



RIP GRIP

HYDRA-SPREAD

YOU DIDN'T THINK
WE WERE FINISHED,
DID YOU?

XV EXTRAVERT



SERIES II 227



SPECIFICATIONS

- Cu. Ft. Struck Level (ASAE S324.1): 236
- Cu. Ft. Heaped 15" Above Beater (ASAE S324.1): 374
- Heaped Bushels (ASAE S237.1): 368
- Inside Width (Inches): 71.5
- Inside Depth (Inches): 34
- Inside Length (Feet) (ASAE S324.1): 14
- Overall Length (Feet): 24

Overall Width

- 305 x 22.5 Truck Type Tires: 116
- 425 x 22.5 Truck Type Tires: 124
- 16.5L16.1 Rib Implement: 125
- 44/18.00x20 Traction Implement: 136
- 550/60x22.5 Traction Implement: 136
- for complete overall dimensions visit www.hydra-spread.com

- Axle Type: **Tandem**
- Wheel Spindle Diameter (Inches): 3
- Wheel Hub Type: **8 Bolt**
- Wheel Hub Capacity: **12000 Lbs**
- Tandem Spindle Diameter (Inches): 4
- Drop Axles: **Optional 6" Drop**
- End Gate: **Standard**
- Beater Pan: **Standard**
- Wood Rails: **Standard**
- Beater Configuration: **Stepped**
- Lower Beater Diameter / Speed: **24 / 385**
- Upper Beater Diameter / Speed: **16 / 360**
- 540 PTO / 1 1/4-6: **Avail.**
- 1000 PTO / 1 1/2-21: **Avail.**
- 1000 PTO / 1 3/4-20: **Not Avail.**

SERIES II 2277



SPECIFICATIONS

- Cu. Ft. Struck Level (ASAE S324.1): 270
- Cu. Ft. Heaped 15" Above Beater (ASAE S324.1): 429
- Heaped Bushels (ASAE S237.1): 421
- Inside Width (Inches): 71.5
- Inside Depth (Inches): 34
- Inside Length (Feet) (ASAE S324.1): 16
- Overall Length (Feet): 27

Overall Width

- 305 x 22.5 Truck Type Tires: 116
- 425 x 22.5 Truck Type Tires: 124
- 16.5L16.1 Rib Implement: 125
- 44/18.00x20 Traction Implement: 128
- 550/60x22.5 Traction Implement: 136
- for complete overall dimensions visit www.hydra-spread.com

- Axle Type: **Tandem**
- Wheel Spindle Diameter (Inches): 3
- Wheel Hub Type: **8 Bolt**
- Wheel Hub Capacity: **12000 Lbs**
- Tandem Spindle Diameter (Inches): 4
- Drop Axles: **Optional 6" Drop**
- End Gate: **Standard**
- Beater Pan: **Standard**
- Wood Rails: **Standard**
- Beater Configuration: **Stepped**
- Lower Beater Diameter / Speed: **24 / 385**
- Upper Beater Diameter / Speed: **16 / 360**
- 540 PTO / 1 1/4-6: **Avail.**
- 1000 PTO / 1 1/2-21: **Avail.**
- 1000 PTO / 1 3/4-20: **Not Avail.**

SERIES II 277



* Shown with beater



SERIES II 2414



SPECIFICATIONS

- Cu. Ft. Struck Level (ASAE S324.1): 270
- Cu. Ft. Heaped 15" Above Beater (ASAE S324.1): 429
- Heaped Bushels (ASAE S237.1): 421
- Inside Width (Inches): 71.5
- Inside Depth (Inches): 34
- Inside Length (Feet) (ASAE S324.1): 16
- Overall Length (Feet): 27.4

Overall Width

- 305 x 22.5 Truck Type Tires: 116
- 425 x 22.5 Truck Type Tires: 124
- 16.5L16.1 Rib Implement: 125
- 44/18.00x20 Traction Implement: 128
- 550/60x22.5 Traction Implement: 136
- for complete overall dimensions visit www.hydra-spread.com
- Axle Type: Tandem
- Wheel Spindle Diameter (Inches): 3
- Wheel Hub Type: 8 Bolt
- Wheel Hub Capacity: 12000 Lbs
- Tandem Spindle Diameter (Inches): 4
- Drop Axles: Optional 6" Drop
- End Gate: Standard
- Beater Pan: Standard
- Wood Rails: Standard
- Beater Configuration: Stepped
- Lower Beater Diameter / Speed: 25.6 / 385
- Upper Beater Diameter / Speed: 18 / 360
- 540 PTO / 1 1/2-6: Not Avail.
- 1000 PTO / 1 1/2-21: Avail.
- 1000 PTO / 1 1/2-20: Avail.

