



POWER ON

4WD
1-4
ENGINE

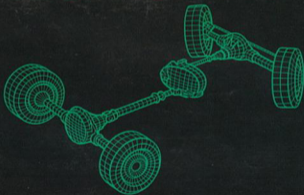
4WD
TRAILER
TOWING

4WD
SYSTEMS

4WD
COMPETITIVE
COMPARISON


4WD
CAPABILITIES

Jeep/Eagle TECHNOVATION



4-WHEEL DRIVE SYSTEMS

- Command-Trac
- Selec-Trac/Select Drive
- Famous Jeep Part Time

 Jeep/Eagle

WHEN IT COMES TO 4W SAYS IT ALL. JEEP.

JEEP. A WORLD LEADER IN 4WD TECHNOLOGY.

Jeep Corporation, a subsidiary of American Motors Corporation, has been an acknowledged leader in 4WD systems design for more than four decades. More than four million Jeep vehicles produced for the world, performing under the most demanding of conditions, testify to Jeep's impressive record for dependable 4WD performance.

Today, around the globe, in the most impossible places, Jeep remains the best known brand name in four-wheeling...for performance...for reliability...for durability...

The famous Jeep Part Time system is still the standard of the industry in terms of rugged 4WD capability. In fact, 95% of all Jeep vehicles registered in the last ten years are still on the road—or off.* And most of them depend on the Jeep Part Time system.

Over the years, as world concern over resources grew, we learned how to make Jeep drivelines tough enough to take the rigors of off-road use, while developing and utilizing stronger, lighter materials to help improve fuel economy.

In 1974, Jeep introduced the first full-time automatic four-wheel drive system, called Quadra-Trac, and for the first time, serious four-wheelers could take to paved surfaces in 4WD without damage or undue wear on 4WD components.

In 1982, Jeep introduced the worthy successor to Quadra-Trac...Jeep Selec-Trac and Eagle Select Drive that offered a 2WD mode for economy and all-road surface 4WD for stability and traction. Selec-Trac

and Select Drive remain the most unique 4WD systems available in regular production vehicles.

Now Jeep is at it again with a brilliant new shift-on-the-fly 2WD/4WD system called Command-Trac. It's standard on the new Jeep SportWagons, Cherokee and Wagoneer, providing in-the-cab, instantaneous console-control over the driving mode...2WD economy, or 4WD traction and action.

You can find out all about new Command-Trac and the entire family of Jeep/Eagle 4WD systems inside this issue of Jeep TECHNOVATION...the latest chapter from the people who wrote the book on four-wheel drive.

*R.L. Polk registrations
July 1982.



1940 Willys-Overland "Quad"



1941-45 Military Jeep, Model M8



1968 Willys-Overland Jeep Station Wagon

D...ONE WORD



1950 Jeepster VJ-3



1983 Jeep CJ-7 Off-Road Racer



1954 Willys Jeep CJ-5



1984 Jeep J-10 Pioneer Truck



1984 Jeep Grand Wagoneer



1983 Kaiser Jeep Truck



1984 Jeep Cherokee Chief



1984 Jeep CJ-10 (Export Only)



1984 Jeep Wagoneer Limited

JEEP COMMAND-TRAC.

Command-Trac is the most recent success story in Jeep's long and distinguished record of achievement in four-wheel drive system design and engineering.

It's a system that provides either 4WD High range traction, power and performance or 2WD over-the-road efficiency, on command, from the driver's seat, at any speed.

For situations that call for maximum traction in mud, sand or deep snow, Command-Trac also provides a 4WD Low range accessible by stopping the vehicle and shifting to "4L."



Command-Trac transfer case and 5-speed transmission



Jeep Cherokee Chief



Jeep Wagoneer Limited

AVAILABILITY:

Jeep's versatile new Command-Trac system provides shift-on-the-fly 2WD/4WD capability for an all new family of comfortable, efficient and affordable Jeep vehicles...the new Jeep SportWagons, Cherokee and Wagoneer. Command-Trac is the standard drive system on these amazing new Jeep vehicles mated to a standard 4-speed or optional 5-speed or automatic transmission, and a powerful new electronic, high compression 2.5L I-4 "Hurricane" engine. Optional power for the new Jeep SportWagons with Command-Trac is a 2.8L V-6.

