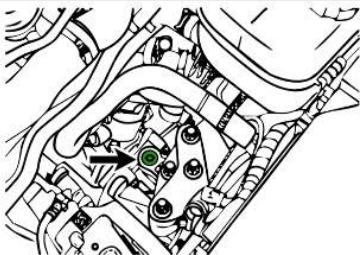
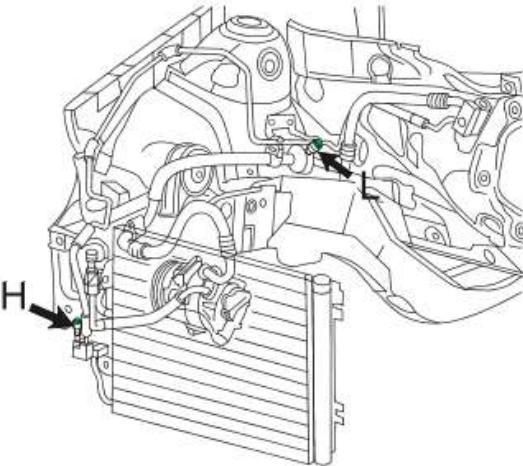
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Lubricants and Fluids

Description	Quality	Temperature	Viscosity
			
Steering			
Hydraulic fluid	Opel No. 19 40 715		
Hydraulic fluid	Pentosin CHF 11S		
Hydraulic fluid	Pentosin CHF 202		
Air conditioning			
Compressor oil	Opel No. 90 509 933 (PAG)		
Compressor oil	Opel No. 19 49 873 (PAG)		
 Plug location		High-pressure connecting pipe (H); low-pressure connecting pipe (L)	
			
 Air-conditioning compressor oil	150 (ml)		
(- 2005)			
Refrigerant	R134a		
 Refrigerant	500 (g)		
(2006 -)			
Refrigerant	R134a		
 Refrigerant	475 (g)		



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Service indicator reset

Service indicator reset	
Note: If the time or distance is outside the service parameters of the vehicle, a manual reset of the service indicator may not be possible	
	
Turn the ignition off	
Press and hold the reset button	(1)
Turn the ignition on	
Note: Do not start the engine	
Press and hold the brake pedal	
Note: Ensure the button is still pressed	(1)
Wait for 5 seconds	
The display shows:	'InSP-----'
Release the brake pedal and reset button at the same time	(1)
Wait for 10 seconds	
Until the display shows:	'InSP XX,000 km'
The system is reset	



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Tyre pressure monitoring system

General	
Resetting is required after the following:	
Tyre pressure check/adjustment	
Changing one or more wheels/tyres	
Resetting the tyre pressure monitoring system	
Turn the ignition key to position '2'	
Press and hold button (1)	
Wait for 4 seconds	
	
The indicator flashes	
	
Release the button	
Drive the vehicle to complete the procedure	

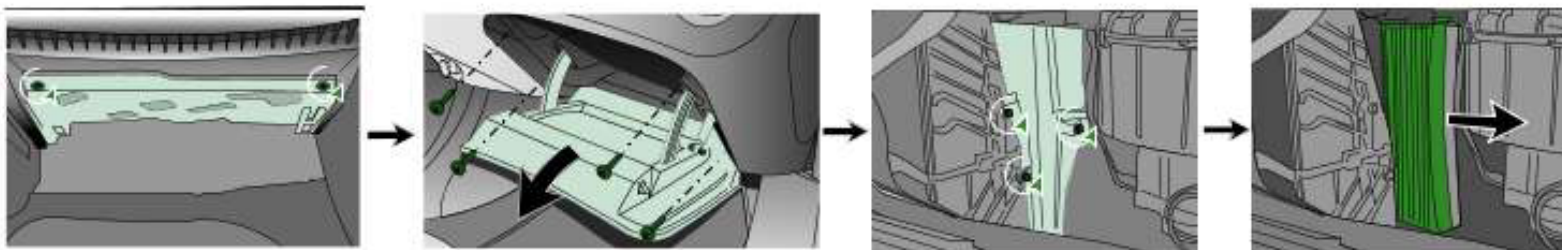
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Dust and pollen filter location





