A MotorHome MAGAZINE SPECIAL

2006 GUIDE TO DINGHY TOWING

- Gear To Go
- Chassis Choices
- Tips For Towing
- Complete Dinghy Roundup

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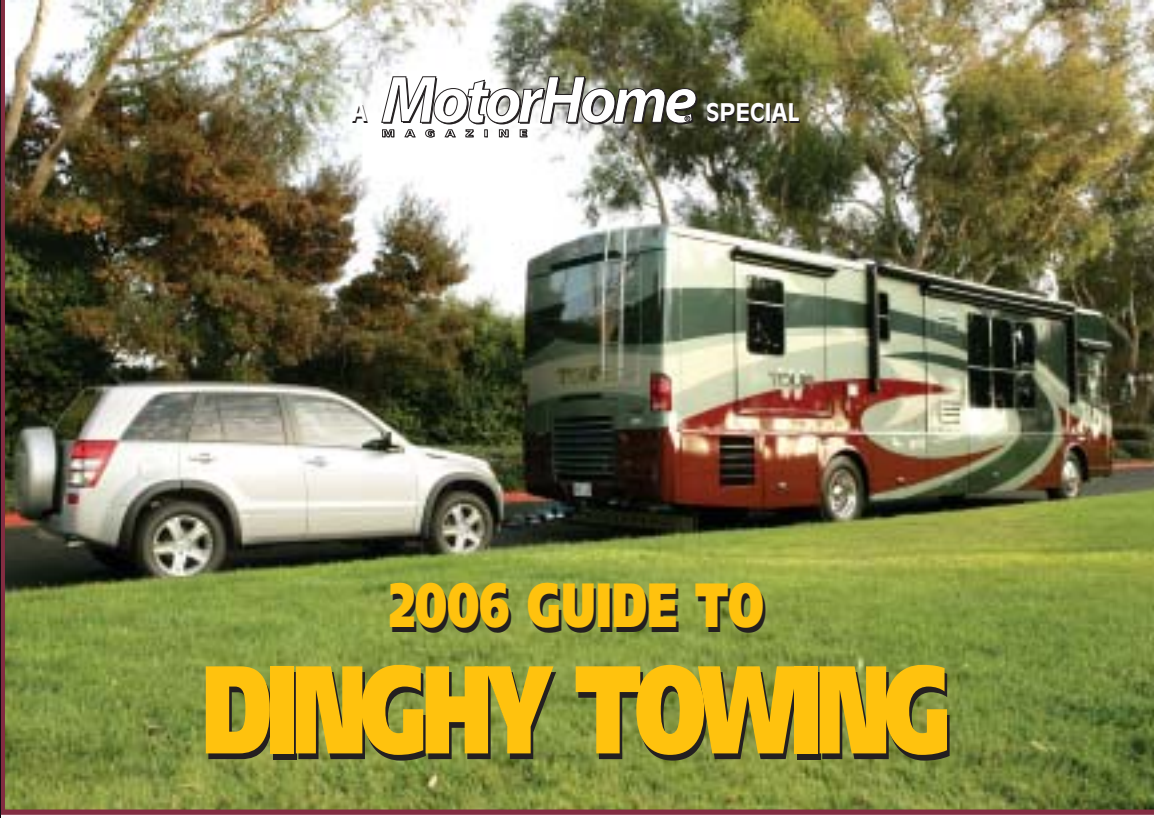

2006 GUIDE TO DINGHY TOWING

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THINGS TO KNOW *BEFORE* YOU TOW

The right equipment adds safety, simplicity and convenience

LAWRENCE WHEELER

PRE-DEPARTURE CHECKLIST SHOULD ALWAYS INCLUDE A TEST OF DINGHY AND COACH BRAKE/TAILLIGHTS ONCE EVERYTHING IS CONNECTED.

It seems the more people use their coaches, the more advantages they find to having an auxiliary vehicle.

Families can go sightseeing and leave the motorhome at a base camp. Shopping trips and visiting friends' homes no longer require breaking camp and lumbering into town, traveling down narrow streets and looking for an extra-large parking space. And, upon return, there's no need to wheel the rig back into place, drag out the lawn chairs and barbecue grill and replay the whole process of leveling and hooking up.

Additionally, the dinghy can stow gear securely when motorhome storage is filled (within weight restrictions), and there is the security of having a spare set of wheels in the event of an emergency.

However, it isn't for free; towing a dinghy will affect the acceleration, fuel economy and braking of any motorhome, to some degree. That said, proper selection of a dinghy and towing equipment will enable you to safely and conveniently enjoy the benefits of auxiliary transportation.

The Selection Process

The first and essential step in selecting a dinghy vehicle is to make sure it is approved by its manufacturer for flat towing (see "Complete

Dinghy Roundup," page 20), unless a towing accessory (such as a transmission lube pump) is available for that specific model as an aftermarket add-on, or towing on a dolly is planned. Buyers should confirm flat-towability in the vehicle owner's manual before the purchase is finalized.

THE TOW BAR ATTACHES TO DINGHY QUICKLY AND EASILY WITH A PAIR OF HITCH PINS; TELESCOPING BARS FURTHER EASE THE HOOKUP.

An economical four-passenger compact car can double as a family's second car when not traveling, but even a larger vehicle can be towed if luxury models are more your style, providing its weight is within the towing limit of your chassis (refer to "Chassis Choices," page 11). Backcountry enthusiasts may prefer a four-wheel-drive (4WD) dinghy. A seven-passenger SUV with a roof rack can take a group of anglers, all their gear and a boat into places no motorhome could ever reach.

When selecting a dinghy, first determine the maximum towing limit of your motorhome and then decide what vehicles fall within that limit. Towing limits aren't the only factor to consider, but they help to eliminate many choices based on weight alone. The weight rating of the motorhome's hitch receiver is another concern, although most are adequate, and receivers can be upgraded.

However, an upgraded hitch receiver cannot increase the specified towing limit set by the coach manufacturer.

Using the chassis weight formulas included in "Chassis Choices," you can calculate the maximum weight of a loaded dinghy your motorhome can safely tow and still protect the coach warranty.

WHILE DRIVING YOUR DINGHY, THE STOWED TOW BAR REMAINS ON THE COACH, TUCKED OUT OF HARM'S WAY.

Flat-Towing

The vehicles most frequently used as dinghies can be flat-towed (four wheels on the ground) without any drivetrain modification.

Most flat-towed dinghies track so well that many motorhome drivers have commented, "You don't even know it's there." Front-wheel-drive (FWD) vehicles with manual transmissions and most 4WD

SIMPLE BALL-COUPLER TOW BAR IS IDEAL FOR VEHICLES LIKE WRANGLER, BRONCO.

ALL NEW IN 2006

TOWING THE GRAND VITARA

Suzuki injects style, luxury and power into its popular dinghy vehicle

During the '70s, a popular television series revolved around a character that, as a voice-over intoned during opening credits, could be rebuilt "better ... stronger ... faster." Whether designers and engineers from American Suzuki Motor Corporation ever watched the show isn't known — but they followed a similar dictate while completely overhauling the company's Grand Vitara.

Actually, Suzuki's designers would probably slip "bigger" into the mix, as well. Virtually everything about the all-new 2006 Grand Vitara eclipses earlier editions, from overall length — it's nearly a foot longer than an '05, with most of that committed to a longer, 103.9-inch wheelbase — to cargo-carrying capacity. With the 60/40 rear seatbacks folded down, the newest Grand Vitara offers up nearly 70 cubic feet of storage.

It's bigger where it counts, as well. A 2.7-liter, 24-valve DOHC V6 motivates the ruggedly redesigned compact SUV, pumping out 185 hp and 184 lb-ft of torque. The extra "grunt," combined with new underpinnings that include a unibody chassis with built-in ladder frame and four-wheel independent suspension, gives the new Suzuki a whopping 3,000-pound tow rating (double that of a '05 Grand Vitara!), should that need ever arise.

With the tow bar on the opposite end, the Grand Vitara is four-wheels-down tow-ready with a simple flip of the transfer case to Neutral (Four-Mode 4WD models). The full-time, Four-Mode system — one of two 4WD options available — lets drivers set the control knob for optimum traction under a variety of conditions. All 4WD models boast an impressive 7.9 inches of ground clearance.

"Bigger" also translates well to the interior, where the 2006 Grand Vitara sports added front and rear legroom and a sculpted headliner that provides for extra headroom. Side-impact door beams are augmented with side-curtain air bags for enhanced safety (the Grand Vitara has six air bags as standard equipment); other safety features include Electronic Stability Program (ESP®) with traction control and ABS.

