

**FREE!
TAKE ONE!**

2020 Edition

MIDWEST SUPER CUB



Pulling friends and family together!



1(563)659-5276

**TECHNICAL ASSISTANCE
AVAILABLE 9AM - 5PM M-F**

WWW.MWSC.CO

\$9.95 FLAT RATE SHIPPING! ONLINE ORDERS OVER \$75 SHIP FREE!

It's Easy to Order from Midwest Super Cub!

Ordering Options:

Online ordering at mwsc.co

For technical assistance or to order by phone call 1(563)659-5276

Shipping Options:

Free standard Shipping for On-Line orders over \$75.00*

\$9.95 Flat Rate Standard Shipping via UPS, Fed Ex, or USPS (our choice).

You may upgrade to UPS or Fed Ex for an additional \$5.00.

Larger items will ship UPS or Fed Ex. Extra large items will ship via Fed Ex freight to a business or the nearest Fed Ex terminal for \$125.00 in the lower 48 states.

Air Shipping via UPS & Fed Ex Available

Next Day Air, 2-Day, 3 Day Air or Saturday delivery.

Phone in your order by 11:00 AM Central Time for Next Day Air.

Payment Options:

MasterCard, Visa, Discover, Shopify or PayPal.

International Orders:

Can now be placed online. If you have questions, please call or email sales@midwestsupercub.net.

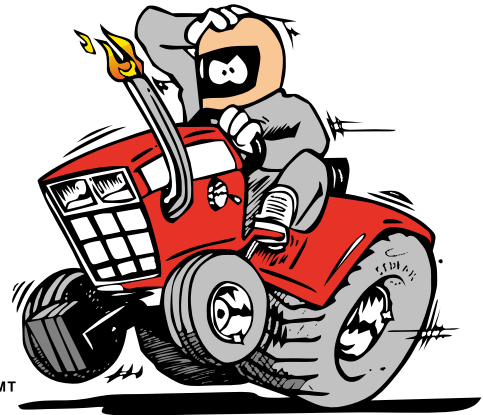
How to Make a Return:

If you are not completely satisfied, return the new/unused item in the original box prepaid within 30 days with a copy of the invoice for a refund/exchange. Send the package pre-paid UPS, Fed Ex or USPS Insured to Midwest Super Cub, 333 Welton Ave, P.O. Box 10, Welton, IA 52774. No COD or Freight collect shipments will be accepted.

Credits will be issued after we see the part and its condition and only issued for the merchandise only, no refunds on handling/shipping charges. There is a 20% RESTOCKING FEE on all returned items. NO EXCEPTIONS.

Warranty: The warranty from the various manufacturers differ and all claims will be handled by the manufacturer of the item in question. Since these are high performance parts under extreme use conditions, there is no warranty on most parts. If there is a problem call us first. Warranty Disclaimer: Purchasers understand and recognize that racing parts, specialized tractor pulling and racing equipment and all other parts and services sold by Midwest Super Cub, INC. (MWSC) are exposed to many and varied conditions due to the manner in which they are installed and used. Except for certain limited warranties, if any set forth in the MWSC current catalog, including the MWSC website with respect to the products and/or parts thereof identified on your invoice, each product and each part thereof is sold 'as is' and "with all faults" and MWSC makes no warranties either expressed or implied, written or oral, with regard to such products and service including, without limitation, any warranty of merchantability or fitness for particular purpose. Without limiting the foregoing, there is no warranty expressed or implied as to whether the goods sold hereby will protect purchasers or ultimate end-user of such products and parts from injury or death. In no event shall MWSC be liable for any special incidental or consequential damages, or any other damages whatsoever arising out of or connected with the use or misuse of the products and each part thereof. Purchasers acknowledge and agree that no person, entity or agent of MWSC has any authority to make any statement contrary to this disclaimer and that any warranty statements or representations allegedly made on behalf of MWSC by any such person, entity or agent are void. Purchasers are relying solely on their own skill and judgment to select the purchase and use suitable products and assume all responsibility and risk with regard thereto. The use of manufacturers' names and symbols are for reference purposes only.

Sales Tax: Applicable 7% sales tax is collected on sales in IA. If the parts are for resale a sales tax permit number is required for IA purchases. Taxes in other states will be added when necessary.



Technicians and sales team (pictured left) left to right: Jennie, Bryan Leslie Kyle Julie and Devin

IOWA IS A PLACE TO VISIT AND SEE.....

Julian & I are always happy to see you come for a visit. You came from Illinois, Wisconsin, Missouri, Minnesota, Indiana, Kansas, Ohio and of course Iowa to name a few. You got to meet the people you talk to on the phone when ordering, Jennie, Julie or Cathy and saw where Bryan does the fabrication of tractors and the “clean room” where the Julian, Kyle and Leslie make the horse power.

If you haven't been to our shops, and you are heading our direction stop in Monday- Thursday 9:00-5:00 CST and Friday until noon. You may want to call ahead and make sure we will be here, although, the Staff will be glad to give you a tour of our shops. Julian and I enjoy showing you our facility, whether you are a new puller or a veteran puller or someone that just wants to see what we make or where the parts come from, whatever the reason, you are welcome.

Directions: From I-80 take Hwy 61 North approximately 20 miles turn left at 260th Ave. Left at stop sign and left on Welton Ave (first left) From Dubuque, take 61 south to 260th Ave, turn right, left at stop sign and left on Welton Ave. We are the two large white buildings across from one another on Welton Ave. and we are the village post office too!

Other places that might interest you:

Welton- Buzzy's Bar & Grill (good food!), TYCOGA Winery 1.2 mile away

DeWitt - Emma Rae, Old Co-Op Antiques, other shops and restaurants

Clinton –Saw Mill Museum, Eagle Point Park, tower & lodge, Antique Mall, Smith Bros. General Store (a step back in time), Curtis Mansion-Lumber baron of Clinton, cross the river to Fulton, IL to see the Dutch community & a working Windmill-Dutch Days are in early May, Wild rose Casino -22 miles

LeClaire-Riverboat Twilight cruise the Mississippi River for 1.5 hrs or up to a 2 days cruise, Mississippi River Distilling Co., Wineries, Breweries, Antique Shops., TUGFEST (tug of war across the Mississippi in early August and the first location of the American Pickers - 35 miles

Quad Cities- 3 Casinos, John Deere Headquarters, John Deere factory, Putnam Museum, German American Heritage Center, Village of East Davenport shops. 27 miles

Dubuque-Mississippi River Museum, Steepest Railroad (Fenelon Place Elevators) two Casinos - 44 miles

Dyersville, IA Field of Dreams, National Farm Toy Museum (Ertel) - 33 miles

Pella, IA Tulip Festival -Early May- 167 miles

MIDWEST SUPER CUB, 333 WELTON AVE, WELTON, IA



John Deere 4020 Wheatland Tractor Cover Tractor

Julian Stahl-Owner of Midwest Super Cub, Inc.-Designer, consultant on details and researcher of details and purchaser of pieces and parts

Bryan O'Connell-MWSC employee -Fabricator, Designer, Metal Artist and Perfectionist

Custom Art & Signs DeWitt, IA -John Steiniger Custom Graphics

HI-Way Body Builders -Amboy, IL John Cicchetti Preparing and painting the sheetmetal

Jim Runde Upholstery, Inc Dubuque, IA Upholstery of Seat

Larry's Tractor, LLC-Clarence, IA 4020 Tractor Parts

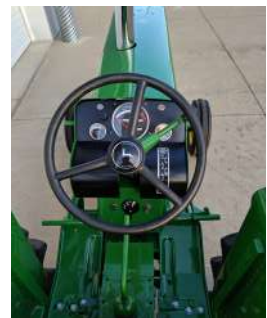


As you can see from the cover, the 4020 JD 1/2 scale tractor is complete. Midwest Super Cub had previously showed photos of progression in our last catalog, on our website and in the newsletter. The plan to show the tractor last year at the National Farm Machinery Show did not happen last year because the tractor took more hours than previously anticipated, (over 600 hours) and with Cathy having a heart attack we were unable to attend the show. We did display pictures of the progress until that time in our booth, thanks to the help of friends who assisted in getting the boards made and set up everything for us.



As we said the time it took to build the tractor to perfection, took on a life of its own. We are planning to display the JD 4020 Wheatland tractor in our booth # 2801-2802. The National Farm Machinery Show will run from February 12-15th, 2020 at the Kentucky Exposition Center, 937 Phillips Lane , Louisville, KY. We are also planning to sell it on the Mecum Auction but the date of the Fall 2020 auction has not yet been determined. We will be posting it on Facebook and announcing through our newsletter. If you are not receiving our newsletter, sign up for the newsletter on our webpage, mwsc.co

Now back to the tractor. The 4020 Wheatland JD is a 1/2 scale tractor to be used in parades or just to drive around, it is NOT built to be a tractor pulling tractor. The tractor is built with a stock three cylinder diesel motor, the tires are 1/2 the size of the original tractor. Some of the tractor parts are actually from a 4020 JD, you'll have to see if you can tell what is original or fabricated.