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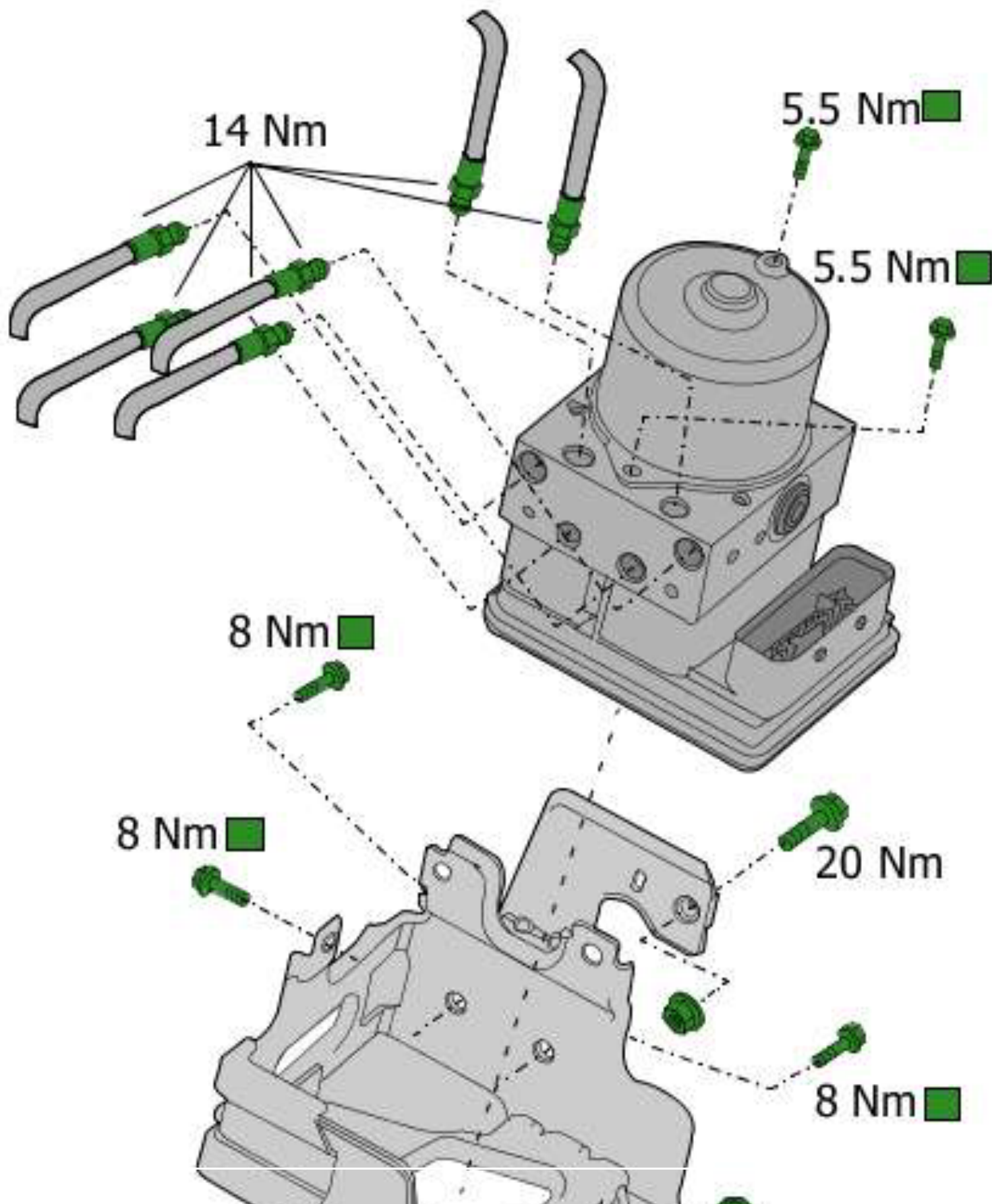
2004 - 2014

ABS, hydraulic unit, Mk 60

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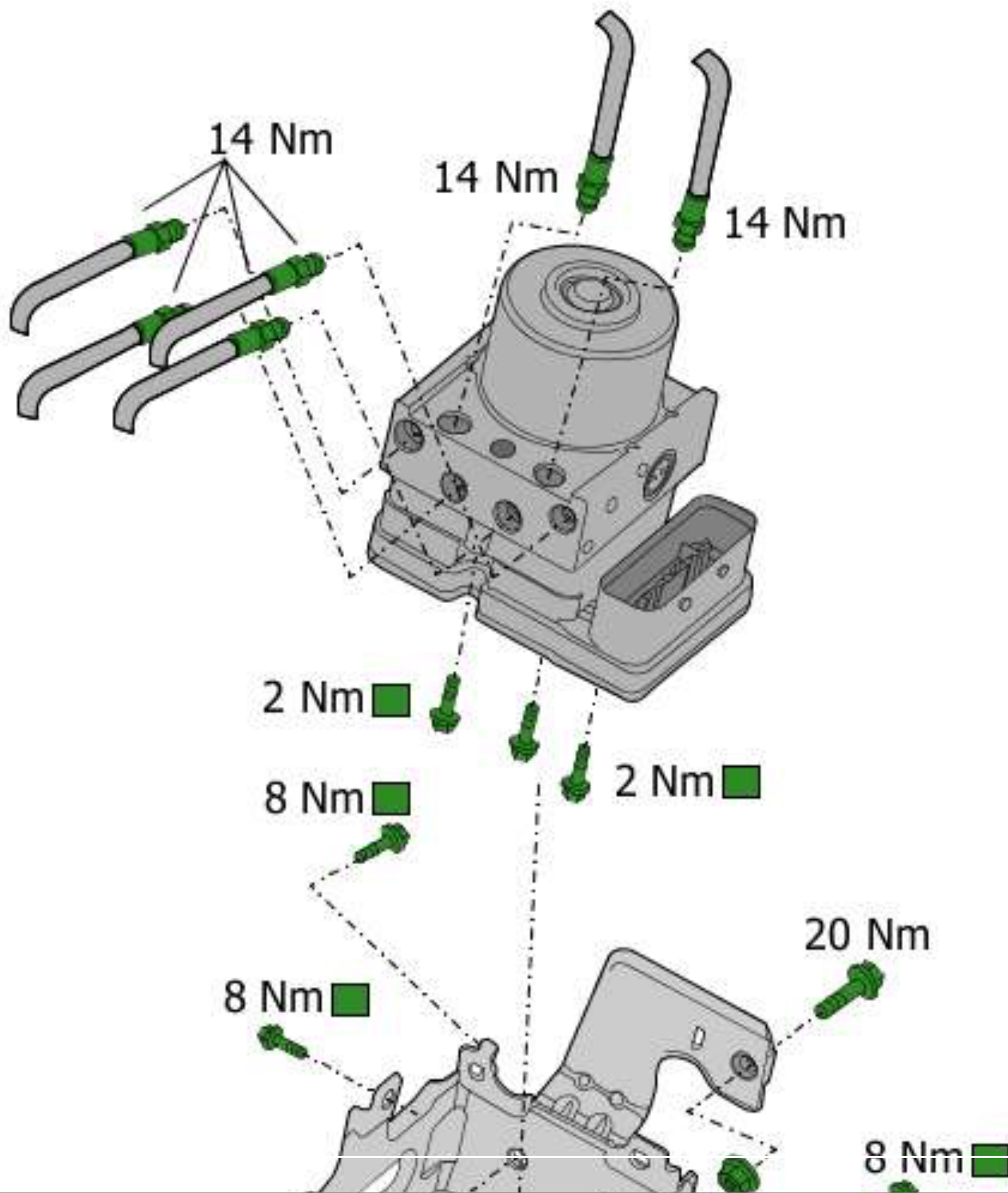
2004 - 2014

