Valley® Drive Train

RELIABLE | DURABLE | PRECISE | ADVANCED | RESPONSIVE

VALLEY®

The Leader in Precision Irrigation

Valley® Gearbox

SCAN

to see how the Valley Gearbox is made

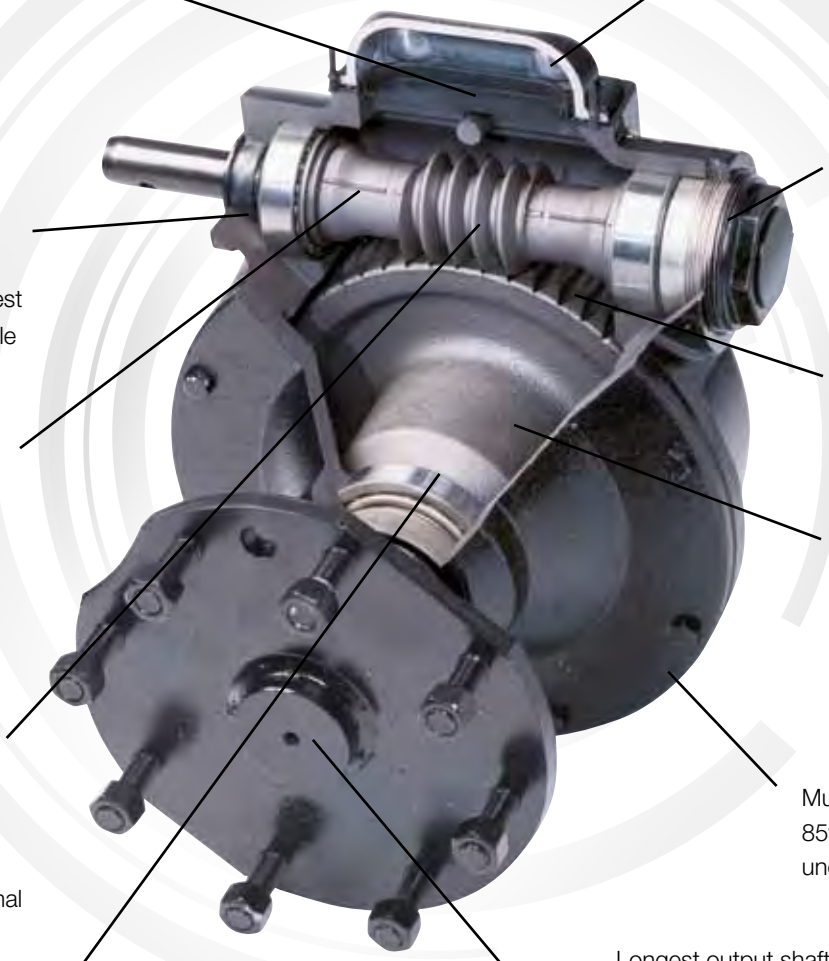
Large capacity rubber diaphragm — expands with heat and pressure to minimize water condensation.

Input and output bearings — American made and case hardened to provide the highest quality and load rating available in the industry.

Worm gear — high strength ductile iron provides significantly longer wear life than steel when combined with a cast iron bull gear.

Tooth design — industry exclusive 25° tooth angle provides 40% longer life and better reliability in tough conditions compared to normal 14½° tooth designs.

Largest bull gear neck and keyway — for strength in critical load-bearing area.



Expansion chamber — cap made of corrosion resistant cast aluminum; rubber diaphragm allows oil to expand and contract during operation. Vented cap prevents pressure buildup, prevents seal from leaking.

Threaded endcap — allows accurate bearing preload to increase bearing life.

52:1 gear ratio — full recessed tooth design keeps oil between engaged gears.

Bull gear — high strength cast iron provides the highest load capacity in the industry and longest life. Optional bronze gear is available for extreme conditions.

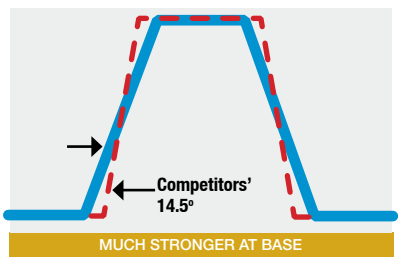
Multi-viscosity gearbox oil — exceeds 85w140 GL5 oil for long gear wear under extreme load conditions.

Longest output shaft (steel) — exclusive to Valley® gearboxes. Provides extra clearance between the gearbox and wheel flange, reducing mud buildup, resulting in reduced seal damage and extended gearbox life. Special offset rims position the tire back close to the gearbox to minimize bearing loads… another Valley® exclusive.