Any profits from the sale of this tractor at the Mecum Auction will be donated to the Future Farmers of America-FFA chapter of the buyers choice. We feel this is a win win proposition. The buyer will receive a one of a kind detailed, beautiful, tractor and the FFA Chapter will also benefit. An investment well made, so spread the word and share the Facebook post.

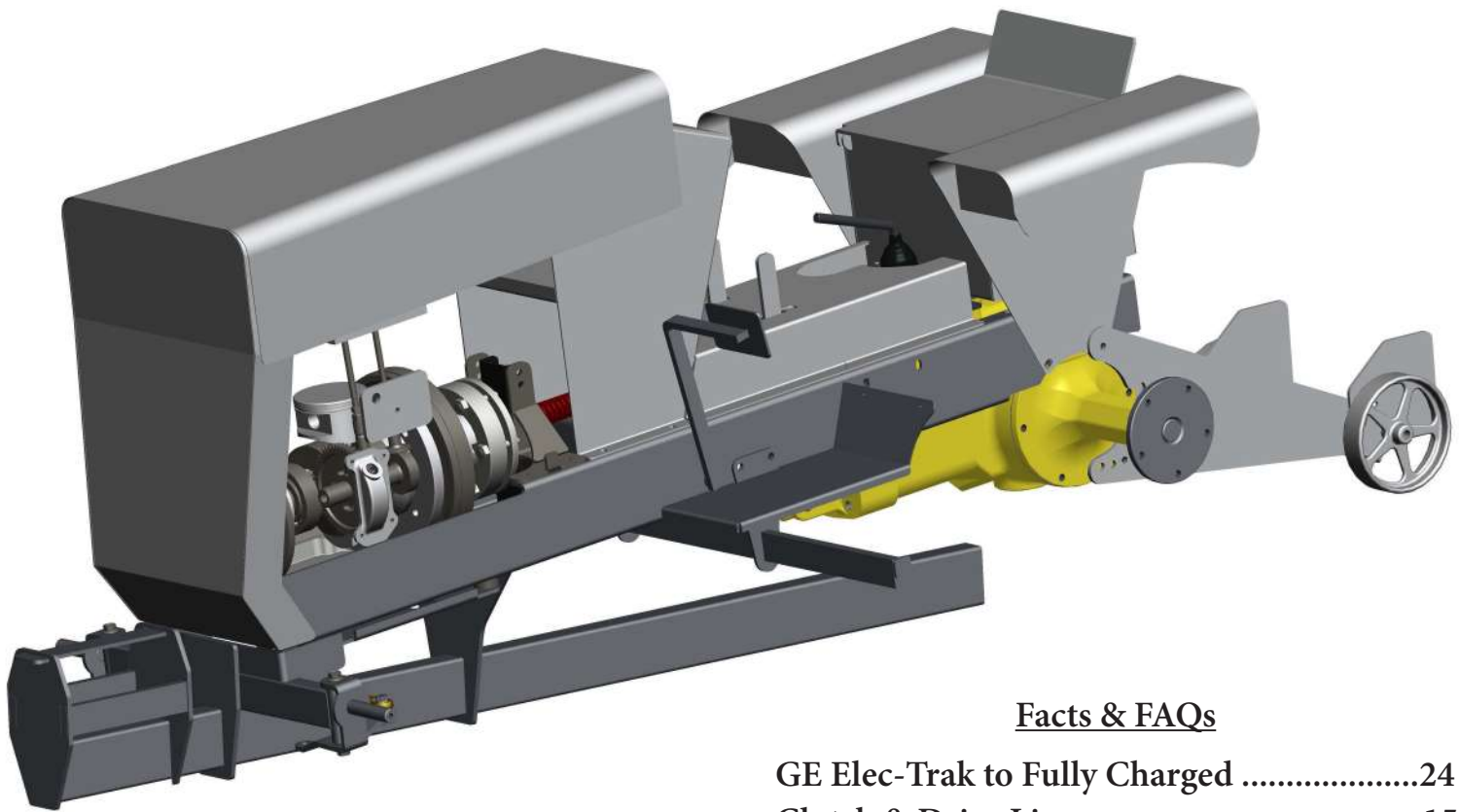


I would like to THANK everyone for their thoughts and prayers, cards, email, Facebook messages, and the calls wondering how I was and am doing since my heart attack in January. I am healthy and go back to the cardiologist in January. Julian and I have been blessed with great friends and family that extends into the pulling world. It has been a journey that has changed us forever and makes everyday a GOOD Day!

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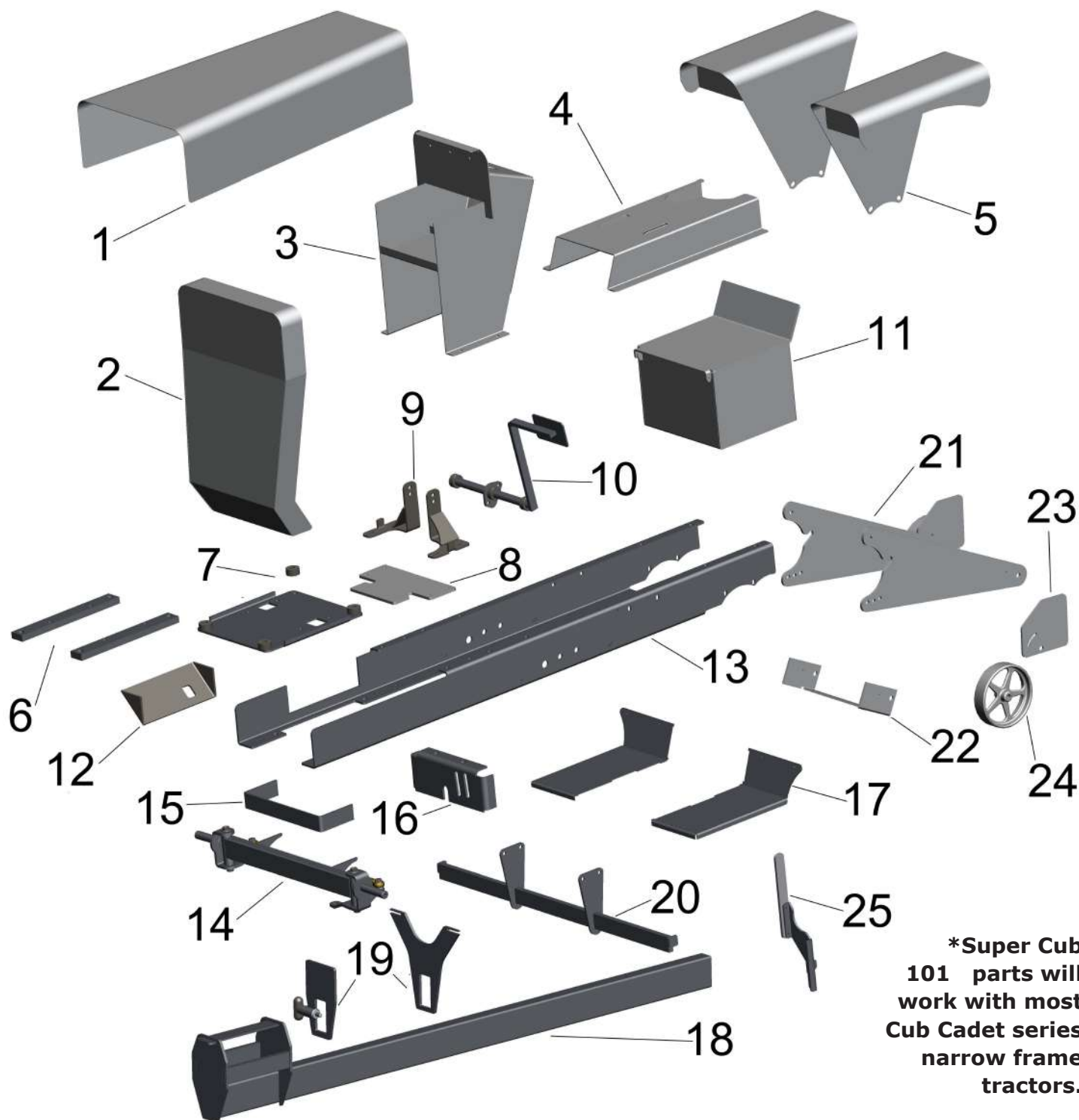
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Stahl family (pictured above) left to right:
Julian Sr., Cathy, Harrison, Julian Jr., & Erin





***Super Cub 101 parts will work with most Cub Cadet series narrow frame tractors.**

Welded Frame for Super Cub 101

Includes: #13, 14, 15, 16, 17, and 19.