ABS, hydraulic unit, Mk 70

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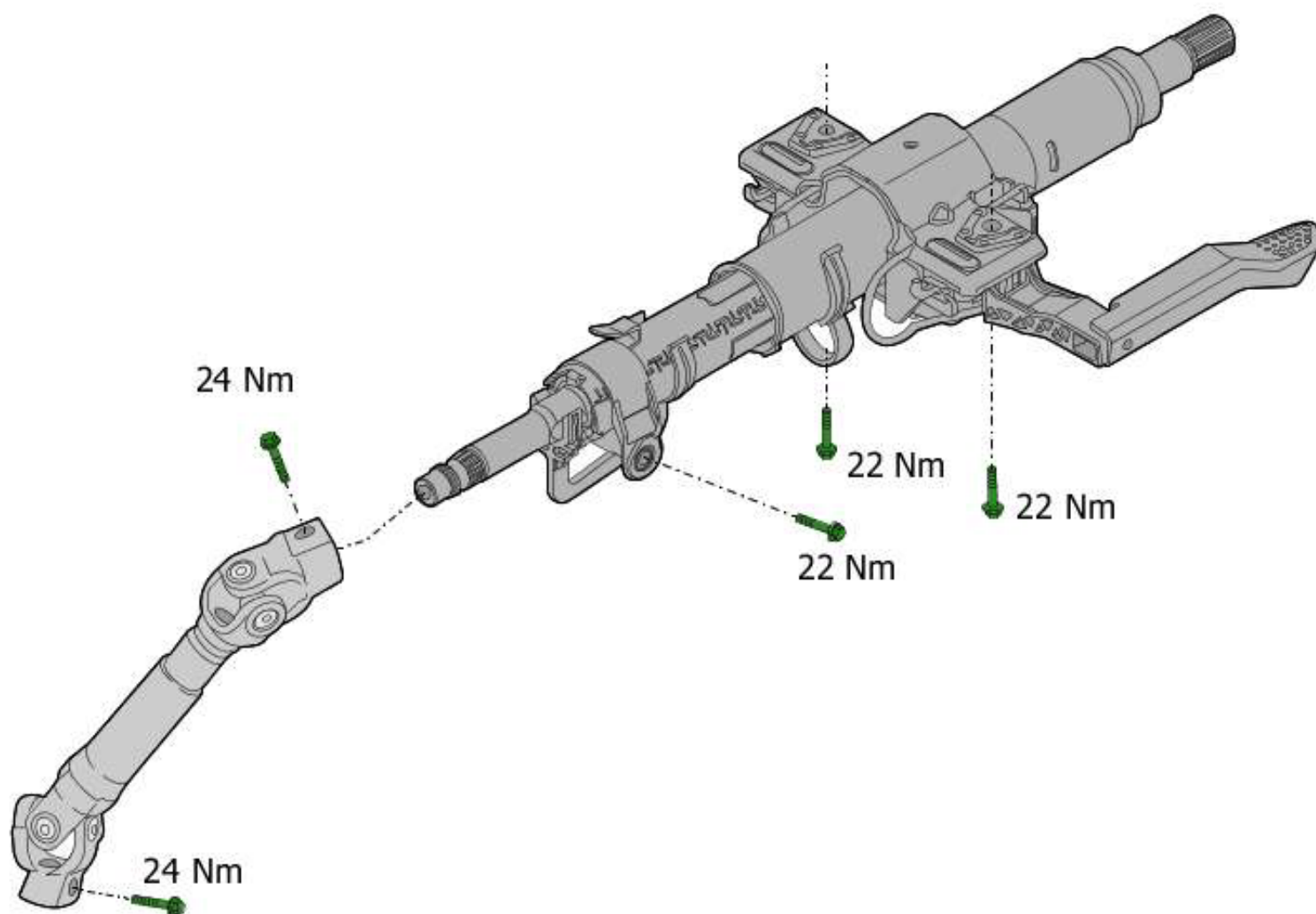


