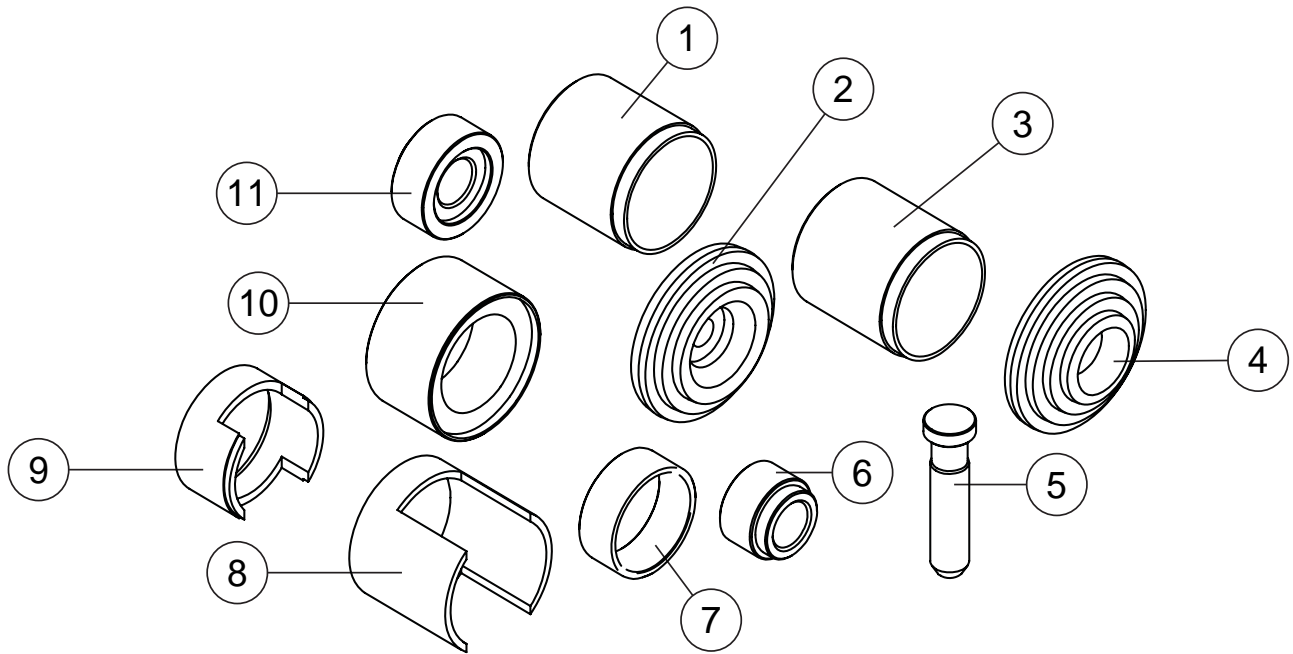


BMW Ball Joint Adapter Kit



Legend

Item No.	Part No.	Description	Item No.	Part No.	Description	Item No.	Part No.	Description
1	554413	Adapter	5	314392	Adapter	9	554582	Adapter
2	305228	Adapter	6	313968	Adapter	10	554417	Adapter
3	38354	Adapter	7	554422	Adapter	11	554613	Adapter
4	305227	Adapter	8	554581	Adapter			

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6259-1 BMW BALL JOINT ADAPTER APPLICATION CHART

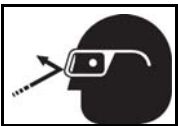
Make	Model	Year	Position	Location	OTC Removal Tools	OTC Installation Tools
BMW	318i	1992-1998	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	318i	1992-1998	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	318ic	1994-1997	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	318ic	1994-1997	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	318is	1992-1997	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	318is	1992-1997	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	318ti	1995-1999	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	318ti	1995-1999	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	323is	1998-1999	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	323is	1998-1999	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	328i	1996-1998	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	328i	1996-1998	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	328is	1996-1999	Lower outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	328is	1996-1999	Lower inner	Front	313968, 554413	305227 & 554422, 554417
	M3	1996-1999	Lower-outer	Front	305228 & 554581, 554613, 314392	305228 & 554582, 38354, 314392
	M3	1996-1999	Lower-inner	Front	313968, 554413	305227 & 554422, 554417
	X5	2007-2008	Lower	Front	Service to be determined	

Safety Precautions



CAUTION: To prevent personal injury:

- Wear protective eyewear that meets the requirements of ANSI Z87.1 and OSHA.
- Before performing any repairs on a vehicle, block all wheels to prevent movement.
- Check the final alignment of tooling and components before using the C-frame press to exert pressure.