**Engine plate NOT included.*

\$125 freight charge applies.

52443 52" Frame Welded

52444 56" Frame Welded.....\$1,129.90

101 Frame with Accessories

Includes: welded frame (13, 14, 15, 16, 17, and 19), 1, 2, 3, 4, 5, 9, 10, 11, 18, 20, 25. Also includes freight shipping to the Fedex terminal closest to the customer. *Does NOT include: engine plate, bottom flywheel shield, starter cut out, or wheelie bar kit. Building the 101 quick and easy start.*

\$125 freight charge applies.

52449 52" Frame with Accessories

52450 56" Frame with Accessories.....\$2,818.57

CHASSIS



1 - Aluminum Hood

For Super Cub 101 and most other narrow frame Cub Cadets. Works with grille and tower. Weighs 3 lbs. Hood measures 29 1/4" long.



51169 Hood.....\$145.77

2 - Aluminum Grille

For Super Cub 101 and most other narrow frame Cub Cadets. Weighs 4 lbs.



51170 Grille.....\$162.97

3 - Aluminum Tower Assembly

Includes battery tray for Super Cub 101 and narrow frame tractors.



51173 Tower Assembly.....\$172.25



52456 Black Rubber Grommet for tower.....\$9.52

4 - Aluminum Tunnel Cover

For Super Cub 101, also fits Cub Cadet narrow frames. Clearanced for 2 speed, hand brake, and MWSC shifter.



51181 Tunnel Cover-52 (101 frame 52" wheel base)...\$45.72

51183 Tunnel Cover-56 (101 frame 56" wheel base)...\$45.72

5 - Aluminum Fenders

This fender design resembles a 1066 IH tractor. For Super Cub 101 and standard Cub Cadets. **Not NQS legal.*



52451 Fenders.....\$167.14

Aluminum Rolled Fenders

8" wide x 36". Weighs 12 lbs. Covers tire to step. NQS legal. Sold in pairs.



52425 Rolled-Fenders.....\$157.52

6 - Single Cylinder Engine Mounts

For single cylinder motor for Super Cub 101.



52463 Engine Mount-S.....\$76.55

7 - V-Twin Engine Mount Plate

Frame will need to be notched out.



52464 Stock Frame

52465 101 Frame.....\$104.76

8 - Bottom Flywheel Shield

Mounts to frame.



51193 Bottom Shield-1 (Single cylinder - pictured)...\$28.25

51192 Bottom Shield-T (V-Twin)...\$22.70

9 - Clutch Pivot

For Super Cub 101. Also fits narrow frame Cub Cadets. These eliminate flex in the tower.



51107 Clutch Pivot.....\$77.69

10 - Clutch Arm Assembly

Includes arm, shaft collars, and pivot with holes for both clutch and brake linkage.



52454 Clutch Arm Kit.....\$108.03

11 - Aluminum Seat Box

Available for narrow and wide frame tractors.



51207 Seat Box (left) 10.75w x 8h x 9.25d.....\$133.41

52426 SB Wide 10.75w x 4.75h x 9.25d (fits wide frame & 82 series - right).....\$119.90

52969 SB (to be used with seat back) See Page 10 #10).....\$122.42

Rolled Fender Kit

Includes: rolled fenders, seat box, and seat back with fender mounts.

52970 Rolled Fender Kit.....\$435.00



\$9.95 FLAT RATE SHIPPING!

CHASSIS



12 - V-Twin Starter Cut Out Plate

Made to fit around starter for V-Twin.



51208 V-Twin Starter Cutout.....\$32.79

13 - 101 Frame Rails

For single cylinder or v-twin Kohler command engines. 56.5" long. Frame can be 52" or 56" wheel base.

51252 Bare Frame.....\$353.10

14 - Steel Front Axle

Includes: spherical ball tie rod ends and bronze bushed king pins. Spindle length: 3" (same as stock Cub spindles). For Super Cub 101 and other narrow frame Cub Cadets. Also available for 82 series and other wide frame tractors.

52142 Narrow (20" W, 1 x 2" tube axle. 26" L).....\$227.74

52143 82 (26" W, 1" x 2" tube axle. 34" L).....\$241.54

15 - Front Axle Spacer

Drops front axle 1.5". Allows for less aggressive rake.



51264 Front Axle Spacer.....\$34.19

16 - Crossmember

Ready to mount stock steering gear.



51265 Crossmember.....\$60.72

17 - Steps

Exclusively made for SuperCub 101. Can be modified to work of stock frames. 4 pieces included.



51271 Steps (52" Wheel base - pictured)

52429 Steps (56" Wheel base).....\$73.49

18 - Front Weight Bar Assembly

Holds 16 MWSC weights. 14.5" long. Tube is capable of extending up to 8' from rear axle. No brackets.

51279 FWB Assembly.....\$198.94

19 - Front Weight Bar Mounts

For Super Cub 101. Also available for narrow frame Cub Cadets (uses a different rear mount design).



51284 FWB Mount 101 (For Super Cub 101 - pictured)\$89.45

52431 FWB Mount (For stock narrow frame Cubs).....\$89.45

20 - Mid-Weight Bar

Bolts directly to stock narrow or Super Cub 101 frames. Holds 20 MWSC weights.



51288 MWB Assembly.....\$78.04

Wheelie Bar Kits

Kit includes: wheelie bar, (IH or plain) plain bumper bars, cross-brace, spoked wheelie wheels, and attaching hardware.



51328 WB Kit-IH-Spoked.....\$245.82

51332 WB Kit-Plain-Spoked.....\$225.87

21 - Aluminum Wheelie Bars

Weighs 5 lbs. Made of 1/4" T65-6061 aluminum.

**Customer must install side bracing between the two pieces to make them solid.*



52628 WB-Plain (Plain design).....\$70.91

52630 WB-IH (IH logo design).....\$77.46

22 - Wheelie Bar Cross Brace

For MWSC wheelie bars. Bolts in at rear. **Customer must install additional bolt to keep brace rigid.*



51314 WCB (For stock Cub Cadets).....\$33.80

23 - Bumper Bars

For MWSC wheelie bars. Includes two pieces. Bolts in at rear. Bumper bars are good protection from the sled climbing on the rear of the tractor (required in some clubs). **Customer must install an additional bolt to keep bar rigid.*



52633 WBB (Plain design).....\$41.22

24 - Wheelie Bar Wheels

Priced per pair. 1 1/2" wide with 1/2" hole. 6" Diameter.



52631 WBW3 Spoked wheels.....\$90.78

ONLINE ORDERS OVER \$75 SHIP FREE!

CHASSIS



25 - Hand Brake

Attaches directly to brake lever with 1 bolt. Includes aluminum handle.



51386 Hand Brake.....\$44.42

Billet Aluminum Hitch

Includes steel hitch plate. Adjustable design. Bolts on in place of transmission back plate. A gasket is recommended - Part #51987



**NQS approved.*

52122 Hitch.....\$124.95

NQS Pulling Suitcase Weights

Made of cast iron. #10 weights are 1" thick, 7" across top, 7 3/4" height, 5/8" slot, and 4 3/4" across the bottom. #5 weight is 1/2" thick.



52185 WTS (10 lbs).....\$25.20

52186 WTS5 (5 lbs).....\$21.25

Flat rate shipping available for weights!

Light Suitcase Weights

Same dimensions as #10 weight.

52187 WTA (Aluminum - weighs 3 lbs.).....\$25.15

52188 WTP (Plastic - weighs 1 lb.).....\$20.00

Kill Switch

Grounding kill switch. Includes: wiring diagram with directions on how to shut off fuel pump.



51077 KS.....\$21.70

High Velocity Cooling Fan

Draws just 2.6 amps -145 CFM. Measures a 3" circumference and 5" length. Bolts on behind engine or grille. Solid surface using rubber gromets (NOT included). Point fan at the head & Cylinder wall.



52086 CF.....\$36.54

Spring Loaded Pin

You can easily and quickly slide your front weight boom in and out with this spring loaded 3/8" pin. Easily installed; weld bung on front with bracket.



51078 SLP.....\$20.43

Steering Wheel Hub

Fits Cub Cadets and some Grant steering wheels. **New design.*



51986 SWH.....\$44.94

Gas Pedal

Designed with bronze bushing and machined slot for smooth operation.