The 2006 Grand Vitara is offered in one trim level, with three optional equipment packages. A 5-speed electronically controlled automatic transmission is standard on the XSport and Luxury models (optional on Base and Premium models), as is an in-dash, XM-ready, 6-disc CD changer/stereo, (optional on Base model), climate control system, power windows/mirrors/door locks, cruise control — and the best transferable limited warranty (7 years/100,000 miles) available anywhere. See your Suzuki dealer for details. Don't forget, SUVs handle differently from ordinary passenger cars. Avoid sharp turns and abrupt maneuvers. Always wear your seatbelt. For specific details, please read your Owner's Manual for on- and off-road driving tips.

ESP is a registered trademark of DaimlerChrysler AG

SEVEN-DAY WEEKEND? OUR IDEA.

INTRODUCING THE ALL-NEW 2006 SUZUKI GRAND VITARA

STARTING AT $19,594[1]

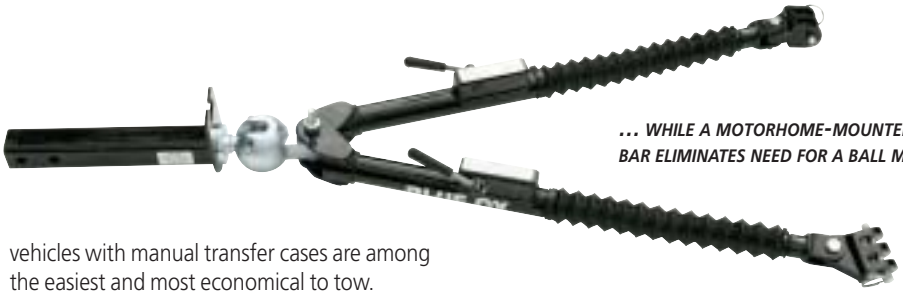
If you view the workplace as just a momentary lull in the action, we have an impressive new way to make tracks outta there. The 2006 Grand Vitara. Completely new from the dirt up, Grand Vitara opens with a standard 2.7L V6. And follows through with available full-time, Four-Mode 4WD and tough construction, including a unibody chassis with a built-in ladder frame for true off-road capability. But once you're inside, we see no need to rough it. There's automatic climate control, 7-speaker CD with changer if you choose, and an available SmartPass™ Keyless System so you can open the door and start up without using the key. And since safety is in our DNA, you get front-side and side-curtain airbags, our Electronic Stability Program and a long list of safety features. With America's #1 Warranty[2], including 24-hr. Roadside Assistance, you also get peace of mind for seven years or 100,000 miles. The new Grand Vitara. Hey, if we ruled the world? Every day would be Saturday.

AMERICA'S #1 WARRANTY
100,000 MILES • NO DEDUCTIBLE • FULLY TRANSFERABLE

SUZUKI
Way of Life!

(1) 2006 Grand Vitara 4WD with Luxury Package MSRP as shown $24,994. MSRP includes freight, but excludes govt. fees and dealer charges. (2) All new Suzukis come standard with a 100,000 mile/7-year powertrain limited warranty. See dealer for complete warranty details. SUVs handle differently than ordinary passenger cars. Federal law cautions to avoid sharp turns and abrupt maneuvers. Always wearyour seatbelt. For specific details, please read your Owner's Manual. © American Suzuki Motor Corporation 2005. Suzuki, the "S" logo, and Suzuki model names are Suzuki trademarks or ®.

A BALL COUPLER ON A TOW BAR LOOKS SIMILAR TO THAT ON A TYPICAL TRAILER A-FRAME ...



... WHILE A MOTORHOME-MOUNTED TOW BAR ELIMINATES NEED FOR A BALL MOUNT.

vehicles with manual transfer cases are among the easiest and most economical to tow.

Some auto manufacturers even produce FWD vehicles equipped with automatic transmissions that are flat-towable. They are popular because the expense of towing equipment is minimal, and readying for towing involves fewer steps. Many popular vehicles have these desirable flat-tow capabilities. Proper towing will not void the warranty on vehicles endorsed by the manufacturers as flat-towable.

SAFETY CABLES ARE REQUIRED. INSTALLED, THEY MUST BE CROSSED TO CATCH THE TOW BAR IN CASE OF EMERGENCY.

Some vehicles do require special procedures, such as removing certain fuses before towing, or starting the engine every 200 miles to circulate transmission fluid. These practices, while inconvenient, are designed

Before You Tow

Make sure your equipment is rated for the dinghy's weight and that you are not exceeding your motorhome's gross vehicle weight rating (GVWR) or gross combination weight rating (GCWR).

- Confirm hitch height is correct.
- Confirm all hitch bolts and tow-bar and baseplate fasteners are securely tightened.
- Confirm all hitch and wiring connections are engaged and secure; all safety chains or cables are attached; and all locking pins are properly installed.
- Connect brake system and breakaway device.
- Check motorhome and dinghy for proper function of taillights, brakelights and turn signals.
- Check tire pressure of all tires on motorhome and dinghy — including spare tires.
- Make sure the dinghy is set up for towing: steering unlocked; hand brake off; gear selector in position specified by manufacturer; ignition in proper position; lube-pump switch, driveshaft coupler, 4WD transfer case and hubs (if applicable) in proper position.

DROP RECEIVERS KEEP TOW BARS LEVEL.

to prevent drivetrain damage and must be incorporated into the towing routine.

Equipment

Check the rating of your hitch receiver to ensure that it is rated for the heaviest load you intend to pull. If a receiver is already installed on your coach, the weight limits and class should be clearly visible on it.

Adjustable-height drop receivers allow the tow bar to ride level. Receivers should be bolted (not welded) in place, using at least Grade 5 bolts and lock washers, locking nuts and thread-locking sealer.

Tow bars are available in three basic styles. A-frame tow bars (offered as "solid" or "folding"), while the most economical, are designed to fit a limited number of baseplates (mounting brackets) or specific applications (the folding design will fit a wider range than the solid design). They are strong, but heavy, and require storage space when not in use. Hitching is easier with a helper to guide alignment.

There also are two styles of self-aligning tow bars: dinghy-mounted and coach-mounted. Coach-mounted units are the most desirable, as there is less chance of damage when not in use. Hitching is a one-person operation. Highly adaptable, self-aligning tow bars fit a broad range of vehicles by attaching to model-specific baseplates: Class III (5,000-lb.) or Class IV (10,000-lb.) models are available. Contact tow-bar manufacturers to find out if baseplates are offered for the dinghy you plan to tow.

All 50 states require properly rated safety chains or cables to keep the dinghy from separating from the motorhome if the tow bar or ball fails. Safety chains or cables should be connected securely to the dinghy and crossed under the tow bar, then secured to the hitch receiver. They should be long enough to allow full turning without binding, but

As You Go

- Observe the speed limit for towing in each state or province you are traversing.
- Maintain adequate stopping distance from the vehicle in front of you. A minimum five-second interval is recommended.
- Avoid towing in snowy or icy conditions.
- Pay particular attention to traffic merging onto the freeway, and be prepared to take evasive action to avoid "daydreamers."
- Plan ahead — most flat-towed dinghies cannot be backed more than a few feet, so it's necessary to focus on easy ingress and egress. Most tow-bar manufacturers will not warrant damage caused by backing. Dollies tend to jackknife quickly. It's better to disconnect the dinghy and drive to a safe place to reconnect.
- Avoid having to make tight turns; they put a lot of pressure on tow bars.
- Towing in deep sand or gravel may cause the dinghy's front wheels to turn completely to one side. If this happens, you must manually re-center them before continuing.
- Walk around the motorhome and dinghy to inspect all connections, check tire pressure and look for signs of trouble every time you stop.

not drag when slack.

Safe flat-towing of a dinghy requires a taillight/brakelight system activated by the motorhome's lighting and braking systems.

Several companies sell aftermarket wiring kits that allow the dinghy's taillights to be connected directly to the motorhome's trailer-harness plug. Diodes are usually required to prevent electrical feedback from damaging their sensitive electronic components. Check with your mechanic or wiring-kit supplier to find out what your vehicle will need.

Alternately, a light bar or magnetic taillights can be attached to the rear of the dinghy before towing. These systems use their own harnesses, eliminating the need to connect to the dinghy's electrical system. However, they must be attached for towing and stowed away when the dinghy is disconnected for use, and they can easily be stolen.

LUBE PUMPS ALLOW TOWING OF SOME AUTOMATIC TRANSMISSION-EQUIPPED VEHICLES NOT MANUFACTURER-APPROVED FOR FLAT TOWING.

Other Towing Options

Should you choose (or already own) a vehicle that is not flat-towable as produced, there are retrofit kits for many models. One retrofitter, Remco Manufacturing, estimates 80 percent of passenger vehicles can be modified to serve as dinghies with its line of retrofit products.