Component: Lower-Front-Inner

Application:

BMW 3 Series (318, 323, 328, M3);(E36 Platform) 1999 and prior

REMOVAL:

1. Remove the dust boot.
2. Position 313968 on the stem of the ball joint.
3. Position 554413 over the ball joint.
4. Position C-Frame.
5. Turn the forcing screw until it meets the ball joint. Check the alignment of all components.
6. Tighten the forcing screw until the ball joint is removed.

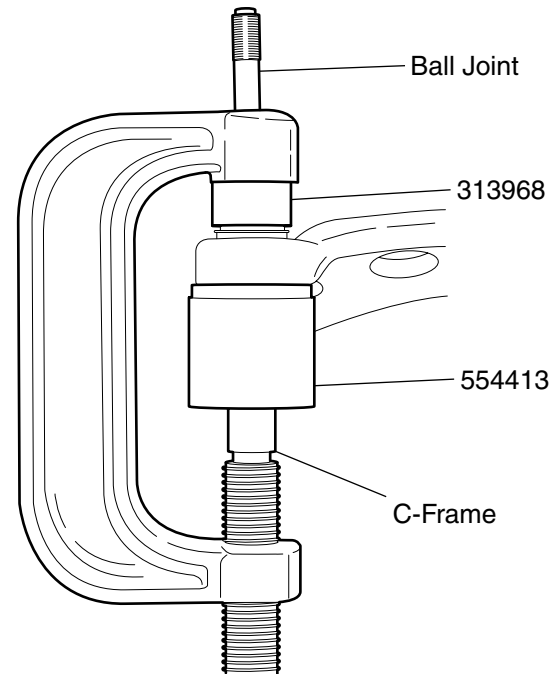


Figure 1. Ball Joint Removal

INSTALLATION:

1. Clean the control arm ball joint bore.
2. Insert the new ball joint as straight as possible into the control arm.
3. Position 305227 and 554422 on the ball joint as shown in Figure 2.
4. Position C-Frame and 554417 and tighten the forcing screw.
5. Check the alignment of all the components and continue tightening the forcing screw until the ball joint is firmly seated.

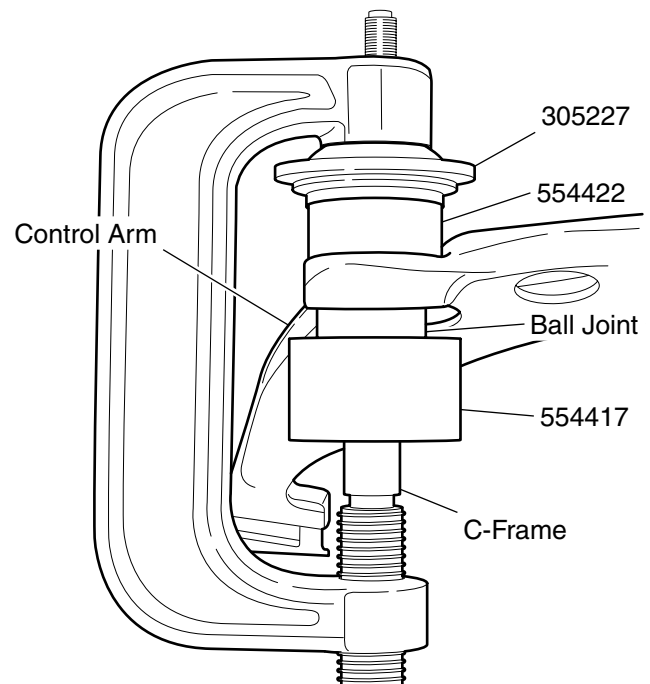


Figure 2. Ball Joint Installation

Component: Lower-Front-Outer

Application:

BMW 3 Series (318, 323, 328, M3);(E36 Platform) 1999 and prior

REMOVAL:

1. Remove the dust boot.
2. Position 554613 on the stem of the ball joint.
3. Position 554581 and 305228 over the ball joint.
4. Position C-Frame and 314392.
5. Turn the forcing screw until it meets the ball joint. Check the alignment of all components.
6. Tighten the forcing screw until the ball joint is removed.

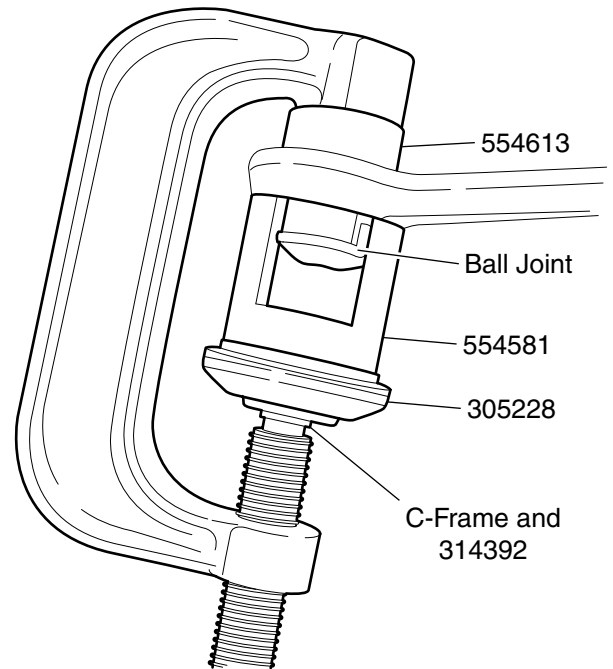


Figure 1. Ball Joint Removal

INSTALLATION:

1. Clean the control arm ball joint bore.
2. Insert the new ball joint as straight as possible into the control arm.
3. Position 38354 on the ball joint as shown in Figure 2.
4. Position C-Frame, 314392, 554582, and 305228 and tighten the forcing screw.
5. Check the alignment of all the components and continue tightening the forcing screw until the ball joint is firmly seated.

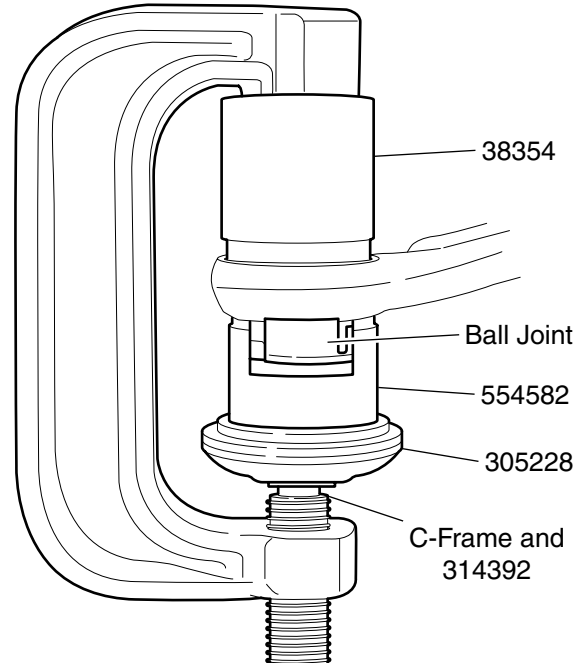


Figure 2. Ball Joint Installation

BRAKE ANCHOR PIN REMOVAL:

1. Remove all lock ring retainers from the brake anchor pins.
2. Position the C-Frame over the brake spider as shown in Figure 1.
3. Tighten the forcing screw until the anchor pin is removed.