SYSTEM COMPONENTS:

The major components that make up the Command-Trac shift-on-the-fly 2WD/4WD system are:

Command-Trac floor console mounted drive range selector. This connects directly to a...

New Process Model 207 Transfer case. It is a latest technology, four position, dual range, part time 4WD unit with synchronizer assembly and a vacuum control switch. It provides system control over the...

Front drive axle which features a 2-wheel drive disconnect system that allows the front wheels to free-wheel in the 2WD drive mode.

A 4WD indicator light on the instrument panel glows when Command-Trac is in either of the two 4WD drive ranges. This serves as a reminder to shift to 2WD driving mode on dry paved surfaces with good traction.

Shift-on-the-fly 4WD performance mated to famous Jeep toughness and reliability.

COMMAND-TRAC FAST FACTS:

- Unique shift-on-the-fly 2WD/4WD capability.
- Dual 4WD driving modes for extra traction and action whenever you need it.
- 2WD drive mode for fuel squeezing efficiency on dry paved surfaces.
- Instantaneous fingertip control from the driver's seat at a single drive mode range selector.
- New Process transfer case with synchromesh assembly and vacuum control switch.
- Instrument panel warning light shows when the vehicle is in 4WD mode.
- Modified front drive axle with disengage feature.
- Eliminates leaving the vehicle or stopping the vehicle to switch from one drive mode to the other.



HOW COMMAND-TRAC WORKS.

Transfer Case

A New Process 207 transfer case with synchronizer assembly, vacuum control switch, and four shift positions provides access to Command-Trac's 2WD mode and dual range 4WD mode. When the transfer case is in "Neutral" the axles are disengaged from the powertrain and the vehicle may be towed without uncoupling the propeller shafts.

2WD

For maximum economy while operating on paved dry surfaces, and to save on drivetrain component wear, the Command-Trac transfer case should be positioned in "2WD High." This automatically activates the vacuum control switch, disengaging the front axle, allowing the front wheels to free wheel. All power is transferred to the rear differential. You may make the switch from 4WD to 2WD from a standing position or while moving at any speed.



4WD High

You may shift from 2WD to 4WD at any speed, anytime by simply moving the transfer case shifter to "4WD High." The automatic control which allows shifting at any speed is the synchronizer assembly. In the "4WD High" mode the vacuum switch locks in the front axle. Power is transmitted to both the front and rear differentials, and all four wheels become driving wheels for improved traction.



4WD Low

4WD Low in Command-Trac is designed for maximum traction in mud or sand, deep snow and other off-road applications. To shift into 4WD Low from 2WD or 4WD High it is necessary to stop the vehicle and move the transfer case shift lever to "4L." Then drive on normally. The system now provides maximum torque and gearing when 4WD traction is most needed. To return to 2WD or 4WD High simply stop the vehicle, move the transfer case shift lever to "2WD High" or "4WD High" and drive on.



NOTE: Command-Trac features a part-time 4WD system. Use of the 4WD "High" and "Low" ranges should be limited to situations requiring the extra traction and control of 4WD. Operation in 4WD for extended periods on paved dry surfaces will cause accelerated wear on drivetrain components and will lead to a higher fuel consumption rate. A 4WD instrument panel use light glows to remind drivers to switch to 2WD when conditions permit.

JEEP SELEC-TRAC/ EAGLE SELECT DRIVE.

This is the premier automatic 2WD/4WD drive system in the world. It's a sophisticated and innovative system that permits travel in the four-wheel drive mode without unusual wear or damage to drivetrain components. When driving conditions permit — when traveling on dry surfaces, for example — this system provides a two-wheel drive operating mode for maximum operating efficiency.