Includes 48" cable.



52116 GP.....\$46.69

Replacement Gas Pedal Cable

51076 Cable (48").....\$19.91

51074 C-60 (60").....\$30.25

51075 C-96 (96").....\$40.37



Beginner's Hitch and Gas Pedal Kit

This kit is ideal for a beginner puller. A good hitch, gas pedal, and safety equipment is necessary for all pullers.

Midwest Super Cub's billet aluminum hitch is designed to be easily adjusted. MWSC gas pedal (with 48" cable), has a bronze bushing for smooth acceleration.

The kill switch and wheelie bars with the cross brace are a must for safety. *A bundle savings of over \$15!*



52432 GH-Kit.....\$275.00

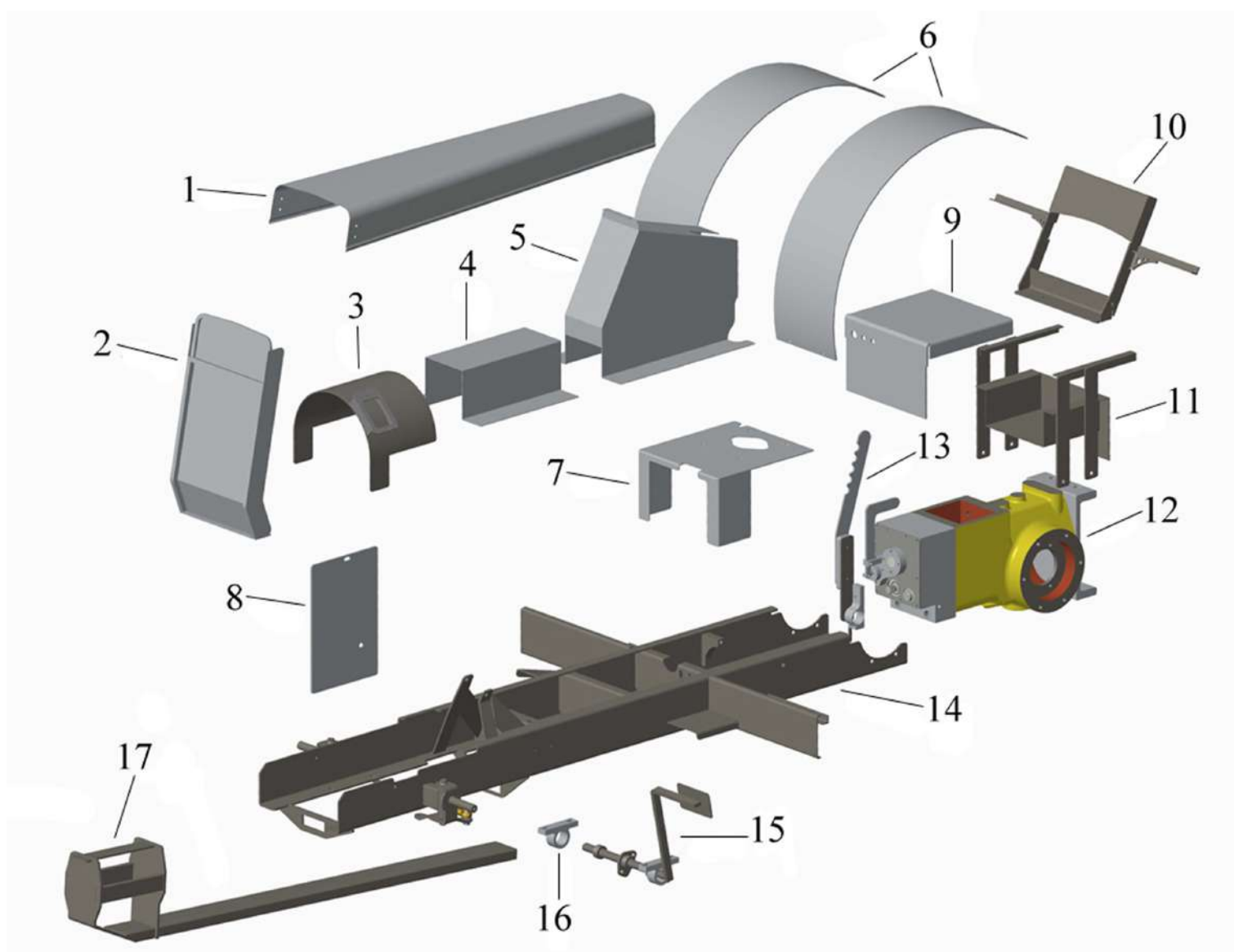
Turn Key 101 Twin: Fuel and Go Package

Complete 101 frame and sheet metal. Includes v-twin engine, 4 speed transmission with MWSC shifter. 8" Douglas front rims. Call regarding rear tires and rims. No weight included. \$125.00 freight charge applies.

**52627 Turn Key Twin (101)....
.....\$10,946.50**



\$9.95 FLAT RATE SHIPPING!



1- Hood
 52863 1 cylinder (pictured)
 52864 V-Twin.....\$155.67

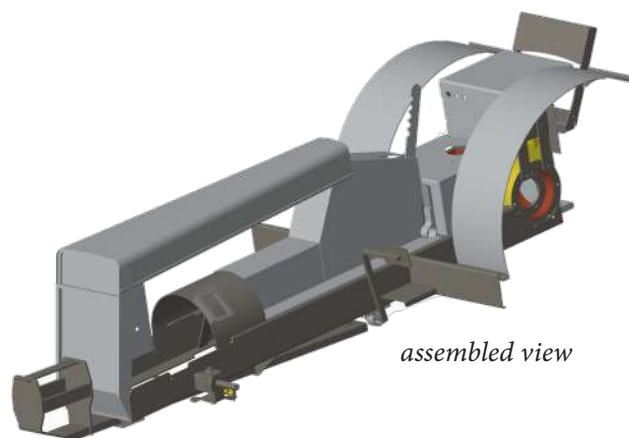
2- Grille
 52947 1 cylinder(pictured)
 52948 V-Twin.....\$333.45

3- Flywheel Shield
 52949 1 cylinder (pictured).....\$99.90
 52950 V-Twin.....\$49.00

4- Tunnel Cover
 52865 1 cylinder (pictured)
 52866 V-Twin.....\$55.42

5- Tower
 52945 1 cylinder (pictured)
 52946 V-Twin.....\$380.41

6- Rolled Fenders
 52425 8" x 36L.....\$157.52



assembled view

CHASSIS



7- Transmission Cover

- 52835 Single Cylinder**
- 52836 V-Twin.....\$145.00**

8- Engine Shield

- 52900 Single Cylinder (pictured).....\$59.70**
- 52836 V-Twin.....\$145.00**

V-Twin Engine Shield & Flywheel Shield Package

- 52954.....\$147.93**

9- Aluminum Seat Box

- 52840.....\$92.92**

10- Steel Seat Back with Fender Mounts

- Requires MWSC Hitch.
- 52956.....\$157.86**

11- Battery Box

- 52955.....\$167.20**

12- MWSC Billet Hitch

- Includes mounting holes for #10.
- 52122.....\$119.00**

13- Brake Lever Assembly

- 52959.....\$140.68**

14- Welded Frame

- \$125.00 freight charge applies.
- 52725 Single Cylinder.....\$3,075.00**
- 52726 V-Twin.....\$3,155.00**

15- Clutch Pedal

- 52454.....\$108.03**

16- Clutch Pedal Pivot

- Aluminum bearing holder.
- 52850.....\$55.42/ea.**

17- Front Weight Bar Slider

- 52957 Holds 12 Weights.....\$389.09**
- 52958 Holds 16 Weights.....\$409.00**

Half Pint Chassis Packages

1. Frame rails ready for assembly. Includes pre-drilled holes for transmission and engine.

- 52723 Single cylinder Kohler.....\$355.00**
- 52724 V-twin command.....\$375.00**

2. Welded half-pint frame ready for engine, clutch, and transmission. (#14)
\$125.00 freight charge applies.

- 52725 Single cylinder Kohler ..\$3,075.00**
- 52726 V-twin command.....\$3,155.00**

3. Complete turn key half-pint tractor. Includes: engine, 4-speed transmission with drop box, 10 puck clutch, 3.50 x 6 tri-rib tires on Douglas Wheels front wheels, wheelie bars, and hitch.
Call to place an order or for more information.

- 52727 Complete turn key (1 cyl.)**
- 52728 Complete turn key (v-twin).....Call for quote**



Polished Front Wheels

6 x 3.25" aluminum front wheel assembly. Includes: newly designed hubs, chrome caps, and polished bolt ring. The new design is cleaner with no bolts showing and 3/4 bearings. If spindles are 1" it must be specified when placing order. MWSC can replace bearings with bushing materials.