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Steering column



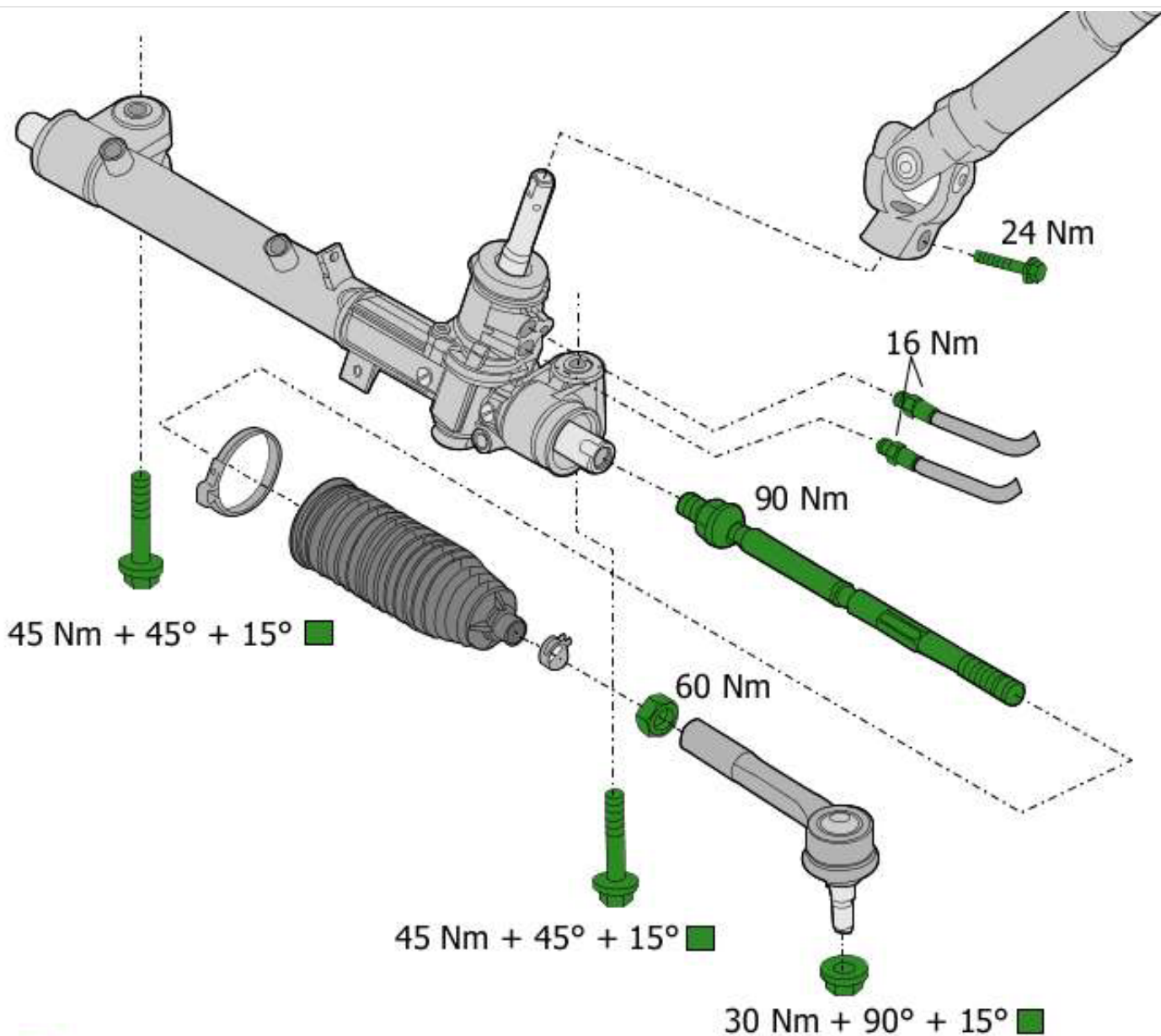
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Power steering rack