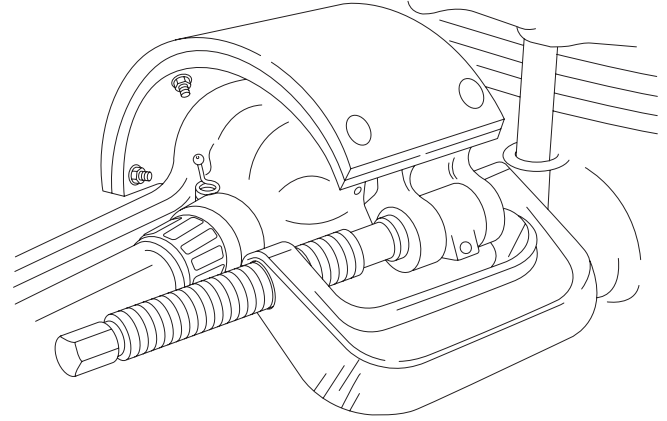


Figure 1. Brake Anchor Pin Removal

U-JOINT DISASSEMBLY AND ASSEMBLY:

The basic C-Frame is used to service the U-Joints on most cars and light trucks. The U-Joints can be serviced either on or off the vehicle.

Disassembly:

1. Remove any external/internal lock rings.
2. Position the C-Frame around the driveshaft yoke. Tighten the forcing screw until the first bearing is removed.
3. Position the C-Frame on the second bearing and tighten the forcing screw until the second bearing is removed.

Assembly:

1. Clean all dirt and oil from the yoke area.
2. Align the new bearing and C-Frame as straight as possible over the yoke. Press the new bearing into the yoke and install the new lock rings.
3. Position the C-Frame and second bearing as straight as possible over the yoke and press the bearing into the yoke and install the new lock rings.