- 51557 6325** (Wheels ONLY - sold separately).....**\$45.25**
- 51558 6325A** (1" Bushing - no tires).....**\$250.80**
- 51559 6325A** (Description above - pair).....**\$220.50**
- 51560 6325A** (1" Bushing with Tri Rib Tires).....**\$290.80**
- 51561 6325AP** (6325A + tri-rib tires - pair).....**\$269.32**

8" x 3.250" Wheel

8 x 3.25" aluminum front wheel assembly. Includes: newly designed hubs, chrome cabs, and polished bolt ring. The new design is a cleaner look with no bolts showing and 3/4 bearings. If spindles are 1" it must be specified when placing order. MWSC can replace bearings with bushing materials.



- 51562 8325** (Rims ONLY - sold separately).....**\$68.90**
- 51563 8325A** (1" Bushing, Description above - No Tires)
.....**\$301.30**
- 51564 8325A** (Description above - pair).....**\$268.80**
- 51565 8325A** (8325A + tri-rib tires, 1" bearings).....**\$345.10**
- 51566 8325AP** (8325A + tri-rib tires - pair).....**\$315.00**

New Billet Aluminum 6 & 8" Slotted front Wheels

With high quality sealed wheel bearings and chrome cap. A MWSC exclusive. Priced as a pair.



- 52980 3/4" Bearing - 6"**.....**\$387.38**
- 52981 1" Spindle - 6"**.....**\$405.30**
- 52805 3/4" Bearing - 8"**.....**\$424.11**
- 52806 1" Spindle - 8"**.....**\$443.65**

Real Wheels

These wheels have 5 bolt pattern on 4.5" circle with a 3-5/16" center hole. Priced per pair. Includes rear center caps by Real.



- 51002 1210P** (4x6 offset for 23" x 10.5" x 12" tires)
- 51006 1266P** (6x6 offset for 26" x 12" x 12" tires)
- 51004 1248P** (4 x 8" offset).....**\$365.72**

Tractor Dolly

Now you can move your tractor around easily with the tractor dolly, tires are tall enough to lift the front of tractor so you can pull it behind another. Save your back, works on any terrain!

- 53020**.....**\$189.00**



Billet Aluminum Front Hubs

For 6" x 8" Douglas Wheels. 3/4" bearings or 1" bushings available. 3" length. Priced per pair.



- 52638 BH12-1** (1" bushings)
- 52639 BH1234** (3/4" bearings).....**\$134.68**

Bushings for MWSC Front Hubs

1" bushings for MWSC front hubs. Requires 2 per hub.

- 51553 1" Bushing** (Sold separately).....**\$10.00**

Chrome Bullet Caps

For 6" x 8" Douglas and billet front wheels. Sold separately.



- 51308 CCD**.....**\$6.50**

Chrome Valve Stems

Works with all rims. Sold separately.



- 51309 Chrome**.....**\$6.00**

Tri-Rib Tires

4-ply tubeless design. 6" tires. Made by GBC. Priced per pair.



- 52516 835TRI** (3.5" x 8" & 14.5" tall).....**\$59.16**
- 52517 635TRI** (3.5" x 6" & 12.5" tall).....**\$54.83**

Lawn Tec Tires are currently out of production. We are trying to find a better rubber compound. We will let you know when they are back!

Wheel Spacers

Fits Cub Cadet, John Deere, and Wheel Horse tractors. Sold in pairs.



- 51374 WS5** (5/16" thick).....**\$20.35**

Wheel Stud Kit for Cub Cadet

3" long hardened steel studs (10) with lock jamb nut for the back side of the axle flange to keep the stud from turning.



- 52573 W-Stud**.....**\$31.28**

ONLINE ORDERS OVER \$75 SHIP FREE!

Tire Grinding Discs & Cups

Fits on a 4" Angle Grinder with 5/8 arbor.

3" cups (various grits) used to straighten up the front lug of tire. Used for Carlise Firestone tires. Sold individually.

51337 GC 36

51338 GC 46

51339 GC 60

4" discs (various grits) for cutting the lugs back.

51341 GD 36

51342 GD 46

51343 GD 60.....\$44.50

Angled cup for Chevron lug.

Used to restore the lug face to original 90 degree to carcass. These cups undercut the lug like the angles of the LawnTec tires and Cepeks

51033 AC36

51034 AC60.....\$65.95



Pulling it together!

PullingHub.com - Run your entire pull from your smartphone!
(Requires at least a 3g data connection)



Is organizing your club pulls a lot of work? Do you want to try an easier way?

Check out our new website to help you out! Features include:

- Self Signup
- Auto draw hooks and finals
- Your event is updated real time online!
- Print hook numbers with driver and tractor name for putting on tractors
- Print line up sheets
- Simple payback calculator
- Track pre-registered entries with simple 'Paid' status accounting.

Go to www.pullinghub.com to signup!

Contact us at support@pullinghub.com and give us your club name and contact information to get free use of the software! (Limited Time Offer)

Misc. FAQs

What else do I need to make the Electronic Ignition (EI) work on my tractor?
You need a 3 ohm coil. We sell a Voodoo Coil, made in USA or you can use the Blue Bosch Coil.

How does setting my timing change the motor?
Set timing-1 cylinder change point gap, more gap more advance timing.

How big can you bore a stock block?
10-12 Block biggest you can bore is 50 over on old style which is 3.420. The newer style blocks can go 3.530 for 14HP Largest valve for 10HP Intake 1.850 Exhaust 1.50. Measure cylinder wall by using calipers between fins and inside diameter of cylinder.

16 HP stock can be bored 30 over 3.780 to 3.937. Head strap is needed!
18HP Blocks K361 can be bored to 3-15/16 must have head supports.

What offset rear rims should I run on an 82 series tractor?
A 4 x 8 offset.

What makes the Midwest Super Cub gas pedal different?
The Midwest Super Cub brand gas pedal (above) features a machined slot with bronze bushing allowing the pedal to move smoothly. MWSC gas pedal does not have a sticky spot when depressing the pedal.

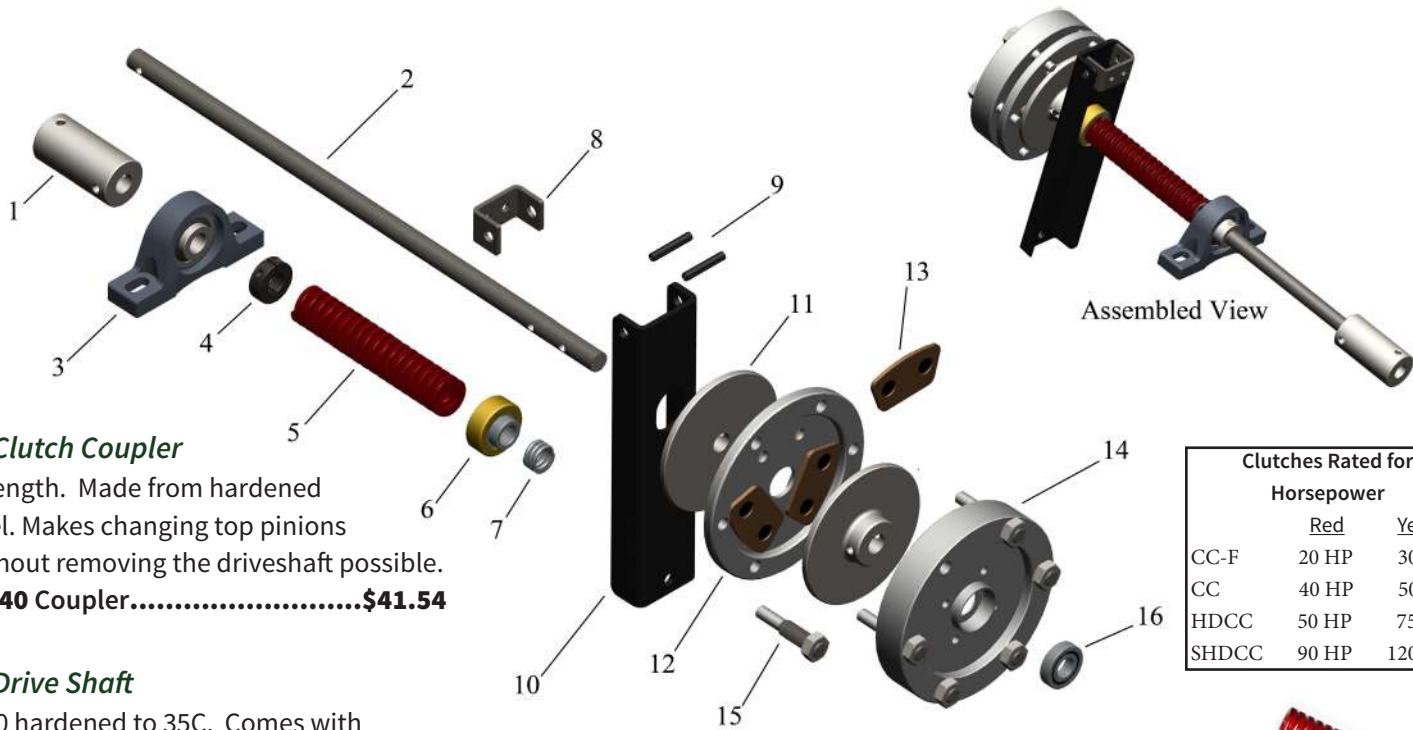
Can my Cub Cadet have 1" spindles?
Yes, some of the Cub Cadet Originals had 7/8" spindles. Some of the 1000 series Cub Cadet and some John Deere tractors have 1" spindles. 3/4" spindle is the most common size.