For rear-wheel-drive (RWD) and some 4WD applications, couplers enable the driveshaft to be easily disconnected from the transmission or differential by a cable or lever mounted near the driver's seat. These kits run about $650 and can be installed in about three hours.

A transmission-lube pump can be mounted and plumbed into some automatic transmissions to keep fluid circulating while the vehicle is in tow.

Other FWD vehicles can be adapted using a Remco axle-lock disengagement device. Check with your dealer to make sure a specific modification does not affect the dinghy's warranty.

Tow dollies also offer an alternative to flat-towing, although they take up space in camp. Remember that the dolly weight must be figured in with the total weight of the dinghy.

Trailers track better than dollies, but they take up even more precious space in camp. Also, the weight of the trailer drastically cuts into the total weight that can be pulled behind a motorhome, thereby making this method a distant third choice.

Brakes

Emergency-stopping a motorhome can be a challenge; add 3,000 to 6,000 pounds of dinghy pushing from behind, and the need for effective dinghy braking becomes apparent.

There are numerous styles of braking systems available — cable-activated economy models, electric-solenoid-activated models, vacuum-operated units, air-pressure units and more. Some can be left in place, once installed; others are put in place each time the vehicle is towed. An on-board braking system should incorporate breakaway detection and dinghy-brake activation.

There are a number of other accessories for dinghy towing. Rock guards protect against road debris; tire-pressure monitors warn of low dinghy-tire pressure; and a color rearview camera system can be helpful in detecting fire, smoke or other dinghy trouble. ▮

For More Information

Automatic Equipment Manufacturing (Blue Ox Products), (888) 425-5382, aemfg.com.

Remco Manufacturing, (800) 228-2481, remcotowing.com.

CHASSIS CHOICES

More horsepower, added torque, greater weight capacities and increased driver comforts are on tap for 2006

JOEL R. DONALDSON

If you've been waiting for a reason to buy a new motorhome this year with the power and capability of towing a dinghy to places unknown, the best inducement may not be its accouterments or cosmetics, but its underpinnings. For 2006, the distinction between gasoline- and diesel-fueled motorhomes in a number of model arenas continues to blur.

In fact, the engine power and weight ratings of some gas chassis have crept up to the point where they are now viable alternatives to some low-end diesels — while the cost of owning some entry-level diesel chassis has dropped enough to put them within spitting distance of some gas models. New diesel options are appearing in the Class C market, and the front-engine configuration

FREIGHTLINER FRED

WORKHORSE W24

no longer belongs exclusively to gas models in the Class A market.

The other noteworthy trend for 2006 is a focus on driver convenience and safety, as chassis manufacturers add features such as adjustable brake and accelerator pedals; steering wheel-mounted switches for such features as cruise control, wipers and lights; and dual fuel fillers. Active suspension systems and traction control are also starting to appear as options on a few high-end chassis.

Many chassis manufacturers are also adding features that simplify upkeep. Examples include centrally located access for the engine and transmission fluids and filters; enhanced diagnostics and service history monitoring; and extended-life fluids for the engine, transmission and rear axle.

Not only do these features make life simpler for the motorhome owner, but they also reduce the incidence of breakdowns and repairs due to overlooked maintenance tasks.

What's New For 2006:

Chevrolet — Although Chevrolet has traditionally played second fiddle to Ford in the Class C market, the company is now looking to improve

CHASSIS WEIGHT FORMULAS

GVW *(gross vehicle weight)*	=	ACTUAL WEIGHED TOTAL OF: Motorhome + full fuel, fluid tanks (holding and water) and LP-gas + cargo weight + passenger weight.
GVWR (*gross vehicle weight rating)*	=	Coach manufacturers' maximum allowable weight of the fully loaded motorhome (including passengers, fuel, LP-gas, fluids and cargo). *The GVW must never exceed the GVWR.*
GCW *(gross combined weight)*	=	ACTUAL WEIGHED TOTAL OF: Motorhome + full fuel, fluid tanks, LP-gas + cargo weight + passenger weight + the loaded weight of anything being towed (dolly, trailer or dinghy).
GCWR *(gross combined weight rating)*	=	Coach manufacturers' maximum allowable weight of the fully loaded motorhome (including passengers, fuel and fluid tanks, LP-gas and cargo) + the loaded weight of anything being towed (dolly, trailer or dinghy). *The GCW must never exceed the GCWR.*

Ford Cutaway

CLASS C

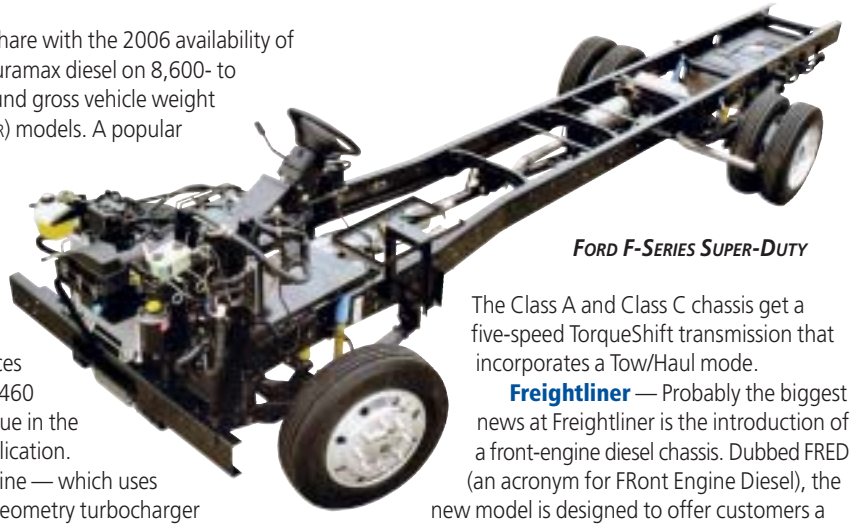
Model	Wheelbases (inches)	Engine	GVWR (lbs.)	GCWR (lbs.)	Towing Allowance (lbs.)*
Chevrolet					
G3500	139/159/177	GM 6.0-L V-8 345 HP 380 LB-FT	8,600-12,300	14,700-22,300	6,100-10,000
		GM 6.6-L V-8 Diesel 250 HP 460 LB-FT			
Chevrolet/Workhorse					
	159/169/183/ 191/221	GM 6.0-L V-8 300 HP 360 LB-FT	14,050	17,600	2,950
Dodge					
Sprinter	118/140/158	Mercedes 2.7-L I-5 Diesel 154 HP 243 LB-FT	8,550/9,990	13,550/14,900	5,000
Ford					
E-350SD	138/158/176	Ford 5.4-L V-8 255 HP 350 LB-FT	9,600-11,500	20,000	8,500-10,000
		Ford 6.8-L V-10 305 HP 420 LB-FT			
		Ford 6.0-L V-8 Diesel 235 HP 440 LB-FT			
E-450SD	158/176	Ford 6.8-L V-10 305 HP 420 LB-FT	14,050	20,000	Up to 10,000
		Ford 6.0-L V-8 Diesel 235 HP 440 LB-FT			

** Depending on actual motorhome weight.*

its market share with the 2006 availability of the 6.6-L Duramax diesel on 8,600- to 12,300-pound gross vehicle weight rating (GVWR) models. A popular option on ¾- and 1-ton trucks for several years, this engine produces 250 HP and 460 LB-FT of torque in the Class C application.

The engine — which uses a variable-geometry turbocharger with aerodynamically tuned impellers to improve full-throttle response, reduce emissions and enhance heater warm-up in cold weather — is offered as an option on certain G2500 and G3500 models, mated with GM's tried-and-true Hydra-Matic 4L85E 4-speed transmission. A 6.0-L Vortec V-8 (LQ4) is also offered, rated at 345 HP and 380 LB-FT of torque.

GM is also manufacturing a 14,050-pound GVWR version of its Class C cutaway under the Chevy/Workhorse brand. Introduced in mid-2005 as a direct competitor to Ford's E-450 Super-Duty cutaway, this model gets a 300 HP version of the 6.0-L Vortec gas engine and a Hydra-Matic 4L85E transmission; no diesel option is currently offered.