*On Jeep vehicles the system provides high and low 4WD operating modes in addition to a 2WD mode, and is called **Selec-Trac**. On Eagle models the system features one 4WD and one 2WD operating mode and is called **Select Drive**.*



Eagle Select Drive Control Panel



Jeep Selec-Trac Control Panel

AVAILABILITY:

The unique **Selec-Trac** all-road-surface 2WD/4WD drive system is standard on Jeep Grand Wagoneer and available on Jeep J-10 Series Pickups and the new generation of leaner and meaner Jeep Sport-Wagons...Cherokee and Wagoneer.

Select Drive is standard on Eagle Wagon and Sedan models, and is the only system offered for this innovative automobile series.

SYSTEM COMPONENTS:

The major components that make up the unique **Selec-Trac/Select Drive** system are:

Selec-Trac/Select Drive control panel that lets you choose the operating mode that's right for the driving conditions...4WD for traction and control, or 2WD for over-the-road efficiency.

Dual range New Process 229 automatic 4WD transfer case with tunnel-mounted control lever...to give you a choice of 4WD action...normal or maximum (Jeep vehicles only).

High range New Process 129 automatic 4WD transfer case. (Eagle wagon and sedan only.)

Viscous coupling controlled slip differential. A Jeep/Eagle exclusive designed into the transfer case that automatically delivers power to the axle with the most traction.

Front axle automatic disconnect feature controlled by vacuum switch in the transfer case to disengage the front axle allowing the front wheels to free-wheel.



Eagle Wagon Limited



Jeep Grand Wagoneer

Our most sophisticated and innovative 2WD/4WD system.

A transfer case neutral position that disengages the axles from the powertrain so that vehicle can be towed without removing the propeller shafts. (Jeep vehicles only.)

SELEC-TRAC/ SELECT DRIVE FAST FACTS:

- Choice of driving ranges... fuel-saving 2WD or all-road-surface 4WD.
- "HI" and "LO" range 4WD driving modes for optimum traction under all driving conditions (Selec-Trac only).
- Fingertip control of driving mode from the driver's seat.
- Advanced Jeep designed New Process automatic 4WD transfer case with built-in viscous drive limited slip differential.
- Disengage feature for front axle activated by transfer case vacuum switch.
- Optimum system for traveling when road surface changes frequently between poor and normal traction, or when driving in and out of inclement weather.
- All-road-surface 4WD mode (a Jeep/Eagle exclusive) lets you stay in four-wheel drive for as long as you like without damage to front drive components.



HOW SELEC-TRAC/SELECT DRIVE WORK.

TRANSFER CASE

The heart of the Selec-Trac and Select Drive system is a New Process automatic 4WD transfer case with shift lever on Selec-Trac and a sealed viscous drive controlled slip differential. With the drive selector control positioned in "4WD" and the transfer case in "Neutral" (Selec-Trac) the axles are disengaged from the powertrain and the vehicle may be towed without uncoupling the propeller shafts.

2WD

For improved economy while operating on paved dry surfaces, with the vehicle standing, move the drive selector control switch to the "2WD" position on the left. Now drive normally. A disengage feature in the transfer case has automatically disconnected the front axle allowing the front wheels to free wheel while directing all available torque to the rear axle differential.



4WD HIGH

To switch from 2WD to 4WD High simply stop the vehicle and move the drive selector to the right to "4WD" for the Select Drive system. This is all that's required. For Selec-Trac, move the tunnel mounted (Grand Wagoneer) or console mounted (Cherokee, Wagoneer) transfer case shifter to "H." Now enjoy the benefits of all-road-surface 4WD. The transfer case has locked in the front axles and wheels, and an exclusive sealed viscous drive controlled slip differential is automatically and continuously distributing more torque to the axle with the most traction helping the rear wheels push and front wheels pull the vehicle through demanding traction situations. The vehicle can remain in 4WD High for as long as you like...hours, days, even months without excessive wear or damage to drivetrain components.



4WD LOW (SELEC-TRAC ONLY)

A 4WD Low range is available with Selec-Trac for the most demanding off road or on road situations, such as mud, sand, gravel or deep snow. With the vehicle stopped and the Selec-Trac control switch in "4WD," move the transfer case shifter to 4WD "L." This automatically bypasses the controlled slip differential and directs maximum usable power to front and rear axles.