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**FREE SHIPPING FOR
ONLINE ORDERS
OVER \$75.00!**

MWSC.CO



	Clutches Rated for Horsepower	
	Red	Yellow
CC-F	20 HP	30 HP
CC	40 HP	50 HP
HDCC	50 HP	75 HP
SHDCC	90 HP	120 HP

1 - Clutch Coupler

3" length. Made from hardened steel. Makes changing top pinions without removing the driveshaft possible.

51140 Coupler.....\$41.54

2 - Drive Shaft

4140 hardened to 35C. Comes with holes drilled. Except for the hole behind the spring.

- 51135 DSNF** (Drive shaft for narrow frame fiber disc)
- 51136 DSNFC** (Drive shaft for narrow frame fiber disc with 3" coupler)
- 51131 DSNM** (Drive shaft for narrow frame metallic disc)
- 51132 DSNMC** (Drive shaft for narrow frame metallic disc used with 3" coupler)
- 51137 DSWF** (Drive shaft for wide frame fiber disc)
- 51138 DSWFC** (Drive shaft for wide frame fiber disc used with 3" coupler)
- 51133 DSWM** (Drive shaft for wide frame metallic disc)
- 51134 DSWMC** (Drive shaft for wide-frame metallic disc used with 3" coupler).....**\$36.00**
- 52212 DSX** (Extra long- 24" drive shaft)
- 52213 DSX-KD** (Drilled for Kevlar or stock disc - 24")..**\$42.71**
- 52222 Drive Shaft - Original Cub.....\$93.02**

3 - Center Support Bearing

High quality. Includes eccentric lock. A must for 4000 RPM and above motors.

52123 CSB.....\$39.30



4 - Drive Shaft Split Collar

For 5/8" drive shaft. Split collar locks to drive shaft to hold clutch spring firmly in place. Eliminates the need for a roll pin behind spring (the location where most drive shaft failures occur). 1 split collar behind our red spring and 2 behind our yellow spring.

51086 SC.....\$8.10



5 - Clutch Springs

Heavy duty. The red spring is used for stock, stock altered, and 30 cubes. The yellow spring is used for pro and super stocks. Both are 6" in length and compress to 4.5".

51083 HDR (Red spring 800#).....**\$26.00**

51084 HDY (Yellow spring 1150#).....**\$26.00**



6 - Throw Out Bearing

For Cub Cadets.

51089 TO1.....\$57.83

51090 TO182.....\$62.09



7 - Teaser Spring

For Cub Cadet.

51088 Teaser.....\$7.09

52944 Spring Sleeve (makes spring last longer, not shown on above).....**\$14.11**



8 - Narrow Frame Hanger Bracket

Used with Cub Cadet release arm.

52191 Bracket.....\$27.01



Teaser Spring Cup

For Cub Cadet 82 series.

51143 T-Cup.....\$17.31



9 - Spiral Drive Shaft Pin

1/4" x 1 1/2" length. Sold individually.

51087 SPI.....\$3.00



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CLUTCH & DRIVELINE



10 - Heavy Duty Release Arm

Longer and stronger than stock arms.

51165 HDRA-N (Narrow frame)

51166 HDRA-W (Wide frame)

51167 HDRA-82 (For Cub Cadet 82 series).....**\$66.00**



11 - Pressure Plates

One piece. Made from billet steel. Upgrade over stock plates (won't warp like stock). Sold in pairs.

52127 PP (For 3 puck - fiber or stock replacement)....**\$74.81**

52128 HDPP (For 4 puck clutch).....**\$84.90**

52129 SHDPP (For 5 puck clutch).....**\$99.78**

12 - Metallic Clutch Disc

Made with three metallic pucks on each side mounted to a 1/8" aluminum disc. Thicker design and twice the holding power of stock discs.

**Requires new drive shaft. See #2 on p. 10.*

52124 MD (Metallic disc - 3 puck - pictured).....**\$98.63**

52125 HDMD (4 puck clutch).....**\$117.60**

52126 SHDMD (5 puck clutch).....**\$123.57**



Kevlar/ Fiberglass Composite Clutch Disc

This clutch disc is a Kevlar/ fiberglass composite clutch disc. It has about 85% of the holding power of our metallic discs. Drop-in replacement for the stock fiber disk. Great for stock and stock altered engines.

51155 KD (Kevlar disc works with stock driveshaft)....**\$39.74**



13 - Metallic Clutch Pucks

Includes rivets. Replacements sold in sets of two (pictured). **MWSC will install the new pucks on a Midwest disc with no labor charge if the customer drills out rivets, removes puck, and mail it to us.*

51081.....**\$13.39**



14 - Six Lug Aluminum Clutch Driver

Clutch driver replaces stock driver. Can be used with stock, Kevlar, or metallic discs. Includes 6 drive pins. Use 3 or 6 drive pins, Loctite, and nut goes on flywheel side of drive. Bolt nuts on side where you can see bearings.

52131 CD1.....**\$97.82**

52132 HDCD1.....**\$116.74**

52133 SHDCD1.....**\$131.73**

15 - Drive Pin and Nut

52130 DP (set of 6).....**\$33.25**



16 - Clutch Driver Bearing

For MWSC driver.

51082 H20566.....**\$9.14**

Clutch Hub & Dowel Pin

For K-Series. Made from billet aluminum (replaces cast aluminum hub). With 4 bolts on 3" center to center flywheels. Use dowel pin or bolts, not both.

52134 Clutch Hub (With dowel pin).....**\$44.30**

52636 Bolts (3/8 x 16.2 x 2 1/4 - set of 4).....**\$6.20**

51161 Clutch Hub for Command.....**\$40.88**

52731 Bolts for Stock Command Flywheel.....**\$6.20**

52732 Bolts for Aftermarket Twin Flywheel.....**\$6.20**



Adapter Step Washer

Used to mount billet aluminum clutch hub onto Magnum Kohler crank end. To be used with MWSC clutch hub.

51168 SW.....**\$12.76**

Clutch Upgrade Kits

Heavy duty clutch kit Includes: larger driver, larger pressure plates, and 4 puck clutch disc.

52569 HDC (Heavy duty clutch kit - descr. above)....**\$310.50**

Super heavy duty clutch kit Includes: driver, 5 puck clutch disc, pressure plates, and driver pins. This clutch was developed for our v-twin engines for maximum slip engagement for high wheel speed launches.

52570 SHDC (Super heavy duty clutch kit).....**\$348.33**

Beginner Clutch Package

The clutch rebuild kit for beginners includes: pressure plates, a red clutch spring, a Kevlar disc, a longer heavy duty release arm, a throw out bearing, a teaser spring, and split collar. This package will give you the parts necessary to rebuild your stock clutch for more power and better performance. *This package saves over \$22.00!*

52435 KRP - Narrow Frame Kit (pictured above)

52436 KRP- Wide Frame Kit

52437 KRP - 82 Series Kit.....**\$255.00**



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Build A Clutch

Build a customized clutch by selecting the desired components creating a part number for ordering (example below).



Example :

to build a complete clutch with driver, 4 pack metallic disc for narrow frame and yellow spring (to be used with our 3" coupler -NOT INCLUDED see #1 on p. 10).

Example Part # **8 2 3 1 2 2**

8 _____
8 _____
8 _____

1st # **8**

2nd # **1** Complete clutch - without 6 pin driver
2 Complete clutch - with 6 pin driver

The Heavy and Super Heavy Duty Clutch requires the purchase of larger driver.