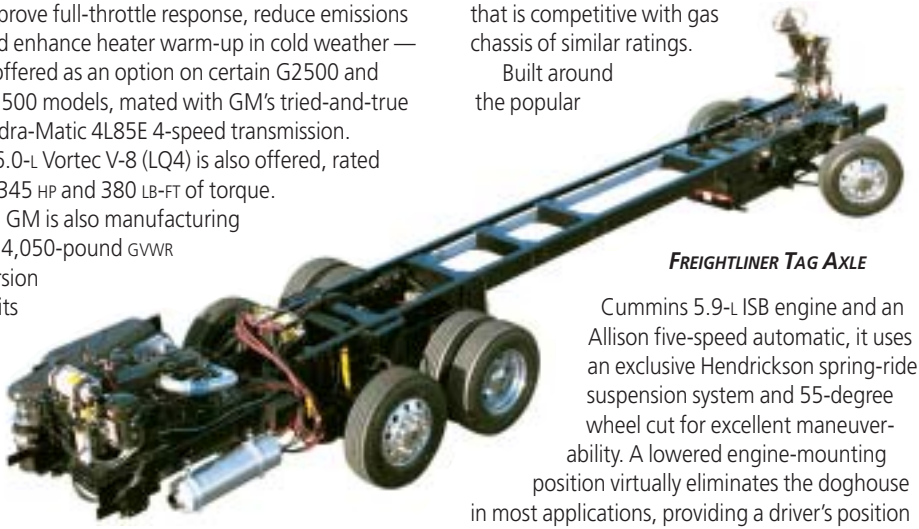


FORD F-SERIES SUPER-DUTY

Ford — In the gas Class A market, Ford has reclaimed the horsepower crown by introducing a new three-valve version of the 6.8-L V-10 engine that makes 362 HP and 457 LB-FT of torque. Ford Class C models still use the 2-valve version that makes 305 HP and 420 LB-FT of torque; a 235-HP/440 LB-FT 6.0-L Power Stroke diesel is also offered. The Class A and Class C chassis get a five-speed TorqueShift transmission that incorporates a Tow/Haul mode.

Freightliner — Probably the biggest news at Freightliner is the introduction of a front-engine diesel chassis. Dubbed FRED (an acronym for FRont Engine Diesel), the new model is designed to offer customers a diesel option at a price that is competitive with gas chassis of similar ratings.

Built around the popular Cummins 5.9-L ISB engine and an Allison five-speed automatic, it uses an exclusive Hendrickson spring-ride suspension system and 55-degree wheel cut for excellent maneuverability. A lowered engine-mounting position virtually eliminates the doghouse in most applications, providing a driver's position that rivals many diesel-pushers.



FREIGHTLINER TAG AXLE

Freightliner has also lowered the engine-mounting position on some of its XC chassis variants. Raised-rail versions equipped with the Caterpillar C7 engine and straight-rail versions equipped with the Caterpillar or Cummins ISB engines are now being offered in this configuration. This approach provides a flat floor in the rear bedroom area of the coach, improves ride and handling characteristics and provides new floorplan opportunities.

Spartan — This continues to be the only major manufacturer to offer a chassis that puts the two heaviest components — the engine and transmission — between the front and rear axles. Compared

CLASS A

Model	Wheelbases (inches)	Engine	GVWR (lbs.)	GCWR (lbs.)	Towing Allowance (lbs.)
Ford					
F-Series Super-Duty	178/190/ 208/228	Ford 6.8-L V-10 362 HP 457 LB-FT	15,700/18,000/ 20,500/22,000	26,000	4,000/5,500/ 8,000/10,300
Foretravel					
Phenix	278/290	Cummins ISM 11-L I-6 500 HP 1,550 LB-FT	46,800	60,000	13,200
		Cummins ISX 15-L I-6 525 HP 1,850 LB-FT			
Nimbus	217/252/290	Cummins ISL 8.9-L I-6 400 HP 1,200 LB-FT	34,800 (334/336 versions) 44,800 (340 version)	51,000 (334/336 versions) 60,000 (340 version)	16,200 (334/336 versions) 15,200 (340 version)
Freightliner					
FRED	228/242/ 252/260	Cummins ISB 5.9-L I-6 300 HP 600 LB-FT	22,000	27,000	5,000
FRED	228/242/ 252/260	Cummins ISB 5.9-L I-6 300 HP 600 LB-FT	26,000	31,000	5,000
XC	190/200/208/ 216/218/228/ 238/242/252/ 262/276	Cummins ISB 5.9-L I-6 300 HP 600/660 LB-FT	26,850-34,600	36,850-44,600	10,000
		Cat C7 7.2-L I-6 300/330/350 HP 860 LB-FT			
		Cummins ISL 8.9-L I-6 350/370/400 HP 1,050/1,200 LB-FT			
Liberty (Fleetwood Enterprises)					
40J, 40L, 40V, 40W	266	Cat C9, 400 HP 1,100 LB-FT	34,600	49,600	15,000
42R, 42B	290/302	Cat C13, 525 HP 1,650 LB-FT	44,600	59,600	15,000

CLASS A

Model	Wheelbases (inches)	Engine	GVWR (lbs.)	GCWR (lbs.)	Towing Allowance (lbs.)
Peak Custom Chassis (Western RV)					
PC-Series	217 (PC-34) 252 (PC-36) 260 (PC-38) 278 (PC-40)	Cummins ISL 8.9-L I-6 400 HP 1,200 LB-FT	33,000	43,000	10,000
Roadmaster (Monaco Coach Corporation)					
R4R	204-240	Cummins ISB 5.9-L I-6 300 HP 600/660 LB-FT	26,500	33,000	6,500
RR4R	228-270	Cat C7 350 HP 860 LB-FT	32,000	42,000	10,000
RR8R	225-261	Cummins ISC 8.3-L I-6 330 HP 950 LB-FT	33,000	43,000	10,000
		Cummins ISL 8.9-L I-6 400 HP 1,200 LB-FT			
M-Series	196-268	Cat C9 8.8-L I-6 350/400 HP 1,100/1,100 LB-FT	35,800	45,800	10,000
RR8S	248-272	Cummins ISL 8.9-L I-6 400 HP 1,200 LB-FT	34,600	44,600	10,000
S-Series	249.5-273.5	Cummins ISL 8.9-L I-6 400 HP 1,200 LB-FT	44,600/45,160/ 48,160	54,600/55,160/ 58,160	10,000
	235.6-286.5	Cat C9 8.8-L I-6 400 HP 1,100 LB-FT			
		Cummins ISM 11-L I-6 500 HP 1,550 LB-FT			
		Detroit Diesel Series 60 12.7-L I-6 515 HP 1,650 LB-FT			
		Cat C13 12.5-L I-6 525 HP 1,650 LB-FT			
		Cummins ISX 15-L I-6 525 HP 1,850 LB-FT			

CLASS A

Model	Wheelbases (inches)	Engine	GVWR (lbs.)	GCWR (lbs.)	Towing Allowance (lbs.)
Spartan					
NVS	Per coach builder's specs	Cummins ISB 5.9-L I-6 300 HP 600 LB-FT	23,000-25,500	27,000-30,000	5,000
NVS GT	Per coach builder's specs	Cummins ISC 8.3-L I-6 330 HP 950 LB-FT	24,000-28,000	34,000-38,000	10,000
		Cat C7 330 HP 860 LB-FT			
K2	Per coach builder's specs	Cummins ISM 11-L I-6 500 HP 1,550 LB-FT	33,700-36,600 43,700-46,600 (with tag axle)	48,700-51,600	15,000
		Cat C13 12.5-L I-6 525 HP 1,650 LB-FT			
K3	Per coach builder's specs	Cummins ISX 15-L I-6 600 HP 1,850 LB-FT	36,000-38,000 49,600-51,600 (with tag axle)	51,000-53,000	15,000
		Cat C15 14.6-L I-6 600 HP 1,850 LB-FT			
Mountain Master	Per coach builder's specs	Cummins ISL 8.9-L I-6 350 HP 1,050 LB-FT	29,000-34,200	41,000-46,200	12,000
		Cat C7 330/350 HP 860 LB-FT			
Mountain Master GT	Per coach builder's specs	Cummins ISL 8.9-L I-6 350/370/400 HP 1,050/1,200/ 1,200 LB-FT	32,700-34,600 42,700-44,600 (with tag axle)	47,700-49,600 57,700-59,600 (with tag axle)	15,000
		Cat C9 8.8-L I-6 350/370/400 HP 1,100/1,100/ 1,100 LB-FT			

CLASS A

Model	Wheelbases (inches)	Engine	GVWR (lbs.)	GCWR (lbs.)	Towing Allowance (lbs.)
Workhorse					
W16	158.5/178/190/208/228	GM 6.0-L V-8 300 HP 360 LB-FT	16,000	20,000 (w/6.0-L engine)	4,000 (w/6.0-L engine)
		GM 8.1-L V-8 340 HP 455 LB-FT		22,000 (w/8.1-L engine)	6,000 (w/8.1-L engine)
W18	158.5/178/190/208/228	GM 8.1-L V-8 340 HP 455 LB-FT	18,000	22,000	4,000
W20		GM 8.1-L V-8 340 HP 455 LB-FT	20,700	26,000	5,300
W22		GM 8.1-L V-8 340 HP 455 LB-FT	22,000	26,000	4,000
W24		GM 8.1-L V-8 340 HP 455 LB-FT	24,000	30,000	6,000
R28	208/228/242/252/262/276	Cummins ISC 8.3-L I-6 350/370/400 HP 1,050/1,200/1,200 LB-FT	28,000	40,000	12,000
R30	208/228/242/252/262/276	Cummins ISC 8.3-L I-6 350/370/400 HP 1,050/1,200/1,200 LB-FT	29,500	41,500	12,000
R32	208/228/242/252/262/276	Cummins ISC 8.3-L I-6 350/370/400 HP 1,050/1,200/1,200 LB-FT	32,000	44,000	12,000

to a conventional chassis with the powertrain located either behind the back wheels or ahead of the front ones, this mid-engine arrangement can significantly improve the coach's weight distribution and road manners, while also opening up a world of new floorplan options. Spartan recently augmented its mid-engine lineup by introducing an ME version of the entry-level NVS chassis.