NOTE: Selec-Trac "4WD Low" is not a full time 4WD driving mode and should be used only in extreme traction situations. Driving in "4WD Low" for extended periods on paved dry surfaces will cause accelerated wear on drivetrain components and will lead to a higher fuel consumption rate.

JEEP® PART TIME 4WD.

Jeep has been the world leader in 4WD system design for more than 45 years. All those years, and more than 4 million vehicles later, the toughness, performance and dependability is still there. And the majority of those Jeep vehicles feature the Part Time 4WD system that helped create the Jeep legend.

Today's Jeep Part Time 4WD system offers many of the same rugged features as the original, plus advantages that stem from advanced technology. We now, for example, produce Jeep Part Time 4WD systems from lighter weight, higher strength materials and componentry that don't sacrifice toughness a bit. And the standard Jeep Part Time 4WD system for 1984 is truly a study in operational simplicity.



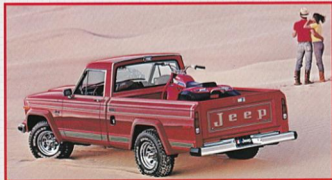
Jeep Pickup transfer case and 4-speed transmission shift levers.



Jeep CJ-7 transfer case and 4-speed transmission shift lever.



Jeep CJ-7



Jeep J-10 Laredo Pickup

AVAILABILITY:

Jeep's proven 2WD/4WD part time system continues to be the standard system for many Jeep vehicle lines. It's standard on Jeep CJ-7 and Scrambler models, as well as the J-10 and J-20 Series Pickups. It's used with either four- or six- or eight-cylinder engines, and with manual or automatic transmission depending on Jeep model selected.

SYSTEM COMPONENTS:

Manual free wheeling locking front hubs to engage or disengage the front axle and front wheel drive components.

Dana transfer case with manual dual range 4WD. (New Process transfer case on J-10 pickups.)

Tunnel-mounted transfer case shift lever with "4L" (4WD Low), "N" (Neutral), "2H" (2WD High) and "4H" (4WD High) positions.

An instrument panel warning light to indicate when the vehicle is being operated in either 4WD "High" or "Low" range.

The original Jeep 4WD system is still going strong.

JEEP PART TIME 2WD/4WD FAST FACTS:

- Jeep reputation for durability, reliability and performance established over more than 45 years in the design and engineering of 2WD/4WD part time systems
- Standard lockable free-wheeling front hubs.
- Advanced Jeep design Dana (CJ/Scrambler) or New Process (J-10 Pickups) transfer case.
- Dual range 4WD performance for normal off road use and for severe traction requirements.
- 2WD mode for on-highway use to save wear on front drive components and contribute to better fuel economy.
- Transfer case neutral position to disengage drive axles so Jeep vehicle can be towed.
- 4WD operating mode warning light.
- Optional Trac-Lok limited slip rear differential available for improved 2WD/4WD traction.
- Available with either manual or automatic transmission; 4- or 6-cylinder or V-8 engine.



HOW JEEP PART TIME 2WD/4WD WORKS.

Transfer Case

The transfer case with tunnel mounted shift lever provides a manual single range 2WD mode and dual range 4WD mode. When the transfer case is in "Neutral" the axles are disengaged from the powertrain and the vehicle may be towed without uncoupling the propeller shafts.



2WD

To operate in the 2WD mode the standard free-wheeling hubs should be locked out at each front wheel. Then shift the transfer case to "2H" and drive normally. The front axle has been disengaged and all of the driving torque is directed to the rear axle differential.



4WD

To operate in the 4WD High mode the front hubs must be "locked in" and the transfer case shifter positioned in "4H." Now the front wheels can no longer free wheel and the front axle is engaged. Driving torque is transmitted to the front and rear axle with no differential action between the two, making each wheel a driving wheel providing a portion of the traction required for the surface condition. 4WD High is the typical driving mode for use on-highway when the pavement is wet or slick, and on loose surface roads or off road on firm terrain.