SPECIFICATIONS

- Cu. Ft. Struck Level (ASAE S324.1): 428
- Cu. Ft. Heaped 15" Above Beater (ASAE S324.1): 547
- Heaped Bushels (ASAE S237.1): 550
- Inside Width (Inches): 71.5
- Inside Depth (Inches): 53.5
- Inside Length (Feet) (ASAE S324.1): 16
- Overall Length (Feet): 27.4

Overall Width

- 425 x 22.5 Truck Type Tires: 126
- 550/60x22.5 Traction Implement: 138
- 700/50x22.5 Traction Implement: 149.5
- for complete overall dimensions visit www.hydra-spread.com
- Axle Type: Tandem
- Wheel Spindle Diameter (Inches): 4
- Wheel Hub Type: 10 Bolt
- Wheel Hub Capacity: 16000 Lbs
- Tandem Spindle Diameter (Inches): 5
- Drop Axles: Optional 5" Drop
- End Gate: Standard
- Beater Pan: Standard
- Wood Rails: Standard
- Beater Configuration: Stepped
- Lower Beater Diameter / Speed: 25.6 / 385
- Upper Beater Diameter / Speed: 25.6 / 280
- 540 PTO / 1 1/2-6: Not Avail.
- 1000 PTO / 1 1/2-21: Avail.
- 1000 PTO / 1 1/2-20: Avail.



EXTRAVERT
3290

EXTRAVERT
3440

- Cu. Ft. Struck Level (ASAE S324.1): 290
- Heaped Bushels (ASAE S237.1): 425
- Inside Width (Inches): 67
- Inside Depth (Inches): 40
- Inside Length (Feet) (ASAE S324.1): 16
- Overall Length (Feet): 27.4

Overall Width

- 305 x 22.5 Truck Type Tires: 112
- 425 x 22.5 Truck Type Tires: 120
- 16.5L16.1 Rib Implement: 125
- 44/18.00x20 Traction Implement: 124
- 550/60x22.5 Traction Implement: 132
- for complete overall dimensions visit www.hydra-spread.com
- Axle Type: Tandem
- Wheel Spindle Diameter (Inches): 3
- Wheel Hub Type: 8 Bolt
- Wheel Hub Capacity: 12000 Lbs
- Tandem Spindle Diameter (Inches): 4
- Drop Axles: Optional 6" Drop
- End Gate: Standard
- Wood Rails: Standard
- Beater Configuration: Vertical
- Vertical Beater Diameter / Speed: 34.6 / 420
- 540 PTO / 1 1/2-6: Not Avail.
- 1000 PTO / 1 1/2-21: Avail.
- 1000 PTO / 1 1/2-20: Avail.

- Cu. Ft. Struck Level (ASAE S324.1): 440
- Heaped Bushels (ASAE S237.1): 550
- Inside Width (Inches): 67
- Inside Depth (Inches): 59.5
- Inside Length (Feet) (ASAE S324.1): 16
- Overall Length (Feet): 27.4

Overall Width

- 425 x 22.5 Truck Type Tires: 122
- 550/60x22.5 Traction Implement: 134
- 700/50x22.5 Traction Implement: 145.5
- for complete overall dimensions visit www.hydra-spread.com
- Axle Type: Tandem
- Wheel Spindle Diameter (Inches): 4
- Wheel Hub Type: 10 Bolt
- Wheel Hub Capacity: 16000 Lbs
- Tandem Spindle Diameter (Inches): 5
- Drop Axles: Optional 5" Drop
- End Gate: Standard
- Wood Rails: Standard
- Beater Configuration: Vertical
- Vertical Beater Diameter / Speed: 34.6 / 420
- 540 PTO / 1 1/2-6: Not Avail.
- 1000 PTO / 1 1/2-21: Avail.
- 1000 PTO / 1 1/2-20: Avail.