3rd # **Disc - includes corresponding PP and driver**

- 1** Kevlar disc
- 2** 3 puck
- 3** 4 puck
- 4** 5 puck

4th # **Release Arm - includes corresponding throw out bearing**

- 1** Narrow frame
- 2** Wide frame
- 3** 82 series

5th # **Spring - includes corresponding split collar(s)**

- 1** Red spring
- 2** Yellow spring

6th # **Drive shaft**

- 1** Narrow
- 2** Narrow for 3" coupler
- 3** Wide
- 4** Wide for 3" coupler
- 5** 24" shaft for 82 series with no rear hole

Standard Clutches

811__CC-KD.....	\$314.22
812__CC-MD.....	\$361.42
821__CC1-KD.....	\$420.08
822__CC1-MD.....	\$469.27

Heavy Duty Clutches - Larger driver than stock required.

813__HDCC.....	\$410.33
823__HDCC1.....	\$509.63

Super Heavy Duty Clutch - Larger driver than stock required.

814__SHDCC.....	\$448.95
824__SHDCC1.....	\$572.17
52971 Double disc clutch using SHDMD, yellow spring & 24" shaft.....	\$751.88

FAQs

New to pulling and I need to update my clutch, what should I know?

In a stock class the participant may only need a new disc for their existing clutch. Midwest Super Cub's kevlar disc and possibly a heavier spring. The stock spring is a 300# spring and the heavier disc is a red spring, an 800# spring (see Beginner Kit on page 14).

Why should I replace the stock pressure plates?

The stock pressure plates might not need to be replaced. Stock pressure plates are made with a thinner design and when used for pulling may result in warping. Check the stock plates to ensure that they are completely flat. If they are not completely flat, they can be trued or replaced with MWSC pressure plates (page 14) which are made from billet metal making them less likely to warp.

How far does the spring need to be compressed?

MWSC red and yellow springs are 6" long and need to be compressed to 4 1/2".

Why is the heavy duty release arm necessary?

When using the heavier spring, it will be easier to press down the clutch pedal. The heavier release arm (page 14) is longer and stronger than the stock ones. There are 3 styles available: narrow, wide, and 82 series.

Is it necessary to use the teaser spring?

MWSC installs one in every clutch we assemble. The teaser spring (page 13) allows you to feel when the clutch is engaging. It also allows for a smoother engagement.

How can I check if my clutch is running true?

When the clutch is installed and the engine is turned off, measure the distance between the disc and the 3 or 6 lug driver in 5 or 6 spots. The measurements should be the same. If they are not all the same, shims will be needed on one side of the motor, until the measurements are equal.

Which clutch should be used for a pro stock tractor?

You will need the metallic disc with four or five pucks on each side (page 14). This will require replacing the stock drive shaft. Along with the metallic disc you will need the 1100# spring which is a yellow spring (page 13). If you use the four or five puck disc, you will need to replace driver, pressure plates.

Which driveshaft works with an 82 series tractor?

The 82 series is a wide frame, but because these were made with a rubber boot coupler the length of the drive shafts all vary. MWSC makes a driveshaft 24" long (page 13). The rear hole must be drilled after determining the correct length. If you have a MWSC 3" coupler (page 13), it may be used a drill guide. Coolant must be used when drilling the holes. The front two holes in the MWSC shaft come already drilled. The disc being used must be specified when placing an order for a MWSC driveshaft: metallic or kevlar (page 14). Standard length for a narrow frame tractor is 18 1/4" and the wide frame is 19 1/4". These are completely pre-drilled with all the holes except for one behind the spring, because each hole is a weak spot in the driveshaft. The spring is held in place by a split collar (page 13). One split collar is used behind a red spring and two behind a yellow.

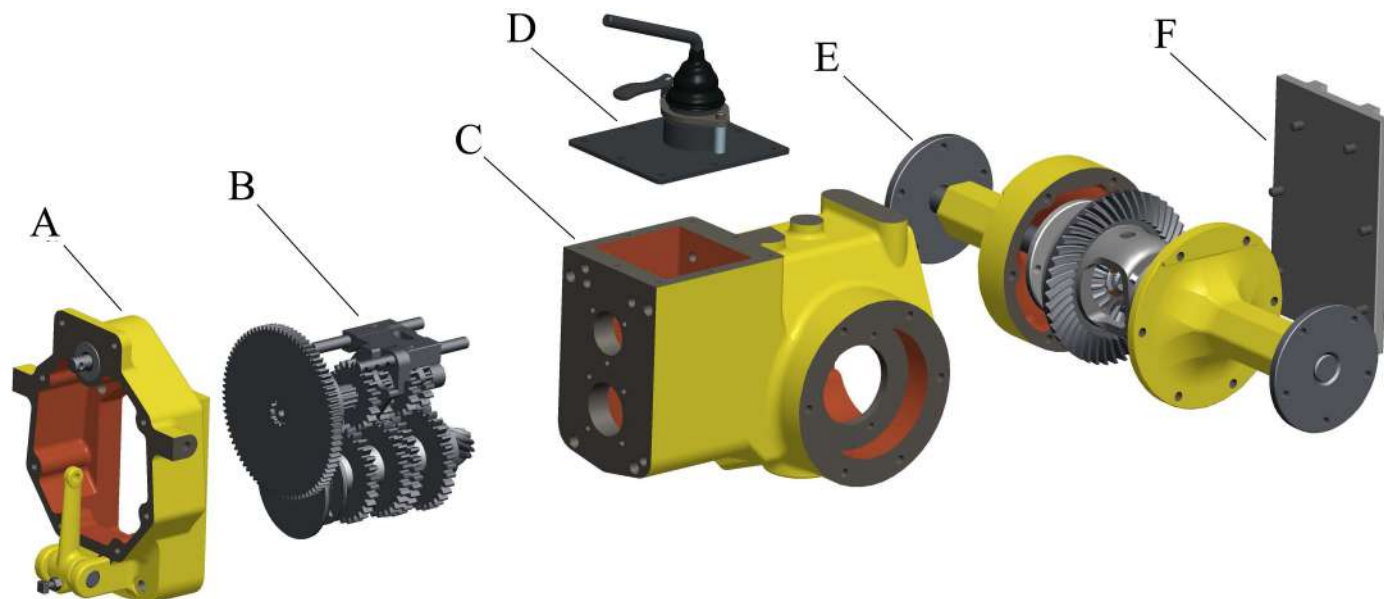
Why use a center support bearing?

A center support bearing (page 13) or pillow block bearing are necessary in tractors running at 4000 RPM or above. When the clutch turns at a higher RPM the driveshaft is also moving in a small circular motion. The center support bearing helps eliminate some of this circular motion. It also helps with some misalignment issues.

What are the differences between the regular metallic disc, the heavy duty metallic disc, and the super heavy duty metallic disc?

The metallic disc has 3 pucks on each side and it measures the same as the stock pieces. The heavy duty metallic disc has 4 pucks on each side and measures 6.5". The pressure plates and 6 finger driver all have a larger diameter. The super heavy duty metallic disk has 5 pucks on each side and measures 7.0". The pressure plates and 6 finger driver are also larger. There is a chart for HP and disc size on page 13.

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A - Aluminum Reduction Assembly (Housing Only)

For description see page 17, #12.
Front gasket #51728, Reduction gasket #51988. See Page 19.

B - Internal Gear Assembly

Refer to diagram on the top of page 16.

C - Aluminum Transaxle Case

Lightweight cast aluminum transaxle case. Made of T-6 heat treated aluminum. Weighs 25.5 lbs less than the cast iron case. Made for use with four forward gears.

**If you need reverse, please call in order.*

51724 ATC.....\$956.22

Aluminum Reduction Housing & Transaxle Case

For description see page 15, #12.

51726 ARH-1.....\$1,295.25

Reduction gasket #51988, Axle Gaskets 51990. See Page 19

D - Shifter

Made with billet hardened steel. Features an integrated shifter lock. Heavy duty construction. Short handle is for narrow frame tractors and the long handle for wide frame. On a stock tractor, the fenders may need to be clearanced to access the shifter lock.



51897 Shifter-S (Short handle for most narrow frames - Pictured)

51896 Shifter-L (Long handle for wide frame).....**\$230.33**

Use gasket #51989.

E - Internal Differential Assembly

Refer to the diagram at the top of page 16.

F - Billet Aluminum Hitch

Remove back plate & use gasket #51987. See page 8.

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FAQs

What fluid is used in the transmission?

Hy-Trans fluid by IH or Farmall or Hy-Gard by John Deere are recommended. These fluids each have a rust inhibitor in them for when the tractor is stored in an unheated garage or trailer where the variation of temperature creates condensation. For a pulling tractor use only 2 quarts.

Is locking the shifter in with a rigid lock necessary?