4WD Low

When maximum traction and torque are needed, a 4WD Low range is available with Jeep Part Time systems. With the front hubs locked in and the vehicle moving slowly (2-to 3-mph) shift the transfer case to "Neutral" then shift to "4L." Now your Jeep vehicle provides the maximum driving torque and lowest gearing available for the greatest traction and power requirements off road in mud, sand, gravel or deep snow.



NOTE: The front hubs may be left in the "locked" position providing the Jeep vehicle with shift-on-the-fly 4WD capability. However, driving in 2WD mode with the front wheel hubs locked can cause accelerated wear on drivetrain components and lead to a higher fuel consumption rate.

NOTE: Operating a Jeep vehicle equipped with Part Time 2WD/4WD system in either 4WD driving range on paved dry surfaces for extended periods of time will cause accelerated wear of drivetrain components and will lead to a higher fuel consumption rate.

JEEP®/EAGLE 4WD SYS TRANSMISSION COMB



Forty-Nine States

Command-Trac
Automatic

Command-Trac
Manual 4-spd./5-spd.

Selec-Trac/Select
Drive Automatic

Select Drive
Manual 4-spd./5-spd.

Part Time
Manual 4-spd./5-spd.

Part Time
Automatic

Command-Trac
Automatic

CJ/SCRAMBLER
2.5L 4-cyl.
4.2L 6-cyl.

**CHEROKEE/
WAGONEER**
2.5L 4-cyl.
2.8L V-6

J-10
4.2L 6-cyl.
5.9L V-8

J-20
5.9L V-8

GRAND WAGONEER
4.2L 6-cyl.
5.9L V-8

EAGLE
2.5L 4-cyl.
4.2L 6-cyl.

	Command-Trac Automatic	Command-Trac Manual 4-spd./5-spd.	Selec-Trac/Select Drive Automatic	Select Drive Manual 4-spd./5-spd.	Part Time Manual 4-spd./5-spd.	Part Time Automatic	Command-Trac Automatic
CJ/SCRAMBLER 2.5L 4-cyl. 4.2L 6-cyl.					■	■	
CHEROKEE/ WAGONEER 2.5L 4-cyl. 2.8L V-6	■	■**	■				■
J-10 4.2L 6-cyl. 5.9L V-8			■		■*	■	
J-20 5.9L V-8			■			■	
GRAND WAGONEER 4.2L 6-cyl. 5.9L V-8			■				
EAGLE 2.5L 4-cyl. 4.2L 6-cyl.			■	■			

*4-Spd. Only **Wagoneer 5-Spd. Only.

TEM, ENGINE AND INATIONS.

High Altitude Areas					California Vehicles					
Command-Trac Manual 4-spd./5-spd.	Select-Trac/Select Drive Automatic	Select Drive Manual 4-spd./5-spd.	Part Time Manual 4-spd./5-spd.	Part Time Automatic	Command-Trac Automatic	Command-Trac Manual 4-spd./5-spd.	Select-Trac/Select Drive Automatic	Select Drive Manual 4-spd./5-spd.	Part Time Automatic	Part Time Manual 4-spd./5-spd.
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GLOSSARY OF COMMON 4WD TERMINOLOGY:

Locking Hubs—Enables driver to disengage front axle and let the front wheels turn freely when in 2-wheel drive mode. This reduces the amount of wear on the drivetrain components. Locking hubs are available on Jeep manual or automatic transmission vehicles.

Low Range—A driving mode which can be manually shifted into for situations which require extra pulling power and traction.

Skid Plate—Metal plate attached to underside of vehicle to help protect against damage to particularly vulnerable areas such as the fuel tank, oil pan, etc.

Walking Your Vehicle—A driving technique which helps maintain traction by moving the steering wheel back and forth in short arcs to give the front wheels a fresh traction surface to grab on to.