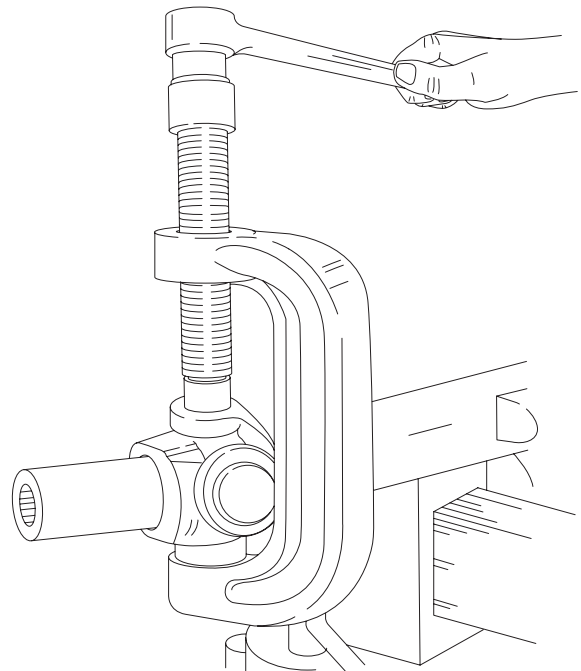


Figure 2. U-Joint Removal and Installation



BALL JOINT QUICK REFERENCE

Make	Model	Year	OEM Kit P/N	Make	Model	Year	OEM Kit P/N
Acura	CL 2.2L	1997	6529-5	Chevrolet	3500 4WD	1996-1999	6539-4
	CL 2.3L	1998-1999	6529-5		Astro 2WD	1985-2005	6539-4
	CL 3.0L	1997-1999	6529-5		Avalanche 1500 2WD/4WD	2002-2008	6539-4
	CL 3.2L	2001-2003	6529-5		Avalanche 2500 2WD/4WD	2002-2006	6539-4
	Integra	1994-2001	6529-5		Blazer 2WD	1982-2005	6539-4
	MDX	2001-2006	6539-1		Camaro	1993-2002	6529-4
	RL 3.5L	1996-2008	6529-5		Caprice	1991-1996	6529-4
	RSX	2002-2006	6529-5		Corvette	1984-2004	6529-4
	TL 2.5L	1996-1999	6529-5		Express 1500	1996-2008	6539-4
	TL 3.2L	1996-2008	6529-5		Express 2500	1996-2008	6539-4
	TSX	2004-2008	6529-5		Express 3500	2003-2008	6539-4
BMW	3 Series (318, 323, 328, M3)	1992-1999	6529-1	G10	1971-1995	6539-4	
Buick	LeSabre	1986-1999	6529-4	G20	1973-1995	6539-4	
	Park Avenue	1991-1997	6529-4	G30	1973-1996	6539-4	
	Rainier	2004-2007	6539-4	Impala	1994-1996	6529-4	
	Roadmaster	1991-1996	6529-4	S-10 2WD	1982-2005	6539-4	
Cadillac	CTS	2003-2008	6529-4	Silverado 1500 2WD/4WD	1999-2007	6539-4	
	DeVille	1996-1999	6529-4	Silverado 1500 HD 2WD/4WD	2001-2007	6539-4	
	Escalade	1999-2007	6539-4	Silverado 2500 & 2500 HD 4WD	1999	6539-4	
	Fleetwood	1991-1996	6529-4	Silverado 2500 2WD	1999-2000	6539-4	
Chevrolet	1500 2WD	1991-2000	6539-4	Silverado 2500 2WD/4WD	2001-2007	6539-4	
	1500 4WD	1996-1999	6539-4	Silverado 2500 4WD	2000	6539-4	
	2500 2WD	1991-2000	6539-4	Silverado 2500 HD 2WD/4WD	2001-2008	6539-4	
	2500 4WD	1996-1999	6539-4	Silverado 3500 2WD/4WD	2001-2008	6539-4	
	30 Motorhome With IFS	1973-1997	6539-4	SSR	2003-2006	6539-4	
	30 Step Van With IFS	1973-1997	6539-4	Suburban 1500 2WD	1992-1999	6539-4	
	3500 2WD With IFS	1991-2000	6539-4	Suburban 1500 2WD/4WD	2000-2008	6539-4	



BALL JOINT QUICK REFERENCE

Make	Model	Year	OEM Kit P/N	Make	Model	Year	OEM Kit P/N
Chevrolet	Suburban 1500 4WD	1996-1999	6539-4	Dodge	Dakota 2WD/4WD	2005-2009	6539-2
	Suburban 2500 2WD	1992-2000	6539-4		Dakota 4x4	1987-2004	6539-2
	Suburban 2500 2WD/4WD	2001-2008	6539-4		Durango 4x2/4x4	2004-2008	6539-2
	Suburban 2500 4WD	1996-2000	6539-4		Durango 4x4	1998-2003	6539-2
	Tahoe 2WD	1995-2000	6539-4		Grand Caravan	1988-2007	6539-2
	Tahoe 2WD/4WD	2001-2008	6539-4		Magnum RWD	2005-2008	6529-2
	Tahoe 4WD	1996-2000	6539-4		Neon	1995-2005	6529-2
	Trailblazer 2WD/4WD	2002-2008	6539-4		Nitro 4x2/4x4	2007-2009	6539-2
	Trailblazer EXT 2WD/4WD	2003-2007	6539-4		Ram 1500 4x2	1994-1999	6539-2
Chrysler	300C RWD	2005-2008	6529-2	Ram 1500 4x2/4x4	2000-2008	6539-2	
	Aspen 2WD/4WD	2007-2008	6539-2	Ram 2500 4x2	1994-2008	6539-2	
	Cirrus	1995-2000	6529-2	Ram 2500 4x4	1994-2008	6539-2	
	Grand Voyager	2000	6539-2	Ram 3500 4x2	1994-2008	6539-2	
	Pacifica FWD/AWD	2005-2008	6539-2	Ram 3500 4x4	1996-2008	6539-2	
	PT Cruiser	2001-2008	6529-2	Ram SRT-10	2004-2006	6539-2	
	Sebring Convertible	1996-2008	6529-2	Ram Van 1500	1995-2003	6539-2	
	Sebring Coupe	2001-2005	6529-2	Ram Van 2500	1995-2003	6539-2	
	Sebring Sedan	1996-2008	6529-2	Ram Van 3500	1995-2003	6539-2	
	Town & Country	1990-2008	6539-2	Ram Van B100	1971-1980	6539-2	
	Voyager	2000-2003	6539-2	Ram Van B150	1981-1994	6539-2	
	Dodge	Avenger	2008	6529-2	Ram Van B200	1971-1980	6539-2
Caliber		2007-2008	6529-2	Ram Van B250	1981-1994	6539-2	
Caravan		1984-2006	6539-2	Ram Van B300	1971-1980	6539-2	
Challenger		2008	6529-2	Ram Van B350	1981-1994	6539-2	
Charger RWD		2005-2008	6529-2	Sprinter 2500	2003-2008	6539-2	
Colt		1984-1994	6539-2	Sprinter 3500	2003-2008	6539-2	
Dakota 2WD		1987-1996	6539-2	Stratus	1995-2008	6529-2	