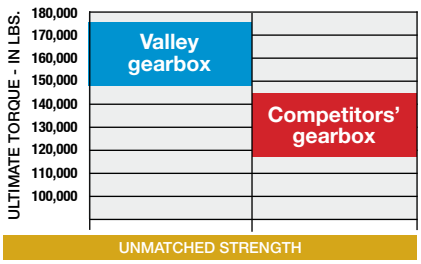
All these factors add up to one thing — the best gearbox in the industry, giving you long, trouble-free economical equipment life.

The Valley Gearbox vs. Competitors' Gearbox

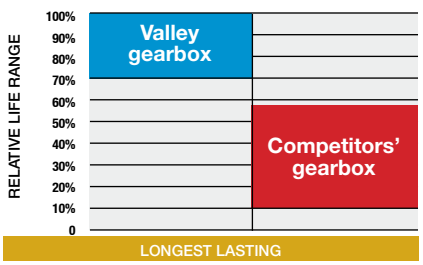
Tooth Comparison



Gearbox Ultimate Output Torque Test



Accelerated Gearbox Life Comparison



Input and output bearings — Chinese through-hardened bearings.

Worm gear — high strength ductile iron provides significantly longer wear life than steel when combined with a cast iron bull gear.

Tooth Design — 14½° tooth angle

Shorter bull gear neck and keyway — matching non-Valley gearboxes

*Only available on 7000 series
Available in US and Canada only

Expansion chamber — large open volume to minimize internal pressure changes with temperature changes.

Shims — used to set bearing preload.

52:1 gear ratio — full recessed tooth design keeps oil between engaged gears.

Long output shaft — exclusive to Valley gearboxes. Provides extra clearance between the gearbox and wheel flange, reducing mud buildup, resulting in reduced seal damage and extended gearbox life. Special offset rims position the tire back close to the gearbox to minimize bearing loads…another Valley exclusive.

Gearbox Comparison

Gearbox Features	Valley Gearbox Benefits	VS-7000 Benefits
Superior design	Three times the life of competitive gearboxes based upon independent tests	Longer life than non-Valley gearboxes
Bull gear	20% higher torque capacity based on independent tests	Comparable to non-Valley gearboxes
Special offset rims	Positions tire close to gearbox to minimize bearing loads for longer life	Positions tire close to gearbox to minimize bearing loads for longer life
Input and output bearings	American made and case hardened; Industry's highest load rating for longer life	Through-hardened resulting in lower rating – comparable to non-Valley gearboxes
Gearbox housing	More material in high stress areas to handle extreme operating conditions	Comparable to non-Valley gearboxes
Bronze bull gear option	Provides additional load capabilities with hardened steel worm for extreme operating conditions or extended life under less severe conditions	Not available

VS-7000 Gearbox – 7000 series

Drive Units for Every Application

4-Wheel Articulating Track Drive

Feature	Benefit	2-Wheel Drive	3-Wheel Drive	Track Drive	Articulating 4-Wheel Drive	Articulating Track Drive
Four drive braces on each side	Improves span alignment when crossing deep ridges, balances the load	●	●	●	●	●
Wide wheel base	Improved span stability on rolling ground & in windy conditions	●	●	●	●	●
Wide range of tire sizes	Traction & floatation options to match your field conditions	●	●		●	
Three driven tires	More traction to help prevent stuck drive units		●			
Heavy duty base beam	Strength to support center tires on ridges		●	●		
Increased traction	Helps prevent stuck drive units		●	●	●	●
Heavy duty steel tracks	Distributes weight over a wider area than tire options, minimizing ground pressure			●		●
Increased floatation	Lower ground pressure, minimizes soil compaction and rut depth			●		●
Rough ground capability	Maneuver through varying field conditions	●			●	●
Articulating drive base beams	Both tracks or tires maintain contact with the ground and can follow sudden changes in field terrain				●	●
Two center drives	Reduces motor load for longer life				●	●
4-wheel drive tires	All four tires are driven providing better traction and less downtime				●	●
Four tires on the ground	Half the weight per tire for reduced soil compaction and reduced wheel rut depth				●	
Tracked drive unit with longer wheel base	Increased track length for more floatation					●
Adaptable to tracks	Can add tracks in the future with minimal effort				●	
Base beam only option	Purchase base beam with new machine for low cost upgrade if needed in the future		●	●		
Conversion packages	Retrofit existing Valley drive units		●	●	●	●