■ Renovar tornillos/tuercas

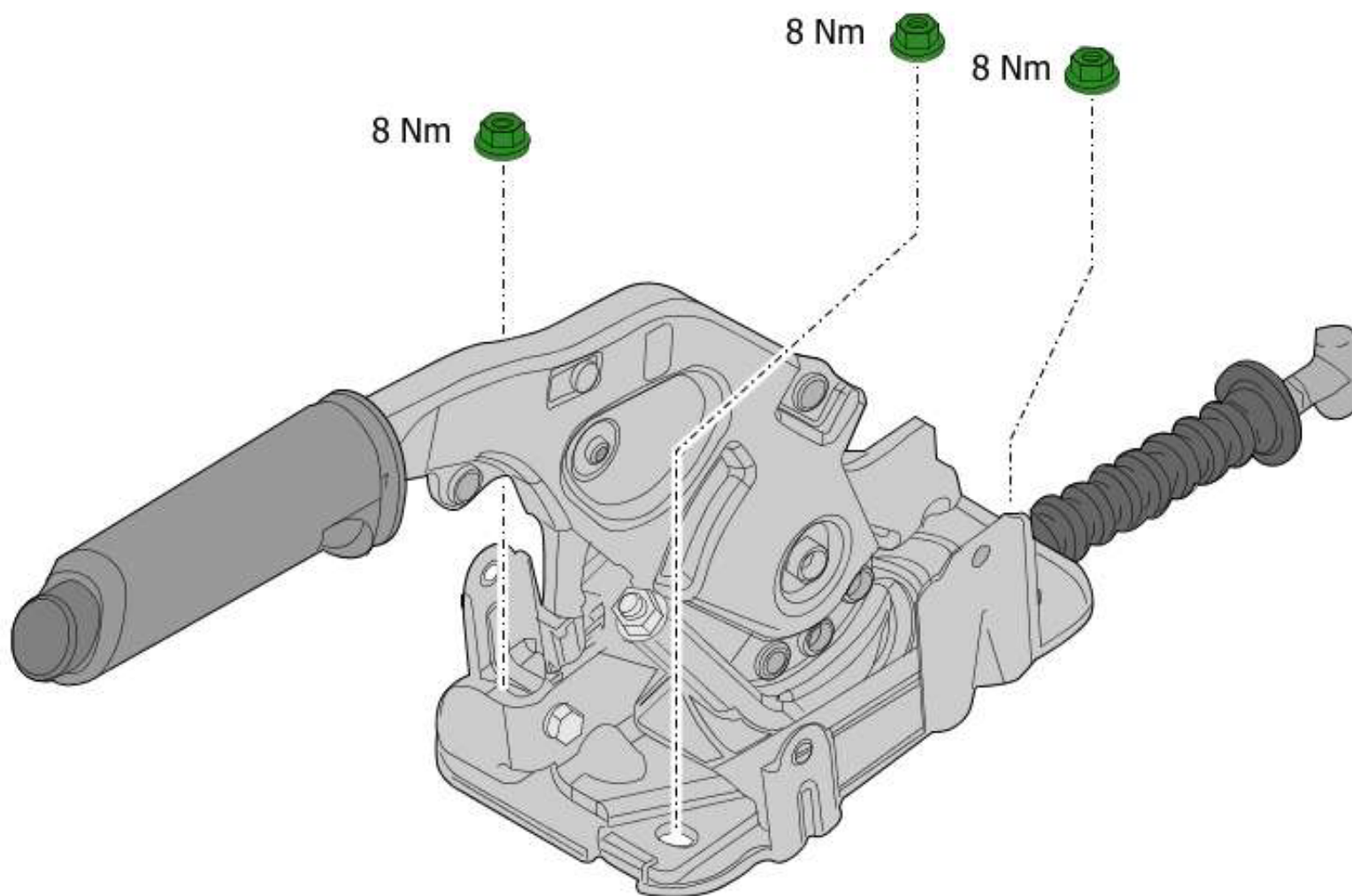


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Handbrake lever



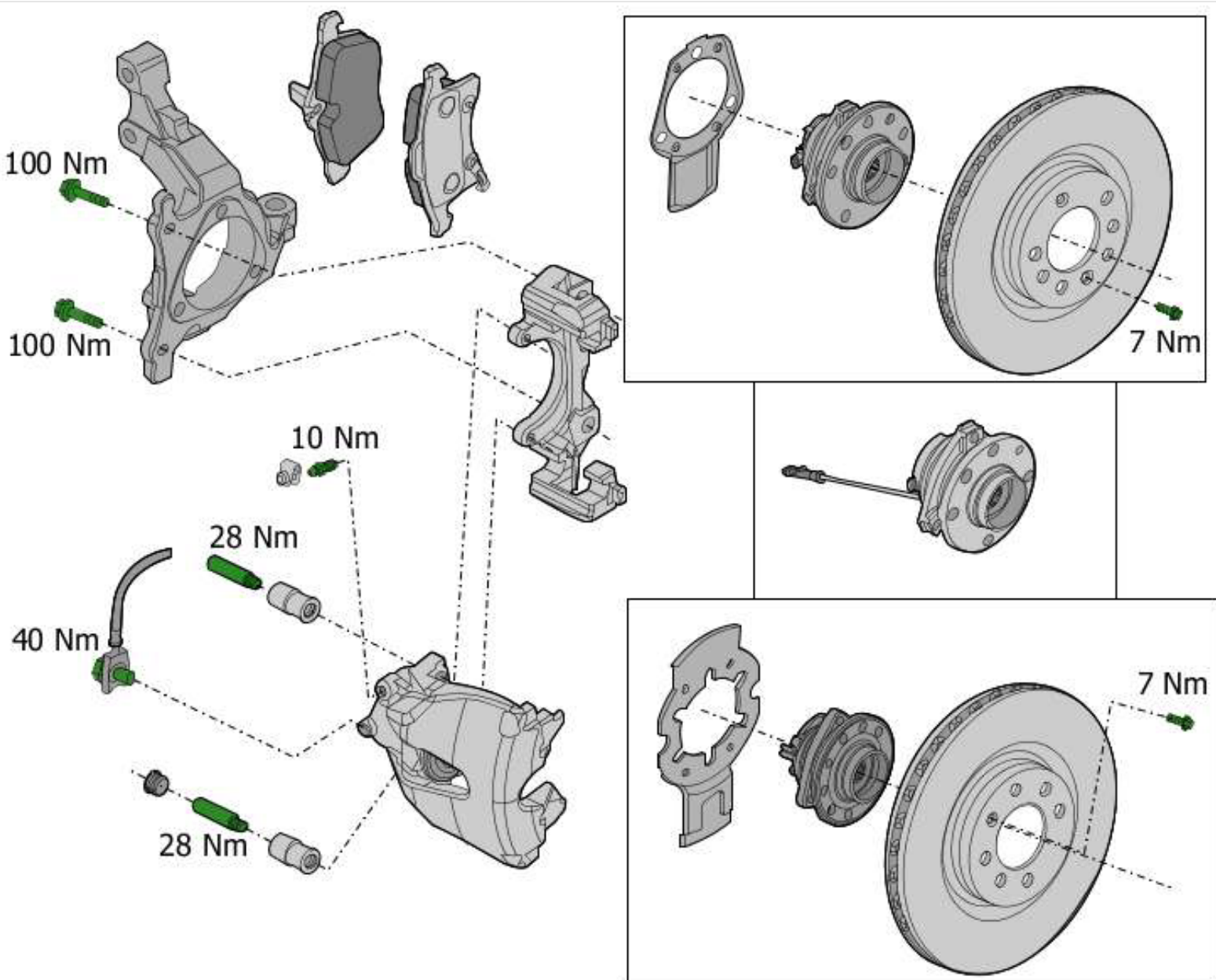
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Brake, components, front, exploded view