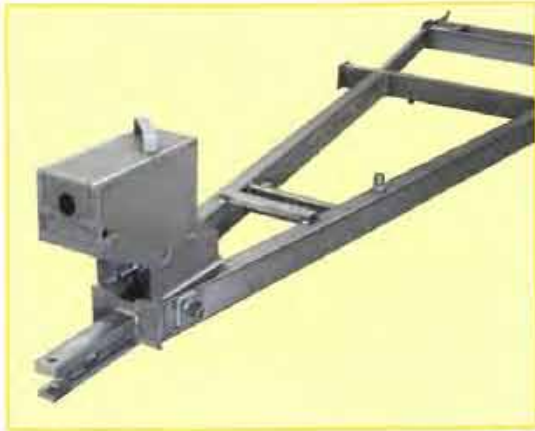


First, we built the best box.

Farmers said they wanted a big spreader that performs well. They said it should be a simple design that requires minimum maintenance and doesn't break down. We responded with Hydra-Spread.

A strong frame is the foundation of every Hydra-Spread. The stresses on today's manure spreader frame are unique and immense. The spreader must absorb the impact of heavy loads dropped from increasing loader heights, transport huge loads further over rough terrain and contain all the forces of the unloading and spreading processes.

Hydra-Spread's frame is made, using a variety of high-strength materials and unique construction techniques, with incredible strength to handle big loads while retaining the flexibility to avoid stress fatigue and cracking. Main frame, sidewall structure, axle frame and hitch frame are engineered, using structural tubes, channels, beams, plates and formed sections, to blend seamlessly into a single unit.



TONGUE (A-FRAME)

Serves three functions:

- It pulls the spreader.
- It transfers weight from the spreader to the tractor
- Anchors the front end of the push-off cylinder, harnessing forces reaching nearly 38,000 pounds

The tongue of every Hydra-Spread is made from two sections of structural tube, cross braced with two additional sections of structural tube to make a very strong and extremely rigid frame.

A superbly balanced blend of materials and design gives Hydra-Spread great strength, the best weight distribution in the industry and the flexibility to absorb stress and prevent frame cracking that is required in a large mobile frame. The result is a frame that truly is engineered for stability and safe operation with an outstanding ability to handle the stress of heavy loads and rough terrain.

MAIN FRAME RAILS: Main frame rails must have good strength in all directions: vertical strength for load bearing, horizontal strength to provide stability to the machine platform, and torsional strength to support the sides of the box. Hydra-Spread uses structural tubes in the frame of all models. Only structural tubes have vertical strength to carry heavy loads and torsional strength to support the sides of the machine.



AXLE FRAMES: Bolted axle designs have more capacity to absorb the stresses and impacts of heavy loads. Hydra-Spread axle frames are bolted to the main frame with a heavy flange which disperses stresses over a large area virtually eliminating frame damage.





FLOOR SUPPORTS

Strength of, and number of floor supports (cross members) are important factors in the design of a manure spreader. Floor loads run as high as 335 pounds per square foot. The impact of a load dumped from full height can be several tons. Our cross members are larger profile and we use lots of them. Cross members also provide additional torsional strength to the main frame rails, which means stronger sides. Like all Hydra-Spread structural components, the cross members are high-strength steel.



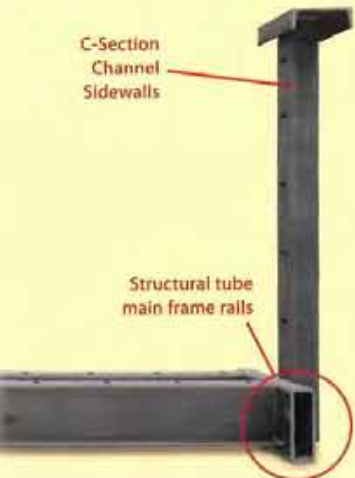
SIDEWALL STRUCTURE

You can actually remove the beaters from a Hydra-Spread and use it as a push-off manure-hauler without worrying about sidewall strength because that is the way it was designed. Hydra-Spread frames are designed to support the sides of the machine without bulky horizontal members and without relying on the beaters to tie things together.