Drive	Traction (Prevent Getting Stuck)	Floatation (Reduce Wheel Rut)	Rough Ground Capabilities	series Availability
2-Wheel	Good	Good	Best	5000*, 7000*, 8000
3-Wheel	Better	Good	Better	7000*, 8000
4-Wheel Track Drive	Best	Best	Good	8000 Only
4-Wheel Articulating	Best	Better	Best	8000 Only
4-Wheel Articulating Tracked Drive	Best	Best	Best	8000 Only

*5000 and 7000 series only available in US and Canada

3-Wheel Drive

Stator — can be replaced independent of rotor, and is held in place with corrosion-resistant, stainless steel bolts for easy maintenance

Large 1 3/16" motor shaft

Pinion gear— integral with motor shaft

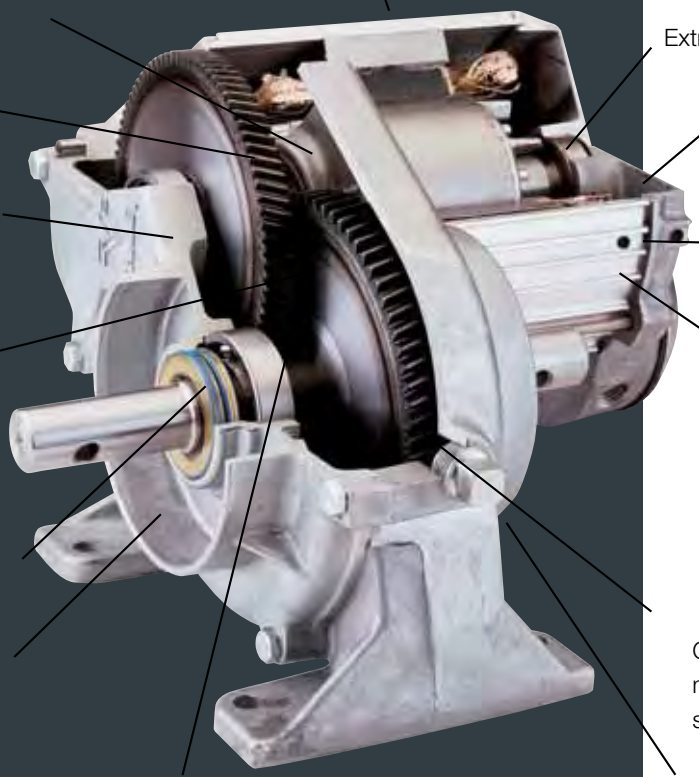
Extra-large intermediate gear bearings — assure longer life

25° gear tooth angles— provides 40% greater load capacity and wear resistance than other manufacturers' 14 1/2° tooth angles

Double output shaft seals

Built-in crop guard over U-joint— prevents crop wrapping in or near oil seals

Double reduction gearing— requires fewer gears, shafts and bearings for greater reliability and efficiency



Extra-large motor bearing

Exclusive coating — applied to internal surfaces to prevent corrosion

Watertight seal— between housing components

Finned aluminum housing— for cool-running efficiency. Operates at temperatures 20° F (11° C) lower than comparable motors with steel housing, because the Valley aluminum housing and fins dissipate heat more effectively. This doubles insulation life and increases motor life

Case-hardened steel helical gears— more teeth meshed at all times for smoother power transmission.

Drain plug— easily accessible, extra large

Center Drive Features	Center Drive Benefits
Steel gears	Provide more strength than powdered metal
Internally vented junction box	Prevents moisture and contaminants from corroding the wire connections
Integral pinion gear	Eliminates coupler, improves reliability
Helical gears	More tooth contact than spur gears, providing more torque capacity and quieter operation
Special motor windings for high-torque applications	40% higher operating torque than the competition

Valley Motor Shield

The Valley Motor Shield is made out of a tough flexible material which protects your center drive from livestock, weather and corrosive water. Your motor will be completely covered while the vents on the bottom and top ensure that your motor stays cool and dry. The cover can be easily removed when it is time to service your machine.

The VS-7000 center drive offers the performance you have come to expect from Valley but at a lower price. The VS-7000 is similar to the original Valley center drive except that the VS-7000 has a corrosion resistant painted steel housing.