BALL JOINT QUICK REFERENCE

Make	Model	Year	OEM Kit P/N	Make	Model	Year	OEM Kit P/N	
Eagle	2000 GTX (Canada only)	1991-1993	6529-2	Ford	F-350 2WD	1987-1997	6539-3	
	Summit	1991-1996	6529-2		F-350 4WD	1992-1997	6539-3	
	Talon	1990-1994	6529-2		Fusion	2006-2008	6529-3	
Ford	Aerostar 2WD	1986-1997	6539-3		Mustang	1994-2008	6529-3	
	Aerostar 4WD	1986-1997	6539-3		Probe	1989-1997	6529-3	
	Bronco	1980-1996	6539-3		Ranger 2WD	1989-2008	6539-3	
	Bronco II	1984-1990	6539-3		Ranger 2WD/4WD	1998-2008	6539-3	
	Crown Victoria	1995-2008	6529-3		Ranger 4WD	1983-1997	6539-3	
	E-150	1992-2008	6539-3		Taurus	1996-2007	6529-3	
	E-250, E-350, E-450	1996-2008	6539-3		Thunderbird	1989-1997	6529-3	
	Escape 2WD/4WD	2001-2008	6539-3		GMC	1500 2WD	1991-2000	6539-4
	Excursion 2WD	2000-2005	6539-3			1500 4WD	1996-1999	6539-4
	Excursion 4WD	2000-2005	6539-3	2500 2WD		1991-2000	6539-4	
	Expedition 2WD/4WD	1997-2008	6539-3	2500 4WD		1996-2000	6539-4	
	Explorer 2WD/4WD	1995-2008	6539-3	3500 2WD With IFS		1991-2000	6539-4	
	Explorer 4WD	1991-1994	6539-3	3500 4WD		1996-2000	6539-4	
	Explorer Sport Trac	2007-2008	6539-3	3500 Motorhome With IFS		1973-1997	6539-4	
	Explorer/Sport/Sport Trac 2WD/4WD	2001-2005	6539-3	3500 Step Van With IFS		1973-1997	6539-4	
	F-150 2WD	1987-1996	6539-3	Envoy 2WD/4WD		2002-2008	6539-4	
	F-150 2WD/4WD	1997-2008	6539-3	G1500		1971-1995	6539-4	
	F-150 4WD	1980-1996	6539-3	G2500		1973-1995	6539-4	
	F-150 Heritage and Lightning	2004	6539-3	G3500		1973-1996	6539-4	
	F-250 2WD	1987-1997	6539-3	Jimmy 2WD		1982-2002	6539-4	
F-250 4WD	1980-1997	6539-3	S-15 Sonoma 2WD	1982-2004		6539-4		
F-250 4WD (Under 8500 lb. GVW)	1997-1999	6539-3	Safari 2WD	1985-2005		6539-4		
F-250 Super Duty 2WD With Twin I-Beam Axle	1999-2008	6539-3	Savana 1500	1996-2008		6539-4		
F-250, F-350, F-450, F-550 Super Duty 2WD/4WD	1999-2008	6539-3	Savana 2500	1996-2008		6539-4		