C-Section
Channel
Sidewalls

Structural tube
main frame rails



PLASTIC BOARDS: The floor and sides of a manure spreader require a material that is strong, flexible, resistant to environmental degradation and very slippery. Hydra-Spread's poly-boards meet all of these requirements. Full-length boards make a smooth, obstruction-free surface for easy unloading. Flush-head fasteners, designed by Hydra-Spread and manufactured specifically for us, leave the inside of the box smooth and clean. Boards are tongue & grooved (even the sides are tongued into the floor) to make a strong, almost water-tight floor. Frame designs feature expansion slots to accommodate the expansion and contraction that is common to plastic materials.



Next, we figured out how to empty it.

Our drivetrain is designed to be easy to maintain and service.

DRIVETRAIN: In the 1970s, Hagedorn pioneered the use of splined shafts for high-horsepower snow blowers. Today, every shaft connection in the Hydra-Spread drivetrain - from the tractor to the upper beater - is splined. Splines transmit power efficiently by spreading loads to the entire shaft (unlike keyed drives that focus the load on a single stress point). Splines can be quickly and easily assembled and disassembled.

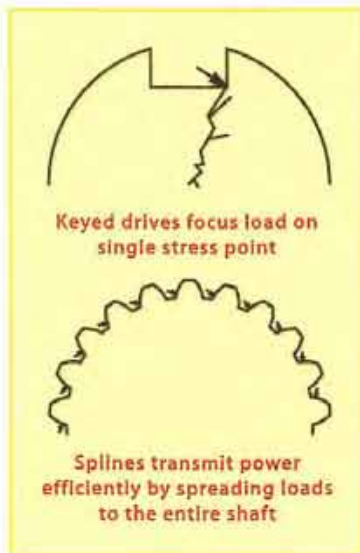


2 piece bearing holders allow shafts to be removed from the frame with bearings intact



Gearbox connected to input and cross shafts by splined couplers

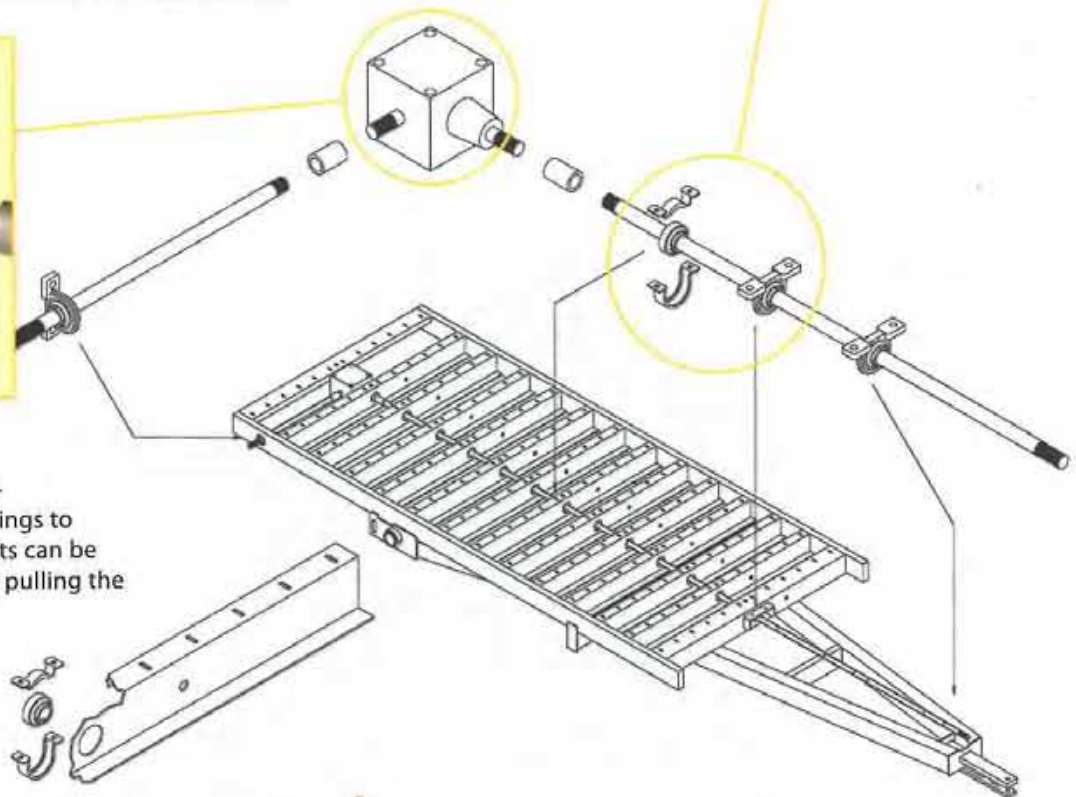
SHAFTS: Shafts are 1045 steel, precision ground to ensure straightness, balance and precise fit of bearings to shaft. When service is required, shafts can be removed from the machine without pulling the bearings from the shaft.