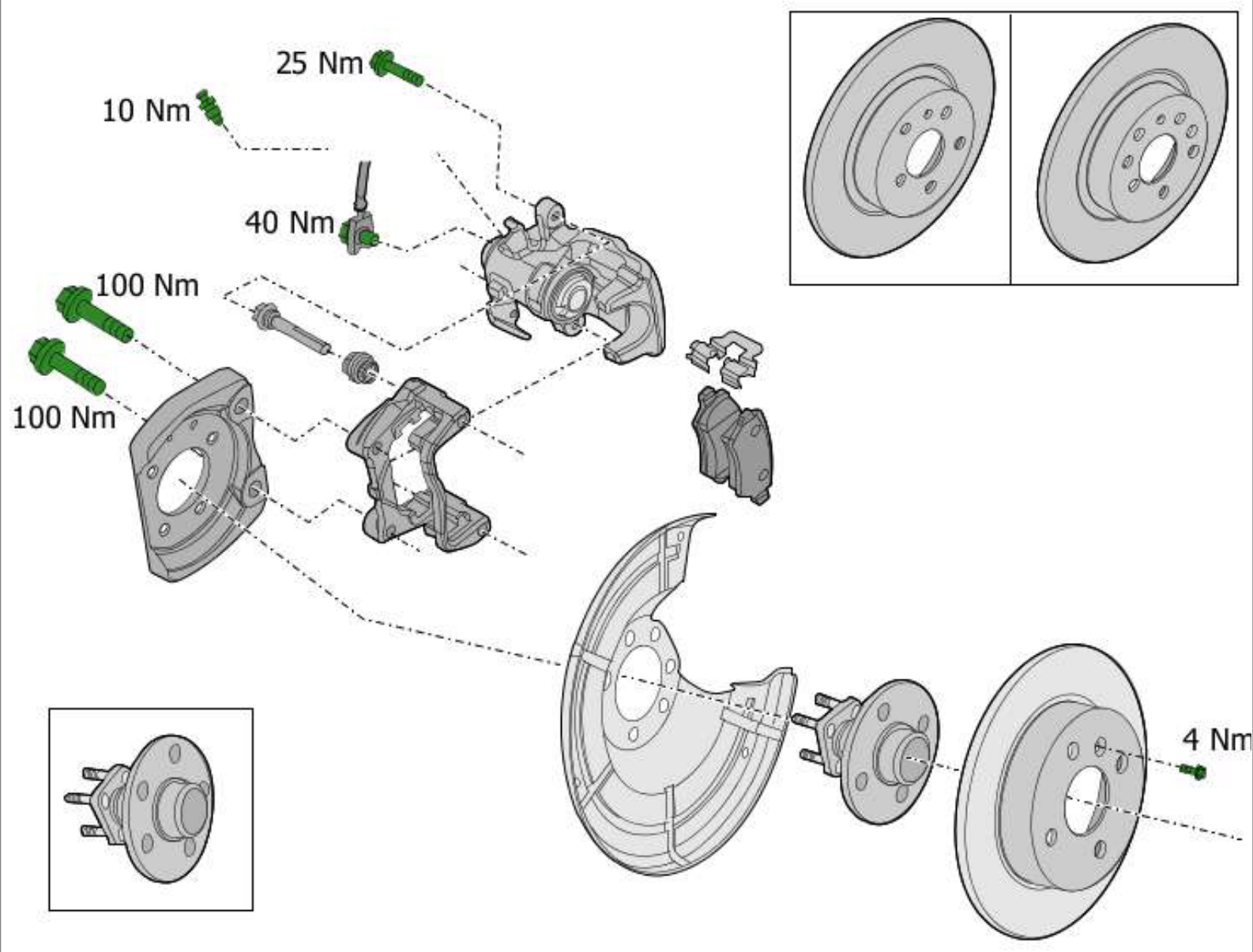
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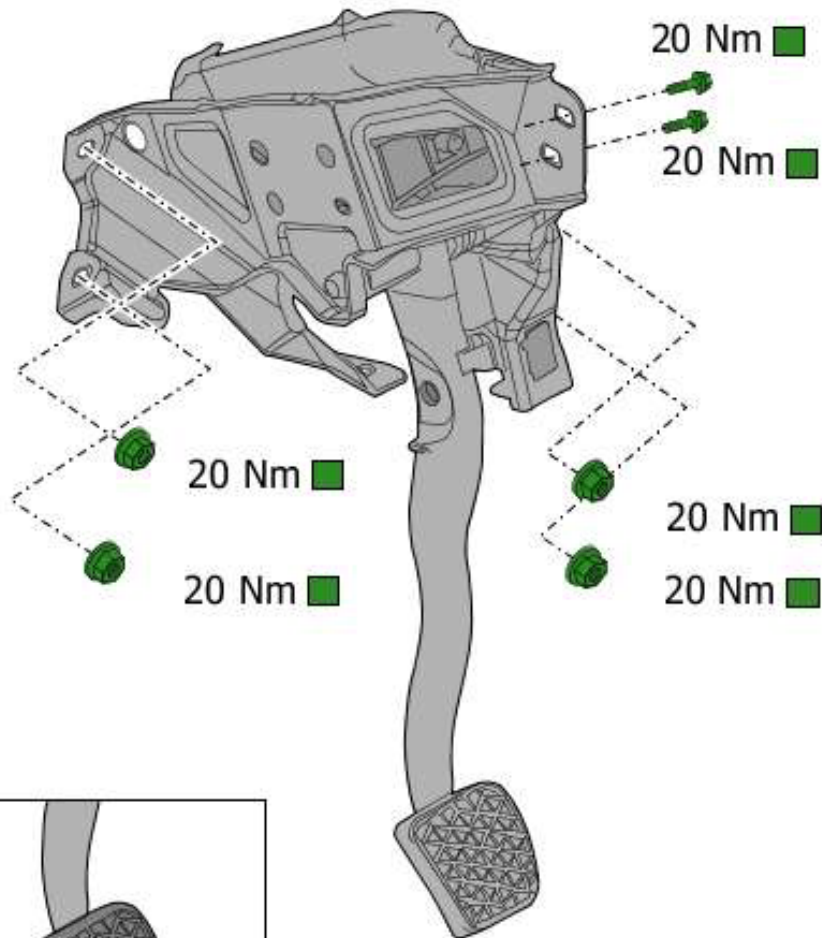
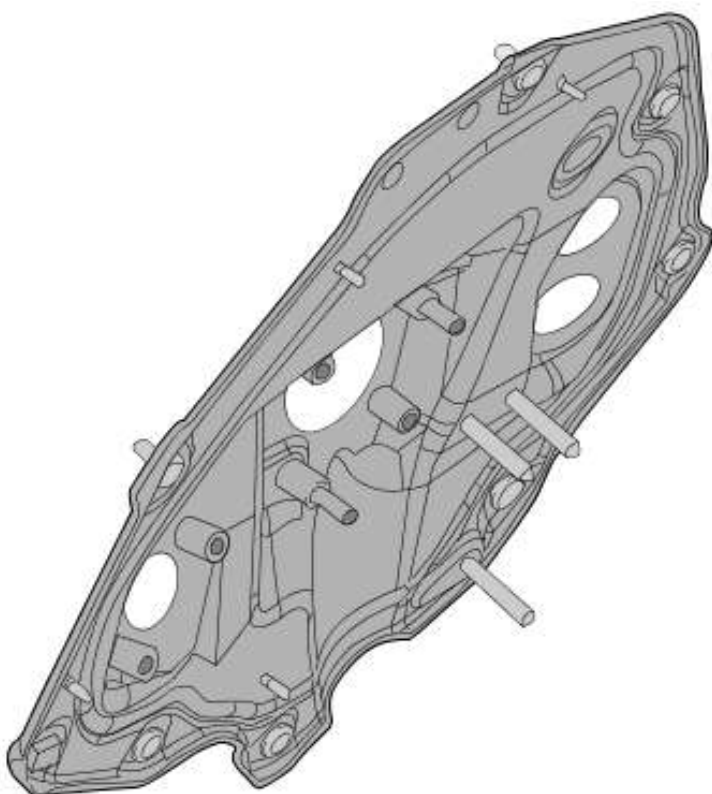
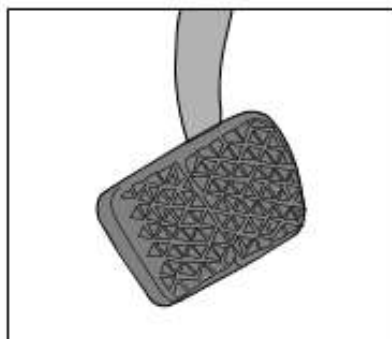
Brake, components, rear, exploded view