The NVS ME and GT chassis models now feature a Tuthill/Granning 1260 independent front suspension system with a 57-degree wheel cut — a specification that Spartan claims is unmatched in the motorhome industry. Most of the Mountain Master series also get the same suspension or the beefier

1460 variant with a 55-degree turning angle.

Workhorse — 2005 marked the final year for the venerable P-series chassis, as Workhorse introduced W16 and W18 models targeted at the smaller Class A segment formerly served by the P-series. Rated at 16,000- and 18,000-pounds, respectively, these chassis feature stronger 50,000-PSI steel frames (a nod to the popularity of slideouts); a lower engine position that improves handling, provides more floorplan options and improves access to the driver's position; and a 50-degree wheel cut for improved maneuverability.

WORKHORSE W16

Twin I-beams with Bilstein shocks replace the independent front suspension used on the P-chassis. Both new W-series models have four-wheel ABS, with the stopping power supplied by Brembo brakes. The four-speed Hydra-Matic transmission and 8.1-L Vortec engine are carried over from the old models, although a 6.0-L Vortec is also offered for some configurations.

In the larger W20, W22 and W24 models, the five-speed Allison transmissions have been upgraded to six-speed versions. The new Allison 1000MH (used in the W20 and W22) and 2100MH (used in the W24) transmissions have two overdrive gears, an advantage for reducing engine speed and improving fuel economy during highway-cruise conditions. Both models have a grade-brake function that enhances engine braking on long downgrades. Castrol TranSynd synthetic transmission fluid is standard lubricant, doubling the fluid replacement interval to four years or 100,000 miles.

Finally, Workhorse has introduced an Air Suspension customization kit for aftermarket installation on its W-series chassis. Built around a Firestone IntelliRide air spring system, it uses air bags at all four wheel positions. The system continuously monitors road conditions to adjust the pressure in each bag, and is claimed to virtually eliminate nosedives during hard braking. It can also be used to automatically level the motorhome in campsites or parking lots.

No matter which chassis is used as the foundation for your next coach, perhaps the most welcome change across the board is the increase in GVWR and gross combined weight rating (GCWR). The difference between these two numbers is essentially the towing allowance for the coach, and should not be exceeded. With few exceptions, tow ratings of even the lowest-rated coaches (as seen in the accompanying charts) provide a towing allowance of at least 4,000 pounds, covering virtually all popular dinghy choices. However, owners who choose to tow Hummers, full-sized SUVs or heavy car-hauling trailers will need to hitch them to diesel-pusher coaches of more substantial capability.

It's important to note that the numbers are for gross weight — with supplies and passengers aboard the motorhome and all supplies aboard the dinghy. The towing allowance suggested in the accompanying data is viable only if the chassis is not overloaded. A trip to the scales will tell the tale; weigh front and rear axles individually to ensure that one or the other is not overloaded, even if the GVWR is not violated.

In selecting a new motorhome, cargo carrying capacity (ccc), an industry weight designation that is posted in every new coach, is also an important consideration. It informs the owner of the cargo weight that can be added to the coach. For example, if the chassis is overloaded by 1,000 pounds, that amount of weight should be subtracted from the dinghy weight allowance in order to avoid violating the GCWR. Of course, overloading, whether it be GVWR, gross axle weight rating (GAWR) or GCWR, should be avoided.

Chassis builders vary in their approach to recommending auxiliary braking for a dinghy, with brakes recommended by some for towed loads exceeding 1,500 pounds. Compression- or exhaust-braking systems are highly recommended for diesel-powered chassis in any dinghy towing situation — especially one in which the owner has opted not to use a dinghy brake actuation system. ▮

2006

COMPLETE DINGHY ROUNDUP

MotorHome Magazine's annual compilation of the newest cars, trucks and SUVs suitable for flat towing

SUZUKI GRAND VITARA

The Suzuki Grand Vitara has been redesigned from the ground, up: new unibody chassis with built-in ladder frame; new 103.9-inch wheelbase, new 185-hp, 2.7-L 24-valve DOHC V-6 — and new lines, inside and out. The dramatically restyled 4-door also sports six air bags, and a full-time Four-Mode 4WD system (one of two 4WD options available) that prepares the Grand Vitara for four-wheels-down towing in a snap.

With an impressive list of upscale amenities and innovative design features, the all-new Itasca Ellipse™ will have you spending a lot less time at home. There's the innovative breakfast bar in the 36LD. A dining room set and floor-mounted entertainment center comparable to those found in your home in the 40FD. Higher ceilings throughout give the Ellipse an airy openness while the well-positioned storage areas make getting at your belongings about the most difficult chore you'll encounter.

For a brochure and dealer nearest you, call **1-800-643-4892** or visit winnebagoind.com.

ITASCA

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Once again, we are pleased to present the latest edition of *MotorHome Magazine*'s annual Dinghy Towing Guide — a roundup of most current-model passenger cars, trucks, vans and SUVs that are approved by their respective manufacturers to be flat-towed with all wheels rolling for a reasonable distance (at least 200 miles) at a reasonable speed (at least 55 MPH). Where applicable, the chart also lists any special equipment, procedures or restrictions imposed by the manufacturer.

As in most previous years, certain of the more popular dinghy vehicles are notably absent from these charts. In some cases, this omission isn't due to any mechanical trait of the vehicle itself, but rather to corporate legal concerns, minimum

SATURN VUE

Although the VUE benefits from substantial restyling for 2006, one thing that hasn't changed is the SUV's use of dent-resistant polymer bodyside panels, making it a popular choice for families with children. Flat-towable in 4- or 5-speed automatic or 5-speed manual modes (all with OD), a 143-hp, 2.2-L inline 4-cylinder is standard; a 250-hp, 3.5-L V-6, previously used in the Red Line model, is now offered across the board.

CHEVROLET HHR

Continuing the "retro look" introduced last year with the SSR, the HHR sports a similar style — but with the roadster's truck bed enclosed. One of 11 Chevy trucks and SUVs confirmed flat-towable, the all-new HHR is available with a 143-hp, 2.2-L (stock) or optional 172-hp 2.4-L; both are inline fours. Like the Cobalt sedan with which it shares its platform, the HHR is flat-towable with 4-speed automatic or 5-speed manual.

SUZUKI XL-7

As its name signifies, Suzuki's biggest SUV has the ability to carry seven people (with optional third rear seat), making it a popular choice for RVers who need the extra room. Sporting slightly refined styling, the XL-7 is powered by a 2.7-L, 185-hp V-6 and 5-speed automatic, with ABS now standard across all models. Two models are offered, in two drive configurations; only 4 × 4 models are flat-towable.

ground-clearance standards, or uncertainty about how the installation of an aftermarket tow bar and/or baseplate will affect the vehicle's structural integrity and crashworthiness. As a matter of policy, some automakers simply regard all of their vehicles to be unsuitable for flat-towing.

Transmission choice is a major factor in determining a vehicle's towability, and thus is noted wherever appropriate in this guide. Manual transmissions are often designed so that the gears that normally provide splash lubrication continue to rotate when the vehicle is towed in NEUTRAL, thereby ensuring an adequate supply of oil to internal parts. Conversely, many automatic transmissions lack an oil pump on the output shaft. Thus, there is no lubrication whenever the engine

FORD RANGER

With three sizes, two cab styles, three engine choices, two transmissions, six trim levels and 2WD or 4WD, the Ranger (and its Mazda 2300-series siblings) allows for a lot of personalization. Motorhomers will require the 5-speed manual gearbox variant for flat-towing, but that still allows for a lot of custom touches on the options sheet. Power choices range from a 2.3-L, 143-hp 4-cylinder to a 4.0-L, 207-hp V-6 delivering 238 lb-ft of torque.