Keyed drives focus load on single stress point

Splines transmit power efficiently by spreading loads to the entire shaft

GEARBOXES: For strength and durability in gearboxes Hydra-Spread went to Comer, a world leader in gearboxes. Comer gearboxes feature one-piece cast-iron housings for strength and precise alignment of shafts, gears and bearings. For our ExtraVert vertical beater units we chose BERMA, a world leader in vertical beater technology, to supply the gearboxes and beaters for our industry-leading designs.



PTO SHAFTS: Hydra-Spread uses only Walterscheid PTO shafts. The heart of our PTO is its splined telescoping members. Ordinary shafts have two, three or at best four driving surfaces and do not telescope freely enough for the demands of today's manure spreader. Our splined shaft has 20 driving surfaces, a precise fit and telescoping that cannot be matched by roll-formed profile tubes.

The PTO shaft connects to the machines (just like it connects to your tractor) with a splined shaft so it can be easily installed or removed. The PTO shaft incorporates a shear bolt clutch - the simplest, most dependable form of overload protection.



BEARINGS

The life of a bearing is, in most cases, determined by the quality of its seals. Hydra-Spread uses NTN bearings with triple-lip seals. These seals have been proven in tillage and planting equipment. NTN created pillow block units with triple-lip seals especially for Hydra-Spread: another industry first.

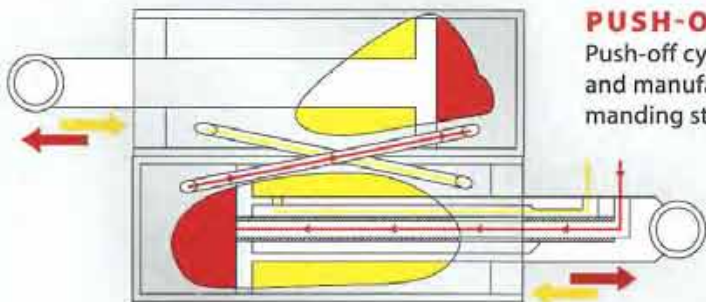
Our bearings are lifetime-lubricated, assuring long life and eliminating bearing maintenance. All Hydra-Spread bearings have an extended inner race with double set screws.



HOUSINGS

Ductile iron pillow blocks are the standard for Hydra-Spread. These virtually indestructible units are built to withstand heavy loads and impacts that would shatter ordinary grey-iron housings.

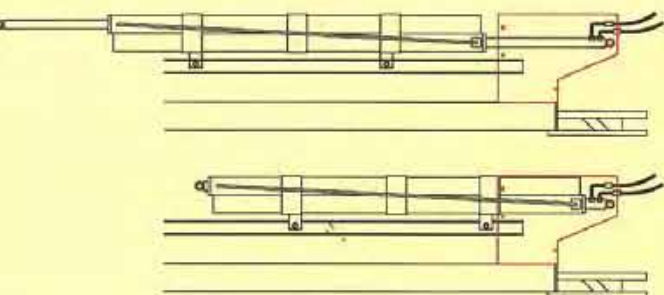
For the input shaft, we demanded split housings that would allow the shaft to be removed from the machine quickly and easily without removing the bearings from the shaft. When no suitable housing was available we designed and manufactured our own so we could continue our commitment to a simple, easy to service spreader.