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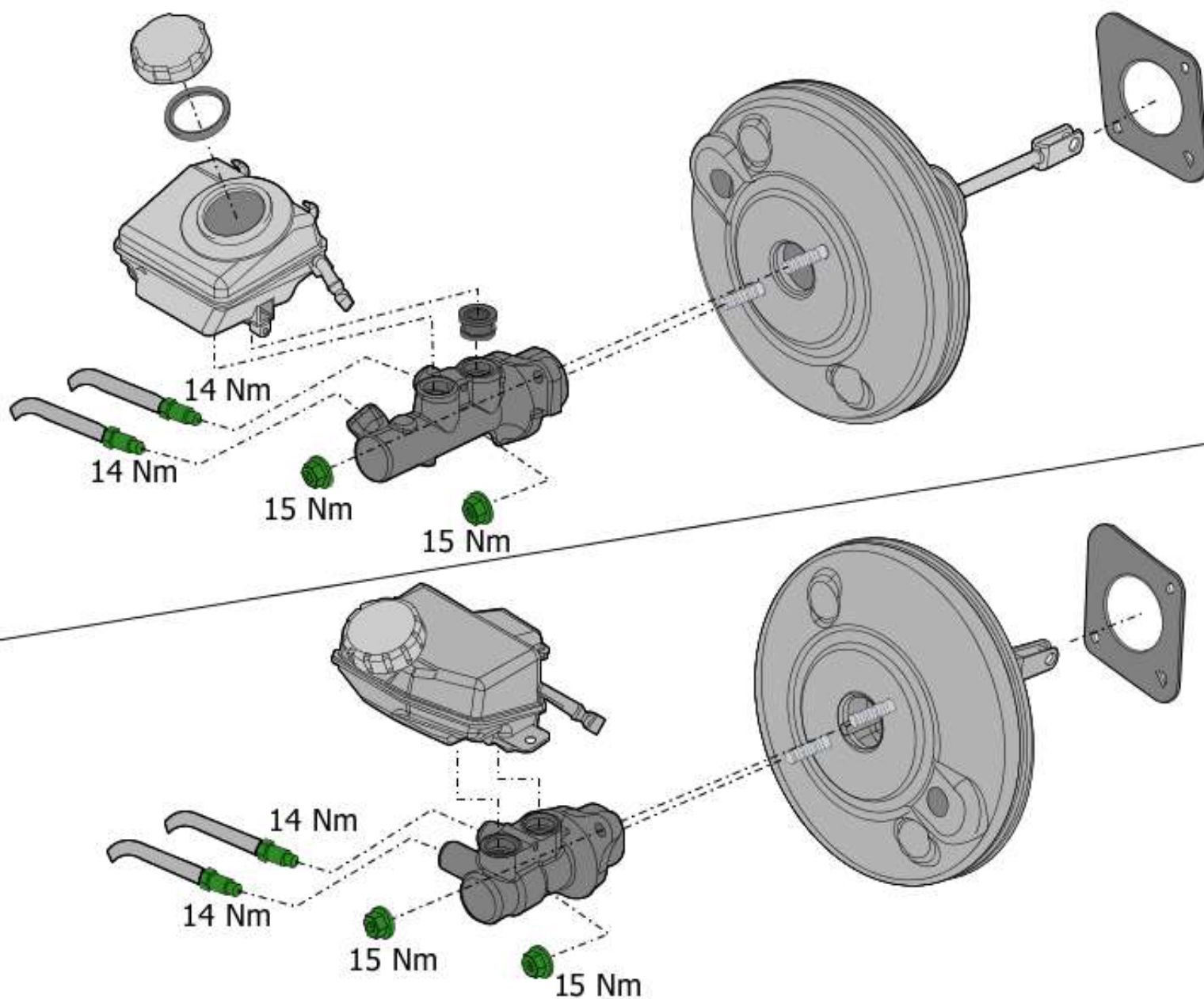
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**Brake pedal (left-hand drive)** Renovar tornillos/tuercas