Rocking Your Vehicle—A driving technique to get you "unstuck". With light throttle

pressure, you move the shift lever back and forth from "drive" to "reverse" (1st gear to reverse with manual transmission). The "rocking" motion can often give you the momentum to move on to solid ground.

Airing Down—Removing some of the air from your tires (down 8 or 10 psi) under off-road conditions to increase the amount of tire traction surface. Upon returning to on-road driving, it's necessary to re-inflate to avoid tire damage and unsafe handling characteristics.

Sand Mats—Any material (i.e., stiff carpeting, chicken wire, chain link fencing, planks) that you may place under your tires to give you traction when you are stuck. You'll need at least two sections of any material, four feet in length or more and twice as wide as your tires.

High-Centered—A situation which hangs up your vehicle on an object (rock, stump, etc.) that lifts one or more wheels off the ground and prevents you from moving on.

THE FOUR WHEELERS' CREED.

- Because I have come to know the value of nature, I will not destroy its solitude and beauty.
- Because I appreciate the land, I will leave it unmarred, clean and unutilized, the way it was created.
- I will respect life, property and the right of future generations to appreciate the wilderness as much as I do.
- I will maintain my vehicle in proper mechanical repair and operate only on trails and areas approved and maintained for 4WD use.

OFF ROAD DRIVING TIPS:

Most Jeep vehicles have been designed to spend a good part of their life, off road, outback in Jeep Country. The high ground clearance and short front and rear overhang of Jeep vehicles are two of the design features that give them extraordinary off-road ability. It's the rugged Jeep 4WD system that gives them dependable off-road capability.

However, though Jeep 4WDs can go almost anywhere, and

certainly can go places the ordinary family car can't, there are still places that Jeep vehicles, or any other off-road vehicles, shouldn't go.

- As a general rule, stick to off road areas others have traveled before you.
- Stay on marked 4WD trails or unimproved roads.
- Don't venture into unfamiliar country alone.
- Be aware of property lines and drive only in areas where off-landers are welcome.
- Be more alert in rough, choppy areas. Drive slowly and avoid abrupt steering changes. **Keep four wheels on the ground at all times.**
- Keep your Jeep vehicle in good mechanical repair, and carry a generous complement of safety gear, such as flashlight, matches, extra clothing, food and fresh water, basic tools, a first aid kit, etc.



ON ROAD 4WD DRIVING TIPS:

While all Jeep vehicles are designed for rugged off-road use, the facts of driver use are that most of them will be used on-road more than 95% of the time. Many of the features that give Jeep vehicles incredible off-road ability also mean that they will perform differently than conventional vehicles on-road.

For instance, the higher ground clearance and shortened front and rear overhang of some Jeep vehicles creates a high center of gravity causing them to react differently to steering input.


There are many things you can do to minimize these handling differences while driving on pavement.

- On dry pavement shift your Jeep vehicle to the 2WD mode. While Selec-Trac/Select Drive may be driven on highway in the 4WD mode, it is not recommended for Jeep Command-Trac or Part Time systems. Also, maintain recommended tire pressure as prescribed in the owner's manual of your vehicle and on the tire casing.
- Be sure all four tires are the same size and tread design.

- For extended paved road travel, use highway tires. They can contribute to better handling...they can improve fuel efficiency, too.
- Distribute passengers and cargo evenly throughout your vehicle between the axles. Make it a general rule to never carry cargo exceeding the gross vehicle weight rating for your vehicle.
- When trailering, stay well within the trailer weight and tongue weight recommendations described in your vehicle owner's manual.
- Drive defensively. That is, be prepared. Learn to anticipate problems and provide more time to react (steer, brake, accelerate, etc.) than in conventional vehicles.
- Buckle up! And insist that all passengers are secured by restraint system at all times.

- Avoid sharp turning maneuvers. Approach curves slowly, cautiously. Slow down in crosswinds.
- On wet or slippery pavement, switch to 4WD for extra traction and control.

For other important information about 4-Wheeling, ask your dealer for a free copy of the "Driving Your 4-Wheel Drive Vehicle" brochure.

 **Jeep/Eagle**