HUMMER H3

Once the poster vehicle for conspicuous consumption, the Hummer came in a downsized version in 2004 — and for 2006, it's been rescaled again. The all-new H3 SUV is powered by a 3.5-L, 220-hp inline 5-cylinder, mated to a 5-speed manual (standard) or optional 4-speed automatic transmission — the first Hummer to offer a choice — and both versions of this 4-door/5-passenger luxury SUV are flat-towable.

JEEP COMMANDER

Taking a proven idea to new heights, the new Commander is built on the same platform as the venerable Grand Cherokee, although it's slightly longer and dramatically taller (by four inches). The real difference, however, is inside — it's the first Jeep to boast a third row of seats. Under the hood, available powerplants range from a 3.7-L V-6 to the potent 5.7-L Hemi V-8. Choices also include three full-time 4WD systems.

isn't running. Generally, the only way to safely tow these vehicles is on a dolly, or by installing an external lube pump or driveshaft disconnect.

While every attempt has been made to ensure the accuracy of the information contained in this guide, automakers have been known to make changes prior to a product introduction.

It is your responsibility to verify the suitability of any vehicle before buying or attempting to tow it — and that requires more than querying the dealership's salesperson. The ultimate determination of that suitability will be found in the owner's manual — ask to read it *before* you sign on the dotted line.

ISUZU I-350

Sport trucks were once the sole domain of domestic manufacturers; now, even Isuzu is bringing a pair of compact haulers to market (although they do share Chevrolet underpinnings). The I-350 is the larger of the two, a crew cab stretching 207 inches. Power choice is limited to a 3.5-L, 220-hp inline 5-cylinder mated to a 4-speed automatic with overdrive; Insta-Trac 4WD is likewise standard.

HYUNDAI SONATA

Expanding on a popular idea, the redesigned-for-2006 Hyundai Sonata is longer (188.9 inches) and wider (72 inches) than its predecessor. Offering up a more contemporary profile, the 4-door is available in three trim levels, with a 2.4-L, 162-hp 4-cylinder (stock) or 3.3-L, 235-hp V-6; both earned an Ultra Low Emissions Vehicle rating. Only models with the 5-speed manual gearbox and 4-cylinder are rated for flat-towing.

SCION xA

When a coach-and-dinghy combo is properly set up and correctly weighted, it's common to hear the refrain "I hardly knew it was back there." That holds true especially for the Scion xA; at just 2,340 pounds, it's the second-lightest car ratified for flat-towing (with manual transmission). Powered by a 108-hp Low Emissions 4-cylinder , this 4-door hatchback is also one of the least-expensive dinghies — yet still offers ABS and such niceties as steering wheel-mounted stereo controls.

This guide addresses only 2006 vehicles. Guides for earlier model years are available online at motorhomemagazine.com, or can be ordered as reprints by calling (805) 667-4341.

Passenger Cars

Model	Base Curb Weight	Speed/Distance Limits	Towable with Manual Trans.	Towable with Auto. Trans.	Mileage City/Hwy.	Approx. Retail Price Range
Chevrolet						
Cobalt Sedan/Coupe	2,780	65 MPH/None	Yes	Yes	23/29	$14,200 - $22,000
Malibu/ Malibu Maxx	3,175	65 MPH/None	N/A	Yes	24/35	$19,800 - $25,200
Chrysler/Dodge						
Neon [1]	2,581	None	Yes	No	27/33	$13,800 - $20,700
PT Cruiser	3,075	None	Yes	No	21/29	$14,000 - $28,500
Sebring/ Stratus Coupe	3,135	None	Yes	No	21/28	$20,900 - $31,760
Ford						
Focus	2,605	None	Yes	No	26/35	$14,000 - $19,000
Hyundai						
Accent	2,355	None	Yes	No	29/33	$10,000 - $12,000
Elantra	2,635	None	Yes	No	27/34	$13,600 - $15,500
Sonata	3,255	None	Yes	No	24/34	$17,900 - $22,900
Tiburon	2,940	None	Yes	No	24/30	$16,300 - $20,300
Infiniti						
G35 Sport Sedan	3,470	60 MPH/500 MI [1]	Yes	No	18/25	$31,000 - $33,300
G35 Sport Coupe	3,415	60 MPH/500 MI [1]	Yes	No	18/26	$33,000 - $33,700
Nissan						
350Z	3,215	60 MPH/500 MI [1]	Yes	No	20/26	$27,000 - $39,700
Altima	3,000	60 MPH/500 MI [1]	Yes	No	23/29	$17,700 - $29,700
Maxima	3,450	60 MPH/500 MI [1]	Yes	No	20/29	$27,800 - $30,500
Sentra	2,515	60 MPH/500 MI [1]	Yes	No	28/35	$13,000 - $18,200
Pontiac						
G6	3,380	65 MPH/None	Yes	Yes	23/32	$21,300 - $30,000
Vibe	2,700	None	Yes	No	29/36	$17,700 - $21,000
Saturn						
ION Sedan	2,690	65 MPH/None	Yes	No	26/35	$12,000 - $21,500

[1] *2005 Model.*

[1] *Idle engine in Neutral for several minutes every 500 miles.*

[1] *Idle engine in Neutral for several minutes every 500 miles.*

Model	Base Curb Weight	Speed/Distance Limits	Towable with Manual Trans.	Towable with Auto. Trans.	Mileage City/Hwy.	Approx. Retail Price Range
Scion						
xA	2,340	55/200 [1]	Yes	No	32/38	$12,700
xB	2,395	55/200 [1]	Yes	No	31/35	$13,900
tC	2,905	55/200 [1]	Yes	No	22/29	$16,200
[1] *Idle engine for three minutes every 200 miles.*						
Subaru						
Impreza 2.5i Sedan/ Sport Wagon/ Outback Sport	3,016	None	Yes	No	22/29	$18,200 - $32,500
Legacy Sedan/Wagon	3,200 [1]	None	Yes	No	23/28	$19,200 - $33,700
[1] *2005 Model.*						
Suzuki						
Aerio S/GS Sedan/Wagon	2,660	55 MPH/200 MI	Yes	No	25/31	$14,000 - $17,800
Toyota						
Camry	3,110	None	Yes	No	24/33	$18,400 - $25,800
Camry Solara	3,175	None	Yes	No	21/29	$19,400 - $29,800
Corolla	2,505	None	Yes	No	32/40	$13,800 - $17,600
Corolla Matrix	2,680	None	Yes	No	30/35	$14,900 - $18,900
Echo	2,035	None	Yes	No	35/42	$10,400 - $14,800

Trucks/SUVs

Model	Base Curb Weight	Speed/Distance Limits	Towable with Manual Trans.	Towable with Auto. Trans.	Mileage City/Hwy.	Approx. Retail Price Range
Chevrolet/GMC						
Avalanche 1500 4WD	5,678	None	N/A	Yes	13/17	$37,000
Avalanche 2500 4WD	6,642	None	N/A	Yes	NR	$38,400
Colorado/ Canyon 4WD	3,656	None	Yes	Yes	18/25	$19,100 - $24,900
HHR	3,155	None	Yes	Yes	22/27	$15,400 - $16,400
Silverado/ Sierra 1500 4WD	4,508	None	Yes	Yes	15/18	$21,400 - $39,500
Silverado/ Sierra 2500 4WD	5,398	None	Yes	Yes	NR	$28,900 - $40,300
Suburban/ Yukon XL 1500 4WD	5,219	None	N/A	Yes	13/17	$41,600

Model	Base Curb Weight	Speed/Distance Limits	Towable with Manual Trans.	Towable with Auto. Trans.	Mileage City/Hwy.	Approx. Retail Price Range
Suburban/ Yukon XL 2500 4WD	5,796	None	N/A	Yes	NR	$42,800
Tahoe/Yukon 4WD	5,050	None	N/A	Yes	14/18	$39,500
TrailBlazer/ Envoy 4WD	4,594	None	N/A	Yes	15/21	$28,900 - $31,400
TrailBlazer EXT/ Envoy XL 4WD	4,954	None	N/A	Yes	15/18	$30,600 - $32,800
Dodge						
Dakota 4WD	4,450	None	Yes	Yes	16/20	$22,500 - $29,000 [1]
Durango 4WD	5,132	None	N/A	Yes	13/18	$30,300 - $35,900 [1]
Ram 4WD	4,900	None	Yes	Yes	13/17	$24,500 - $30,700 [1]

[1] 2005 Model.