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**Master cylinder**



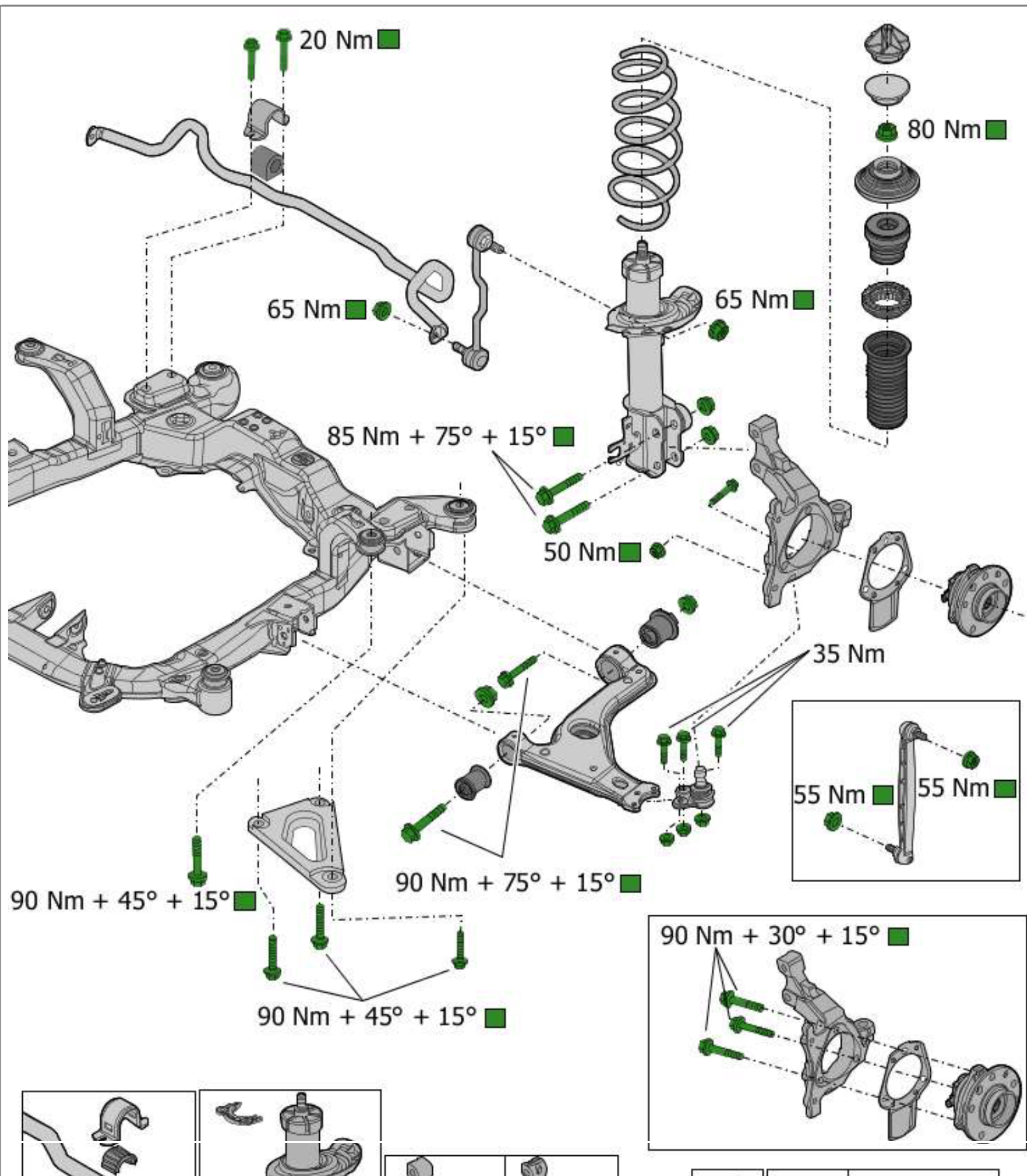
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Suspension, front, exploded view

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Suspension, rear, exploded view