PUSH-OFF CYLINDERS

Push-off cylinders are custom-engineered and manufactured to Hydra-Spread's demanding standards. Like all Hydra-Spread hydraulic components, these cylinders are designed for 3000 PSI operating pressure. Our hollow rod design allows oil flow for extend and retract cycles to be channelled through the rod, eliminating

the tangle of hoses that would otherwise be involved when the cylinder strokes. The cylinder uses a rugged ball-type sealing system that easily handles the flexing that is inevitable in a cylinder with a fifteen foot stroke. Pistons and glands are high-grade ductile iron for maximum strength and wearability. The external oil conductor tubes are stainless steel.



Push-off cylinder in mid-stroke position

Push-off cylinder in retracted position



HOSES & FITTINGS

All hoses and fittings are industry standard SAE (O-ring) or JIC (37 degree flare) fittings. There are no pipe threads. All hoses and fittings are rated for 3000 PSI operation.

Machines are supplied with poppet style ISO male tips from reputable North American suppliers such as Parker and Safeway. Rubber hoses eliminate the corrosion problems that can destroy steel lines and, in the event of damage, can be easily replaced without ordering special parts.

CONTROL VALVE: Hydra-Spread uses a custom-designed flow control valve for precise control of application rate. Engineered and manufactured exclusively for Hydra-Spread, the valve works well with all types of hydraulic systems and includes an internal bypass for quick return regardless of unloading speed. Like all Hydra-Spread components the valve is engineered and built for today's powerful tractors.



ENDGATE CYLINDERS

For the endgate Hydra-Spread uses industry standard tie-rod cylinders. Like all our hydraulic components, these cylinders are designed for 3000 PSI operation.



Then, we
thought
outside
the box.

Solid Manure is fast being re-discovered as a valuable source of plant nutrients.

Solid Manure is fast being re-discovered as a rich and valuable source of plant nutrients and soil-building organic matter. In 1908, a government publication put the value of manure produced

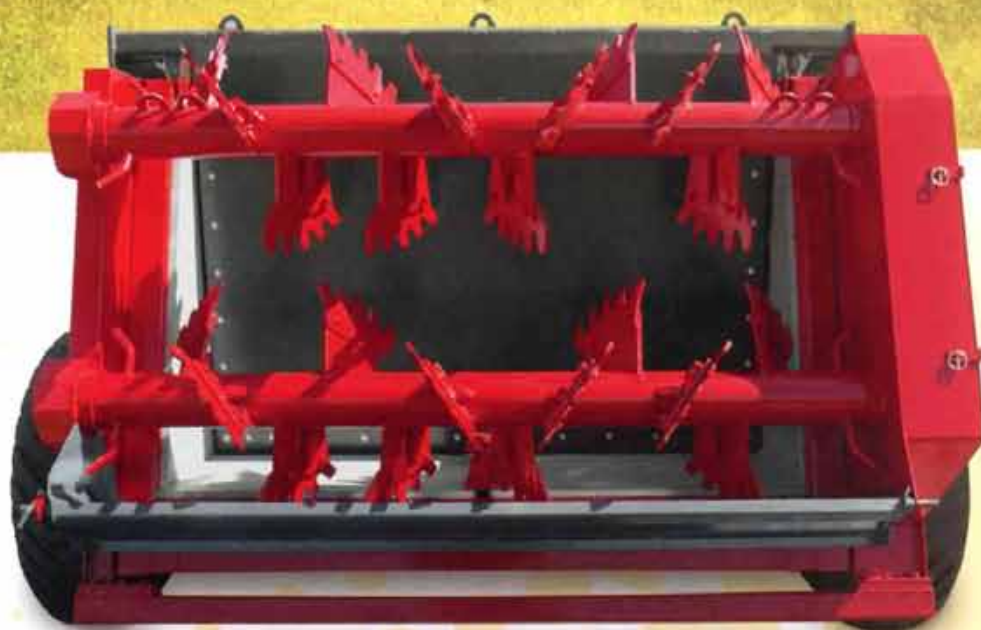
on U.S farms at \$2.35 billion per annum. In 2006 crop scientists put the value of a mid-sized load of manure (Hydra-Spread 2277 or 3290) at \$100 to \$200.