Ford/Mercury/Mazda						
Escape/Mariner/ Tribute	3,176	55 MPH/None	Yes	No	24/29	$19,995 - $27,245
Explorer 4D 4WD	4,615	55 MPH/None	N/A	Yes [2]	14/18	$27,175 - $36,585
Explorer Sport Trac 2WD [4]	4,135	55 MPH/None	Yes	No	16/21	$24,300 - $28,800
Explorer Sport Trac 4WD [4]	4,349	55 MPH/None	Yes	Yes [1]	11/15	$27,100 - $31,700
F-150 4WD	5,004	55 MPH/None	Yes [3]	Yes [3]	14/18	$25,750 - $37,300
F-250/350 SD 4WD	5,970	55 MPH/None	Yes [3]	Yes [3]	NR	$23,300 - $46,090
Ranger/B2300/2300	3,012	55 MPH/None	Yes	No	24/29	$15,085 - $27,305

[1] With dealer-installed Neutral Tow Kit (part no. 3L2J-7H332-AA).
[2] With dealer-installed Neutral Tow Kit (part no. 1L2J-7H332-AA).
[3] Manual transfer case only.
[4] 2005 Model.
Note: Different vehicles have different restrictions and towing procedures. Contact your Ford dealer for complete details.

Honda						
CR-V FWD/AWD	3,400	Legal/None	Yes	Yes [1]	23/29	$20,400 - $25,400

[1] Recirculate transmission fluid every eight towing hours.

Hummer						
H2	6,400	None	N/A	Yes	NR	$53,000
H2 SUT	6,400	None	N/A	Yes	NR	$53,000
H3	4,700	None	Yes	Yes	16/20	$28,900
Hyundai						
Tucson 2WD	3,270	Legal/None	Yes	No	21/26	$17,500 - $19,000

Model	Base Curb Weight	Speed/Distance Limits	Towable with Manual Trans.	Towable with Auto. Trans.	Mileage City/Hwy.	Approx. Retail Price Range
Isuzu						
Ascender 5 Pass. 4WD	4,612	Legal/None	N/A	Yes	15/20	$27,959
Ascender 7 Pass. 4WD	4,967	Legal/None	N/A	Yes	15/20	$31,193
I-350 4WD	3,802	Legal/None	Yes	Yes	18/25	$27,300
Jeep						
Commander 4WD [1]	4,783	None	N/A	Yes	17/21	$29,300 - $38,200
Grand Cherokee 4WD [1]	4,441	None	N/A	Yes	17/21	$28,300 - $34,600
Liberty 4WD	4,044	None	Yes	Yes	20/24	$21,000 - $25,300
Wrangler	3,200	None	Yes	Yes	18/21	$18,100 - $28,500
[1] With NV245 transfer case (Quadra-Trac II/Quadra-Drive II option).						
Kia						
Sorento 2WD	4,149	55 MPH/400 MI	Yes [1]	No	16/20	$18,995 - $24,200
Sorento 4WD	4,345	55 MPH/400 MI	Yes [1]	No	16/20	$21,000 - $26,100
[1] Idle engine for several minutes every 400 miles.						
Nissan						
Frontier 2WD	3,675	60 MPH/500 MI [1]	Yes	No	22/25	$15,600 - $18,500
Frontier 4WD	4,307	60 MPH/500 MI [1]	Yes	No	15/20	$21,200 - $24,800
Xterra 2WD	4,081	60 MPH/500 MI [1]	Yes	No	17/22	$20,800 - $23,200
Xterra 4WD	4,290	60 MPH/500 MI [1]	Yes	No	16/21	$22,900 - $25,500
[1] Idle engine in Neutral for several minutes every 500 miles.						
Saturn						
VUE	3,207	65 MPH/None	Yes	Yes	23/28	$17,400 - $23,000
Subaru						
Baja	3,610 [1]	None	Yes	No	21/27	$22,200 - $27,100
Forester 2.5X	3,090 [1]	None	Yes	No	22/29	$21,800 - $27,900
[1] 2005 Model.						
Suzuki						
Grand Vitara 4WD	3,582	55 MPH/NONE	Yes [1]	Yes [2]	19/23	$20,200 - $24,400
XL-7 4WD	3,759	55 MPH/NONE	Yes [1]	Yes [2]	17/22	$23,200 - $26,700
[1] Every 200 miles, rev engine with transfer case in Neutral, transmission in gear.						
[2] Every 200 miles, rev engine with transfer case in Neutral, transmission in Drive.						
Toyota						
RAV4 2WD	2,897 [2]	None	Yes	No	24/30	$18,750
RAV4 4WD	3,119 [2]	55 MPH/200 MI [1]	Yes	No	22/27	$20,200
[1] Idle engine for 3 minutes every 200 miles.						
[2] 2005 Model.						

GEAR TO GO

Proper dinghy prep, from braking to tow bars, is essential for safe travel

Joel R. Donaldson

Plug receptacles added to dinghy and motorhome allow easy hookup of electrical connector for taillights, turn signals and supplemental braking system.

The research has been done, the financing arranged, the papers signed … and that brand-new dinghy vehicle is now sitting in your driveway. You've shopped carefully to pick a model that's designated by its manufacturer to be safely towable, you've checked the vehicle's weight to confirm that it's within your motorhome's safe towing capabilities and you've ordered it with the proper factory options to make it towable with all wheels rolling.

Now what?

As any seasoned motorhome owner will tell you, there are a lot of steps involved in getting a new vehicle to the point where it can be towed safely. Sadly, no automaker offers a plug-and-play solution that makes its products ready for safe dinghy towing right from the factory. Thus, it's up to you (and perhaps a knowledgeable towing equipment dealer) to get the job done right.

Dinghy Braking

Adequate dinghy braking is an important consideration because motorhome manufacturers tend to push the weight of their products right to the edge of the chassis manufacturer's ratings, and the addition of several tons of extra rolling weight can be enough to put the combined vehicle pair's braking performance into unsafe territory.

Furthermore, some chassis manufacturers specify that towed loads in excess of 1,500 pounds should have independent brakes and safety breakaway systems.

Although a diverse range of dinghy braking-systems is marketed, all aim to perform essentially the same task: to apply the dinghy's brakes in tandem with those on the motorhome.

Controllers for dinghy brake systems differ; this one uses electronic signals.

AN RV UNDERSKIRT WILL KEEP TOWING APPARATUS CLEAN — AND IT ALSO HELPS PROTECT THE FRONT OF THE TOWED VEHICLE FROM ROAD DEBRIS.

One approach uses electronic signals generated in the motorhome to activate the dinghy vehicle brakes. The motorhome components of the system measure deceleration and send a signal to a power unit connected to the dinghy vehicle brake pedal. As the electronic signal varies with motorhome deceleration, the amount of brake-pedal pull varies in concert, for variable braking.

The system includes a vacuum pump in the dinghy vehicle that maintains full power-brake performance. An actuation lever on the control unit in the motorhome allows the motorhome driver to apply brakes manually, if desired.

Other products include one that utilizes a self-contained power pack that temporarily attaches to the dinghy's brake pedal. This package usually contains an air compressor, air cylinder and control circuitry. Most models have a built-in inertia sensor in the dinghy that automatically applies the brakes without any direct signals from the motorhome; in some cases, a radio link or control wire is used to receive braking signals from the motorhome.

Other systems use a removable air cylinder to push the pedal, with motive power for the cylinder usually supplied either by the motorhome's existing air compressor (if air brakes are present) or an add-on electric compressor. A signal from the motorhome's brakelights is often used to control operation of the cylinder, although inertia-sensing control boxes are sometimes used instead. One variation of this scheme uses an electric linear actuator in lieu of an air cylinder, thereby dispensing with the need for a compressed air supply.

Finally, a few systems use the movement in a special hitch drawbar as the motive power to operate the dinghy brakes. As the motorhome decelerates, the dinghy forces the drawbar to move forward, and the dinghy's inertia is used to operate a flexible cable connected to the brake pedal or to move a master brake cylinder that pressurizes the dinghy's brake lines.

Self-contained systems generally have a significant edge in ease of installation, but there's also something to be said for having an unobtrusive, permanently-installed system that never requires setup or disassembly. After all, most new dinghies will need to be fitted with a tow bar and baseplate anyway, so the installation of a supplemental braking system at the same time may not represent much additional effort.

The Motorhome/ Dinghy Link

An essential ingredient in safe dinghy towing involves a solid, properly designed-and-installed mechanical linkage between the motorhome and towed vehicle. Since towbars and motorhome-hitch receivers tend to be robust, tried-and-true designs, the most critical variable in this link is the tow bar baseplate. Different brands, models and years of dinghy vehicles require different baseplates and installation procedures, so proper selection and installation are essential.

Installing a baseplate typically entails very specific procedures. For example, fitting Blue Ox baseplates on three popular dinghy models, the Saturn VUE, Honda CR-V and Suzuki Grand

BASEPLATE INSTALLATION DOES NOT REQUIRE WELDING OR SPECIALIZED TOOLS. IF YOU HAVE ANY DOUBTS, HAVE A PROFESSIONAL DO IT.