- Same performance specifications
- Same helical gearbox
- Same amp draw
- Same torque rating

* Not available on the 8000 series. Only available in US & Canada

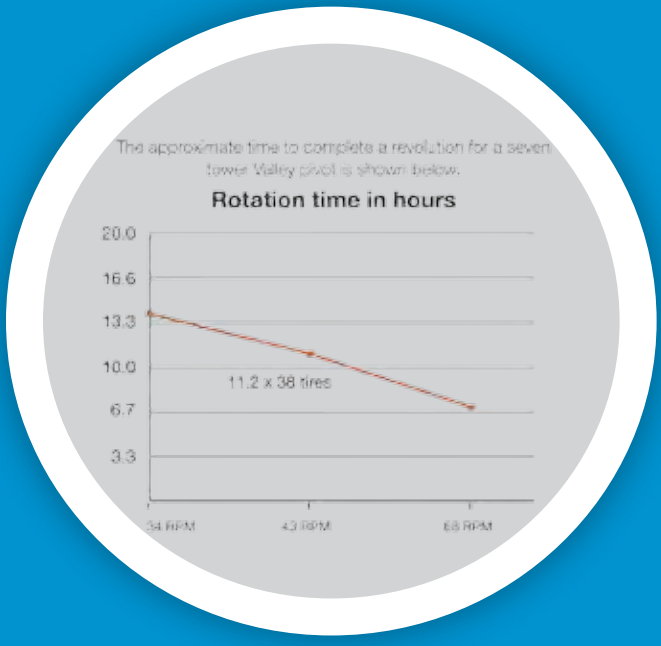
In the Valley tradition of continuously improving our products, the center drive has been designed to be the most reliable and energy efficient unit available today.

Field and Accelerated Test Results

- The Valley center drive averages three times the life of competitive center drives.
- 40% higher torque rating than competition
- Highest efficiency available
- Lowest power consumption available

Valley offers a wide selection of center drive options to match your farming practices.

Center Drive Application Guide	
Model	**Recommendations**
34 RPM	Standard quarter mile machines where chemigation will not be used; lowest power requirement in the industry means energy savings
68 RPM	Long machines or when chemigation will be used; reduces time required to apply chemicals and move the pivot
43 RPM	Replacement for non-Valley machines Not available with VS-7000



VS-7000 – Center Drive Choice

2-Wheel Drive

Floatation

Option	Ground pressure	Traction	Comments
11.2 - 24	38 PSI	GOOD	Recommended for sandy soils and limited operating hours
11.2 - 38	27 PSI	GOOD	Maximum base beam clearance and narrow wheel track; Non-directional tires available
14.9 - 24	22 PSI	GOOD	Increased base beam clearance, a wider, shallower wheel track; Non-directional tires available
16.9 - 24	22 PSI	GOOD	Increased base beam clearance, a wider, shallower wheel track
18.4 - 26	18 PSI	GOOD	Maximum base beam clearance, a wider, shallower wheel track
18.4 R 26 Radials	12 PSI	GOOD	Radial tire for minimum ground pressure with a tire, plus maximum base beam clearance
3-Wheel Drive	Variable	VERY GOOD	Three driven tires provide increased traction; recommend with 11.2 - 38 tires
Articulating 4-Wheel	17 PSI	BETTER	Articulating four wheel drive keeps all four wheels on the ground
Track Drive	9.3 PSI	BEST	Lowest cost tracked option with excellent floatation and traction Not for operating over terraces or short ditches
Articulating Track Drive	5.5 PSI	BEST	Articulating four wheel drive keeps all four wheels on the ground

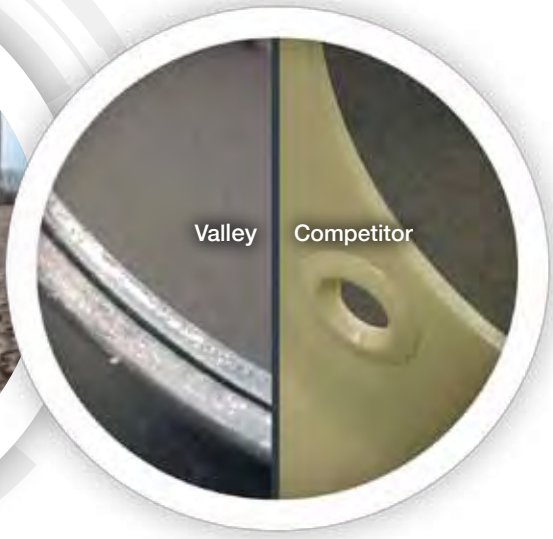
Valley Exclusives

11.2 - 38 Tire Rim

Valley tire rims bring the center line of the tire closer to the gearbox bearing which increases bearing life. Many competitors use narrower rims to save money.

Firestone Champion Hydro Non-Directional

Non-directional tread design gives improved traction in both directions and is designed to reduce rutting. Available in sizes 11.2 - 38 and 14.9 - 24.



11.2 - 38 Tire Rim

Extra backup plate added to provide significantly longer life under all field conditions. Thinner rim has less strength.

valmont IRRIGATION

See your local authorized Valley dealer for complete details.