Hagedorn started building Hydra-Spread to meet farmers' need for a simple, reliable and serviceable manure spreader. Today, farmers' needs are changing. Managing your manure resource, for optimum return, means applying



manure at a rate the soil can store and plants can use. Whether your need is for a fine, uniform spread that is nearly invisible on the ground or a more robust application, Hydra-Spread delivers.

At Hydra-Spread, we are committed to providing the innovations and improvements you need to get the results you want.



Conventional looking, unconventional thinking.

RIP GRIP

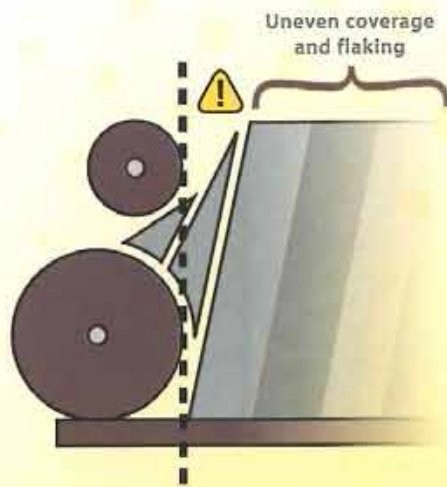
The successful spreading of solid manure is a combination of a consistent and controllable pushoff, and an effective means of spreading. Since Hydra-Spread's introduction in 1990, we have worked continually to improve the way these systems integrate and perform. With our hydraulic system proving to be one of the strongest, most reliable and most controllable systems available, we turned our attention fully to the beaters and paddles.

The successful spreading of solid manure is a combination of a consistent and controllable pushoff, and an effective means of spreading. Since Hydra-Spread's introduction in 1990, we have worked



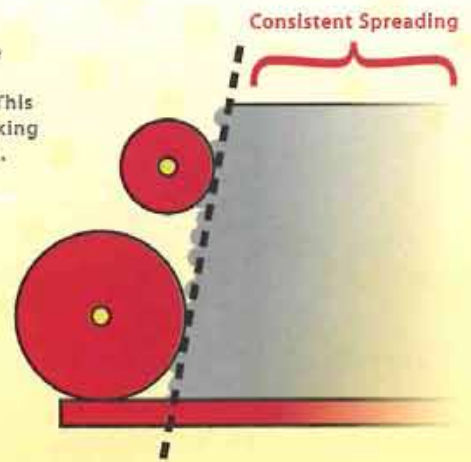
RIP GRIP: RipGrip paddles are designed to give you more spreading control and less mess. The aggressive shape scoops up sloppy semi-solids or rips through tough pen pack with equal ease. The unique shape holds the manure a fraction of a second longer than our earlier designs. The result is manure discharged to the rear instead of upward, a more uniform pattern on the ground, and less manure on the tractor.





◀ Traditional beater configuration places the upper beater directly above the main beater. This configuration allows flaking and uneven distribution.

Hydra-Spread's Stepped Beater design moves the upper beater forward. Material is removed before flaking can occur, resulting in a more consistent distribution. ▶



STEPPED BEATERS: Conventional beater configuration places the upper beater directly above the main beater. In some conditions, manure from the upper part of the load can break away and tumble into the lower beater before it reaches the upper beater. This can cause a light/heavy/light spread pattern. Conventional wisdom

holds that the push-gate must be perpendicular to the floor; beaters must conform to the push-gate.

Designers believed the solution was to add a beater pan and focus on improved beater designs. With Series II Hagedorn challenged traditional assumptions and developed our stepped beater configuration. To solve the box cleanout problem we sloped the pushgate to match the beaters. Stepped beaters remove and spread manure before it can break away resulting in a more uniform spread pattern. Stepped beaters throw better.

With traditional beater arrangements the upper beater can block the path of manure thrown by the main beater. With stepped design each beater has a clear path to throw manure farther and more uniformly.



A whole new way to spread.