KITS ARE DESIGNED FOR SPECIFIC MODELS, AND COME COMPLETE WITH ALL REQUISITE MOUNTING HARDWARE.

Vitara, requires different steps.

Installing a baseplate on the VUE is relatively simple, requiring only some minor drilling, as well as temporary removal of the headlights. Due to the vehicle's shape, the baseplate's two attachment points are located at a non-standard distance from each other, requiring the installation of an adapter to fit the tow bar.

To install a baseplate on the CR-V, the bumper covering (fascia) must be temporarily removed. Some minor drilling is required and the bumper, covering and/or grille may also require some trimming.

Installing the Grand Vitara's baseplate is a bit more involved, requiring temporary removal of the bumper covering, headlights and front fascia panels.

On some vehicles, the baseplate installation process can be more intricate. For example, the air dam may need to be trimmed or the factory-installed belly pan may require either trimming or permanent removal. Fortunately, these requirements are described in the manufacturer's fitment charts — hopefully eliminating any unpleasant surprises at installation time. Today's baseplates do a good job blending into the exterior lines of the dinghy vehicle.

TO HOOK UP USING A TELESCOPING TOW BAR, DINGHY VEHICLE ONLY NEEDS TO BE NEAR CENTER AND MID-LENGTH OF BAR.

ONCE THE PINS ARE IN, THE MOTORHOME IS DRIVEN AHEAD SLOWLY (OR DINGHY BACKED) TO LOCK THE ARMS IN POSITION.

Dinghy Wiring

One of the most important aspects of dinghy prep involves connecting the wiring between the two vehicles. Tail, brake and turn signals on the back of the dinghy are required in all 50 states and all Canadian provinces, so this isn't a step that you can overlook. (Neither side clearance or back-up lights are required, and are rarely used.)

The most common source of dinghy wiring confusion revolves around differences in the way the turn-signal lights are wired on various cars and motorhomes. Some models are wired to supply turn-signal power to the same bulbs that are used for the brakelights (commonly referred to as a 4-wire system), while others use separate amber bulbs for the rear turn signals (a 5-wire system). Note that 4- and 5-wire systems are used on both motorhomes and cars, so any one of four different solutions may be needed for any particular application. Adapters are readily available to electronically match the wiring systems of the dinghy and motorhome.

The traditional method of wiring a dinghy vehicle involves the use of steering diodes, which function as one-way gates to the flow of electricity, allowing power from either the motorhome or vehicle to be supplied to the rear bulbs. Since no electricity can flow backwards through a diode, it also prevents power from the motorhome from being inadvertently introduced to any other circuits in the dinghy vehicle.

Many late-model

As an alternative, you can install an extra pair of lamps on your dinghy independent of its electrical system.

One-way diodes prevent electrical feedback.

vehicles are equipped with on-board diagnostics that continuously check for proper operation of the turn-signal and brakelight bulbs. Unfortunately, the introduction of aftermarket steering diodes into the vehicle's wiring can "fool" this diagnostic function, typically causing it to give false warnings about burned-out bulbs.

For this reason, it is becoming more common to modify each of the vehicle's tail-lamp assemblies to accept a separate bulb. This bulb is then connected directly to the motorhome, eliminating any connections to the vehicle's existing wiring harness. Naturally, this modification isn't for the squeamish, since it usually involves drilling a large hole in the tail lamp reflector. Fortunately, special snap-in sockets are available that make this job somewhat easier.

Since the new socket takes up considerable space behind the lamp assembly, care must be taken in selecting a location for the new hole that avoids socket interference with any other objects behind it.

Note that most states allow the turn signals to be either red or amber in color, but only permit the brakelights to be red. Thus, on automobiles equipped with amber turn signals, the new socket is typically installed behind the red brake lamp lens.

The Kargard shield, from Blue Ox, attaches to the tow bar and adds yet another level of dinghy protection, guarding against potential damage from road debris.

In situations where modifications to the dinghy's original wiring either aren't desirable or practical, a set of removable towing lights often provides a workable solution. Most of these products are affixed with magnets, although some models can be equipped with suction cups or hook-and-loop fasteners (ideal for use on plastic or fiberglass surfaces). A cable is then snaked across the vehicle to the connector at the motorhome hitch receiver.

In some cases, the cable is semi-permanently routed inside or underneath the vehicle, allowing the lights to be quickly removed and stowed inside the trunk. Several companies offer wireless removable towing lights, thereby eliminating the need for this cable altogether.

Although many motorhomes come with a factory-installed 4- or 5-pin connector, there are situations where a different connector is necessary. Some dinghies equipped with an automatic transmission must be equipped with an electric lube pump, which requires a connector pin for 12-volt DC power (and ideally, a separate connector pin for ground, in order to avoid drawing excessive current through the existing one). Also, some auxiliary braking systems require connections to the motorhome, further increasing the connector-pin count.

Ideally, the industry-standard connection scheme should be observed when installing this new connector, so that it can also be used when towing boats, ATVs, horse trailers, etc.

Unfortunately, since there is no industry-wide standard for wire color codes used in automobiles, another hurdle in dinghy wiring involves identifying the proper wires for the stop, turn and tail lamps (as well as a suitable ground connection). If you've had the foresight to purchase a service manual for your particular vehicle, this can sometimes be accomplished by visual inspection of the wire harness. More often than not, it involves connecting a test light to each suspected wire in order to match it with the corresponding bulb. Note that on 4-wire systems, the same wire may be "hot" when either the brake or one of the turn signals is operated.

When splicing diodes or other connections into the vehicle's wiring harness, it is particularly important to use top-quality connectors or splices. In order to prevent any chance of corrosion, all connections should be waterproof. Heat-shrink tubing works very well for this purpose, as does self-vulcanizing plastic tape.

ADDING LARGE RUBBER FLAPS AT THE REAR OF A MOTORHOME WILL MINIMIZE TOWED-VEHICLE DAMAGE FROM DEBRIS, DIRT AND GRIME KICKED UP BY COACH TIRES.

Dinghy Peculiarities

Some manufacturers have very specific restrictions on how to prevent damage to the transmission or transaxle. For example, Suzuki recommends starting and revving the dinghy engine every 200 miles to recirculate transmission oil. Obviously, the owner should observe these rules scrupulously. When in doubt about the restrictions for your particular vehicle, *read the owner's manual.* Note that overfilling the transmission prior to towing is not an effective way of circumventing these precautions, since the problem isn't caused by lack of sufficient oil but rather by lack of oil circulation.

Another vehicle-specific consideration is that towing some ding-

hies with the ignition switch in a position that allows the steering column to remain unlocked also leaves power applied to various electrical circuits. Over the course of a full day of towing, this can lead to significant battery drain. While strategies for dealing with this problem vary considerably by model, most fixes involve temporarily unplugging one or more fuses from the vehicle's fusebox prior to towing.

ONCE THE PROPER BASEPLATE IS INSTALLED, THIS CLEAN-LOOKING SETUP IS ALL THAT REMAINS WHEN THE TOWED VEHICLE ISN'T HOOKED UP; COOLING DOESN'T SUFFER.

Naturally, this imposes the additional need for remembering to replace these fuses prior to driving the vehicle. A more convenient (albeit involved) option is to connect the offending circuit through an owner-added switch, allowing these circuits to be made tow-ready by the mere flip of a switch.

Some older dinghy vehicles (pre-1997) are equipped with a mechanical speedometer/odometer combination that accumulates mileage while the vehicle is being towed. There's no way to alleviate this — Remco once offered an electric speedometer disconnect, but it was phased out as newer vehicles stopped requiring such alteration — but the resale value of a vehicle this old is unlikely to be affected much by the extra towing mileage.

A Few Towing Tips

Breaking camp tends to be a distracting time, with many chores to perform. Since forgetting to effect any of several dinghy towing-preparation tasks — disengaging the parking brake, shifting the transmission and/or transfer case into NEUTRAL, unlocking the steering column, installing the dinghy braking system, etc. — could lead to significant damage, the use of a checklist is strongly recommended.

Finally, while towing, it's important to occasionally pull over and stop to visually inspect the condition of the dinghy, tow bar, safety cables and dinghy lights. Even with a good backup monitor system and/or mirrors, it's not always possible to spot problems from the driver's seat, so the loss of five minutes of driving time is certainly a small price to pay for a safe, uneventful trip. ▮

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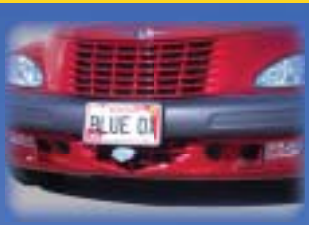

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