BALL JOINT QUICK REFERENCE

Make	Model	Year	OEM Kit P/N	Make	Model	Year	OEM Kit P/N	
GMC	Savana 3500	1996-2008	6539-4	Honda	Civic	1992-2000	6529-5	
	Sierra 1500 2WD/4WD	1999-2007	6539-4		Civic Del Sol	1993-1997	6529-5	
	Sierra 1500 4WD	1999-2007	6539-4		Civic Del Sol	1993-1997	6529-5	
	Sierra 1500 HD 2WD/4WD	2000-2007	6539-4		Civic Hatchback	2002-2005	6529-5	
	Sierra 2500 2WD/4WD	1999-2004	6539-4		Civic Hatchback Hybrid	2003-2005	6529-5	
	Sierra 2500 HD 2WD/4WD	2001-2008	6539-4		Civic Sedan & Coupe	2001-2005	6529-5	
	Sierra 3500 2WD/4WD	2001-2008	6539-4		Civic Sedan & Coupe Hybrid	2003-2005	6529-5	
	Sierra Denali	2002-2007	6539-4		CR-V	1997-2001	6539-1	
	Suburban 1500 2WD	1992-1999	6539-4		CR-V	1997-2001	6539-1	
	Suburban 1500 4WD	1996-1999	6539-4		CR-V	2002-2006	6539-1	
	Suburban 2500 2WD	1992-1999	6539-4		Element	2003-2008	6539-1	
	Suburban 2500 4WD	1996-1999	6539-4		Odyssey	1994-1998	6539-1	
	Yukon	2001-2007	6539-4		Odyssey	1995-1998	6539-1	
	Yukon 2WD	1995-2000	6539-4		Odyssey	1999-2006	6539-1	
	Yukon 4WD	1996-2000	6539-4		Pilot	2003-2006	6539-1	
	Yukon Denali	1999-2000	6539-4		Prelude	1992-1999	6529-5	
	Yukon Denali & Denali XL	2001-2005	6539-4		Hummer	H2	2003-2008	6539-4
	Yukon XL 1500	2000-2007	6539-4		Hyundai	Accent	1995-2005	6529-6
	Yukon XL 2500	2000-2008	6539-4			Elantra	1996-2006	6529-6
				SantaFe		2001-2008	6539-1	
Honda	Accord	1990-1997	6529-5		Sonata	1995-1998	6529-6	
	Accord	1994-1997	6529-5		Tiburon	1997-2008	6529-6	
	Accord Hybrid	2005-2006	6529-5	Infiniti	G20	1991-1996	6529-6	
	Accord Hybrid	2005-2006	6529-5		I30	1996-2001	6529-6	
	Accord Sedan & Coupe	1998-2002	6529-5		I35	2002-2004	6529-6	
	Accord Sedan & Coupe	1998-2008	6529-5		QX56	2004-2006	6539-1	
	Accord Sedan & Coupe	2003-2008	6529-5					
	Civic	1992-2000	6529-5	Isuzu	Ascender 2WD/4WD	2003-2008	6539-1	