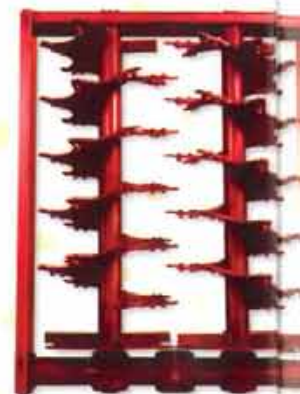
Extravert [n] - *(psychology)* concerned more with practical realities than with inner thoughts and feelings.

That pretty much sums up Hydra-Spread's newest family member. You asked for a way to spread solid manure finer, and while we were at it, could it be a little wider too. We answered. **Extravert**.

EXTRAVERT

From the moment you see its unapologetic stance you know this is not your father's manure spreader.

For many years vertical spreaders have been complicated and difficult to maintain. For many farmers the costs outweighed the spreading benefits. The rising cost of fertilizers, increased awareness of the value of manure and increased awareness of the benefits of vertical spreaders have forced farmers to make difficult decisions - until now. Extravert gives you sophisticated control over application and the rugged reliability you expect from Hydra-Spread.



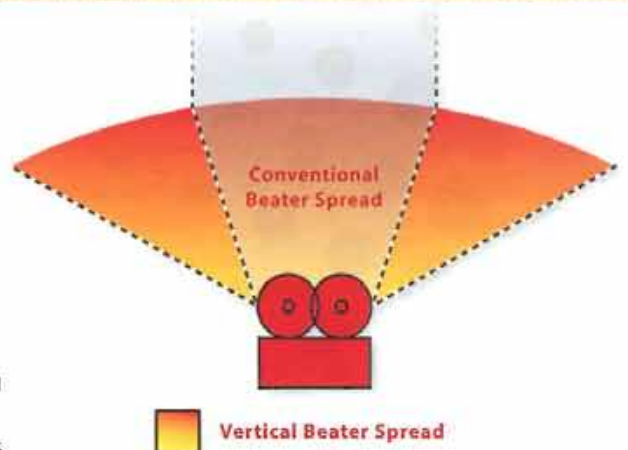
Extravert:
Spreading widths to **40 feet**



With Extravert, the benefits stretch far and wide.

With Extravert you have the ability to create the finest, most uniform spread we have seen in a solid manure spreader. With spread widths to 40 feet Extravert saves fuel and reduces soil compaction.

Hydra-Spread is the recognized leader in hydraulic pushoff technology. For vertical beater units we went to BERMA, a world leader in vertical beater design. The inevitable result of blending two leading technologies is a new industry leader. Extravert gives you performance and control you thought was impossible, allowing you to stretch your manure resource over a larger area than was thought possible with conventional spreaders.





Tread Lightly.

Today's farms are bigger with fewer hands to help. More than ever, farmers rely on increasingly bigger equipment - including today's big spreaders.

Soil compaction is quickly becoming a challenging part of the manure management equation.

Since the beginning Hydra-Spread has been a strong proponent of low-compaction, implement-rib tires. Implement-ribs were designed to meet the need for low-compaction by providing a large footprint at low inflation pressures but were never really designed to travel the distances and the speeds that have become the norm in today's farm operations. The application of implement-rib tires has been limited to small and medium-sized equipment.

Modern farming demands a tire that can deliver low-compaction in the field and stand the test of hauling heavy loads at high speeds. As is often the case (think Extravert!) we looked to Europe for a solution and in 2001 began installing traction-implement tires on our big spreaders. Traction-implement tires offer the best of both worlds. In the field they out-perform implement-ribs by delivering on low-compaction, minimum turf damage and vehicle stability. The self-cleaning tread design leaves dirt in the field where it belongs. On the road traction implement tires haul heavy loads, at high speeds, smoothly and reliably and are proven to outlast implement-rib tires by a factor of 3 to 4 times.



ALLIANCE TIRE

When we couldn't find a suitable traction implement tire for our small and medium-sized spreaders we went to Alliance Tire and had them make one so farmers could enjoy the benefits of traction implement tires on every Hydra-Spread model.

Whatever your need in manure spreader technology Hydra-Spread's designers are committed to meeting and exceeding that need.





HYDRA-SPREAD

**IMPROVING EVERYTHING
ABOUT SPREADING.**

www.hydra-spread.com | 1-800-707-7271

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Hagedorn