BALL JOINT QUICK REFERENCE

Make	Model	Year	OEM Kit P/N	Make	Model	Year	OEM Kit P/N
Isuzu	Hombre 2WD	1996-2000	6539-1	Mazda	B-2300 4WD	1995-1997	6539-3
	Oasis	1996-1999	6539-1		B-2300 4WD With Torsion Bar Suspension	2001	6539-3
Jeep	Cherokee	1990-2001	6539-2		B-2500 2WD With Coil Spring Suspension	1998-2001	6539-3
	Cherokee (RHD)	1996-1998	6539-2		B-2500 2WD/4WD With Torsion Bar Suspension	1998-2001	6539-3
	Commander 2WD/4WD	2006-2009	6539-2		B-2500 4WD With Torsion Bar Suspension	1998-2001	6539-3
	Compass 2WD	2007-2008	6539-2		B-3000 2WD	1994-1996	6539-3
	Compass 4WD	2007-2008	6539-2		B-3000 2WD With Coil Spring Suspension	1998-2004	6539-3
	Grand Cherokee	1993-2004	6539-2		B-3000 2WD With Torsion Bar Suspension	1998-2001	6539-3
	Grand Cherokee 2WD/4WD	2005-2009	6539-2		B-3000 2WD/4WD With Torsion Bar Suspension	1998-2007	6539-3
	Grand Wagoneer	1993-1994	6539-2		B-3000 4WD	1994-1996	6539-3
	Liberty 2WD/4WD	2002-2009	6539-2	B-3000 4WD With Torsion Bar Suspension	1998-2001	6539-3	
	Wrangler	1987-2008	6539-2	B-4000 2WD	1994-1997	6539-3	
Kia	Spectra	2005-2008	6529-6	B-4000 2WD	1994-2004	6539-3	
	Spectra 5	2006-2008	6529-6	B-4000 2WD/4WD With Torsion Bar Suspension	1998-2008	6539-3	
Lincoln	Aviator 2WD/4WD	2003-2005	6539-3	B-4000 4WD	1994-2001	6539-3	
	Blackwood	2002	6539-3	MX-6	1988-1997	6529-3	
	Continental	1995-2002	6529-3	Navajo 2WD	1992-1994	6539-3	
	Mark VIII	1993-1998	6529-3	Navajo 4WD	1991-1994	6539-3	
	MKZ	2007-2008	6529-3	Mercury	Cougar	1989-1997	6529-3
	Navigator 2WD/4WD	1998-2006	6539-3		Grand Marquis	1995-2008	6529-3
	Town Car	1995-2008	6529-3		Marauder	2003-2004	6529-3
	Zephyr	2006	6529-3		Mariner 2WD/4WD	2005-2008	6539-3
Mazda	626	1983-1997	6529-3		Milan	2006-2008	6529-3
	B-2300 2WD	1994-1997	6539-3		Mountaineer	1997-2008	6539-3
	B-2300 2WD	2001-2004	6539-3		Sable	1996-2005	6529-3
	B-2300 2WD/4WD	2001-2004	6539-3		Tribute 2WD/4WD	2008	6539-3
	B-2300 2WD/4WD	2005-2008	6539-3	Tribute 2WD/4WD	2001-2006	6539-3	



BALL JOINT QUICK REFERENCE

Make	Model	Year	OEM Kit P/N	Make	Model	Year	OEM Kit P/N
Mitsubishi	Eclipse	1990-2005	6529-2	Pontiac	Bonneville	1987-1999	6529-4
	Galant	1985-2008	6529-2		Firebird	1993-2002	6529-4
	Mighty Max	1983-1996	6539-2	Saab	9-7x	2005-2008	6529-6
	Raider	2006-2009	6539-2	Toyota	4-Runner	1996-2002	6539-1
Nissan	200SX	1995-1998	6529-6		Echo	2000-2005	6529-6
	240SX	1994-1998	6529-6		Sequoia	2001-2008	6539-1
	300ZX	1990-1996	6529-6		Tacoma	2005-2008	6539-1
	Altima	1993-2001	6529-6		Tacoma 4WD	1995-2004	6539-1
	Armada	2005-2008	6539-1		Tacoma Prerunner 2WD	1995-2004	6539-1
	D21 Pickup 2WD	1991-1997	6539-1		Tundra	2000-2006	6539-1
	Frontier	1998-2008	6539-1				
	Maxima	1995-2003	6529-6				
	Pathfinder	2005-2008	6539-1				
	Sentra	1991-2006	6529-6				
	Titan	2004-2008	6539-1				
	Versa	2007-2008	6529-6				
	Xterra	2000-2008	6539-1				
	Oldsmobile	88	1985-1999	6529-4			
98		1985-1996	6529-4				
Bravada 2WD/4WD		2002-2004	6539-4				
LSS		1996-1999	6529-4				
Regency		1997-1998	6529-4				
Plymouth	Breeze	1995-2000	6529-2				
	Grand Voyager	1988-2000	6539-2				
	Laser	1990-1994	6529-2				
	Neon	1995-2001	6529-2				
	Voyager	1984-2003	6539-2				