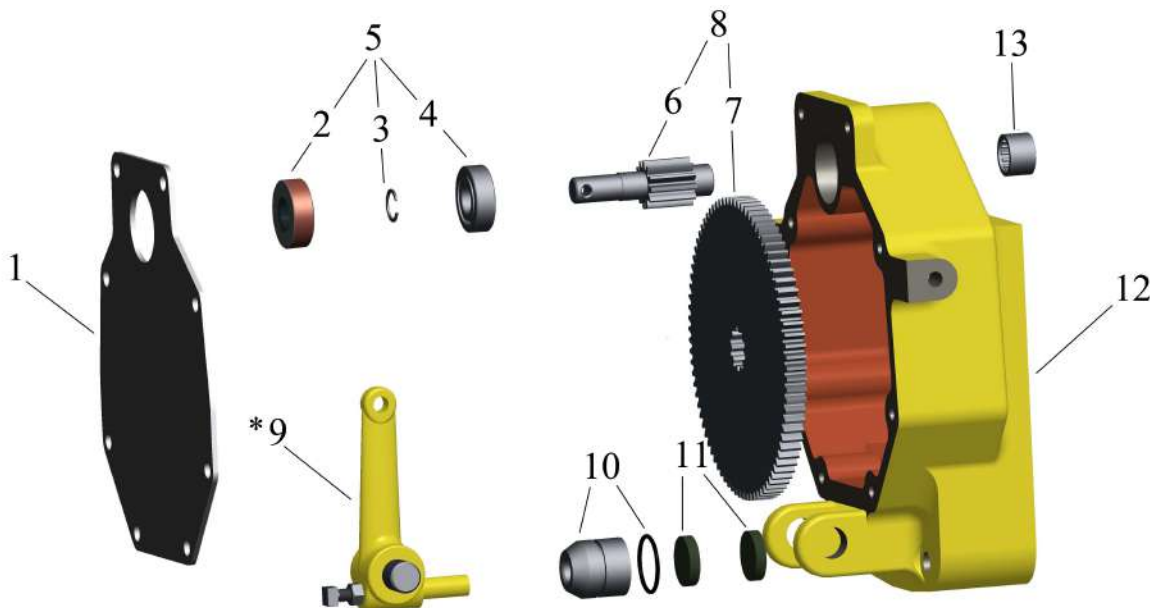
Yes. A solid lock is necessary. Tarp straps and hands are just not strong enough. Our shifter (Part D) takes care of this need.

Is the Midwest Super Cub shifter a direct replacement for a stock shifter?

Yes. MWSC shifters (left) have a built-in shifter lock. Put the tractor in gear and lock the lock (flip of a lever) and go. The MWSC shifter prevents jumping out of gear. Short and long handled shifters available. Long handled shifters are generally used for wide frame tractors and short handles for narrow frame tractors.

What is the benefit in using the over or underdrive gears?

This is done by replacing the big gear and pinion in the reduction housing. The underdrive gear sets (page 17) slow down the entire transmission. Available in 10 & 20% underdrive. The overdrive gear sets (17) accelerates the speed of the transmission by 10, 16, or 23% with the replacement of the bowl gear and pinion. The 26, 33, 38, 43, and 47% are three pieces. A two piece pinion and bowl gear. This does not allow the puller to have additional gears; it provides a different gear ratio. There will still be one basic pulling gear. Additional gears can be achieved by doing a 2 -3 swap. See more transmission F.A.Q's on Page 21.



9 - Brake Lever & Adjuster
*Not available for purchase.

1 - Aluminum Transmission Cover
Front cover. Includes gasket.
51729 ALFC.....\$38.34

2 - Front Pinion Seal
51852 Seal.....\$29.48

3 - Front Pinion Snap Ring
Oem replacement.
51853 Snap Ring.....\$7.35

4 - Front Pinion Bearing
51854 Bearing.....\$23.08

5 - Front Pinion Kit
Includes: seal, snap ring, and bearing.
51855 TRG-A.....\$54.56

6 - 12 Tooth Pinion
Replaces stock pinion.
51826 TRG-12.....\$77.64

13 Tooth One Over Pinion
51828 TRG-7.....\$77.64
51856 TRG7A (Includes #5 & pinion).....\$122.20

7 - Overdrive Gear
Bowl gear for overdrive/ underdrive.
51821 Bowl Gear (gear only).....\$103.34

*All bowl gears & pinions available for individual purchase

8 - Overdrive & Underdrive Gear Kits
20% underdrive slows transmission by 2 gears. **51831 TRG08**
10% underdrive slows by 1 1/4 gears. **51832 TRG09**
10% overdrive speeds up by 1 1/4 gears. **51833 TRG10**
16% overdrive speeds up by 2 1/2 gears. **51834 TRG16**
23% overdrive speeds up by 3 1/2 gears. **51835 TRG23...\$155.92**
26% overdrive speeds up by 4 gears. **51847 TRG26**
33% overdrive speeds up by 5 gears. **51848 TRG33**
38% overdrive speeds up by 6 gears. **51849 TRG38**
43% overdrive speeds up by 6 1/2 gears. **51850 TRG43 ...\$205.08**
See F.A.Q. on over/under drives on Page 16.

10 - Brake Plunger
Includes rubber o-ring.
52004 Brake Plunger.....\$29.66

11 - Brake Pucks
51594 Brake Puck (2 pucks, 1 rubber o-ring).....\$16.72

12 - Aluminum Front Reduction Housing
Lightweight cast aluminum front gear reduction housing. Made of T-6 heat treated aluminum. Strengthen in the frame mounting area. Weighs 6.1 lbs. Saves 8.75 lbs from stock. Brake lever not included.
51725 ARH.....\$395.18

13 - Rear Cup Bearing
For top pinion.
52017 M12121.....\$33.08

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14 & 19 -
*Not available
for purchase.



15 - Top Shaft Bearing Holder

Made with billet steel.

52026 TSBH.....\$45.58



16 - Top Shaft Bearing

51038 TS Bearing.....\$22.15



17 - Top Shaft Bearing Kit

Includes top shaft bearing holder and bearing.

52027 TSBH-P.....\$61.42

18 - Super Tough Top Shaft

51720 STT1.....\$78.39



20 - Shift Rails

Left and right rails.
Drilled for MWSC's latest shift forks. For 3 or 4 speed.

52438 Shift Rails.....\$36.77



21 - Pinion Nut

Nut for pinion of ring and pinion. 3/4" fine thread.

51857 Pinion Nut.....\$4.75

22 - Pinion Holder

Made with billet steel.

52018 PH.....\$43.75

Use Part #52022 (Shims to adjust the pinion depth)

23 - Stock Front Pinion Bearing

For bottom shaft.

51042 ST668 (Stock replacement).....\$83.00

51041 5304NRK Bearing only.....\$152.00

See part # 52972 for package option



Aftermarket Front Pinion Bearing Package

Package includes: bearing, pinion bearing, pinion bearing sleeve (#24) and front spacer.

52972\$218.00



24 - Pinion Bearing Sleeve

Includes pinion shims.

52440.....\$59.47



25 - Pinion Holder Shims

Sold as a set of 3: .010", .020", and .030".

52022 PH-Shim.....\$18.25



26 - Stock Front Spacer

For stock and 3 - 4 speed aftermarket transmissions. .85" thickness.

52000 FSS.....\$17.00

Front Spacer

Used for 2nd and 3rd gear swaps.

52001 FS.....\$17.00



27 - Top Shaft Rear Needle Bearing

51043 TSB87728968.....\$35.45



28 - Custom Shift Forks

Customers with True Gears will need to grind the forks to fit. USA gears require no radiusing. 4 lbs.

51721 SF 4.....\$179.02



\$9.95 FLAT RATE SHIPPING!

29 - Transmission Gear Sets

For Cub Cadet transaxles. Super micro finish for less drag. Three gears in a set. Cluster slider and two bottom gears. Tooth count on top cluster gear and corresponding bottom gears add up to 52. Over 400 gear sets in stock for immediate shipping. These gear sets work great with stock top shafts.

51680 14/15	51689 18/20	51697 22/24
51681 14/16	51690 19/20	51698 23/24
51682 15/16	51691 19/21	51699 23/25
51683 15/17	51692 20/21	51700 24/25
51684 16/17	51693 20/22	51701 24/26
51685 16/18	51694 21/22	51702 25/26
51686 17/18	51695 21/23	51703 25/27
51687 17/19	51696 22/23	51704 26/27
51688 18/19		

.....\$156.82

3 Speed Gears: Reverse & 1st Gear

51669 13/14	51673 13/18	51677 13/22
51670 13/15	51674 13/19	51678 13/23
51671 13/16	51675 13/20	51679 13/24
51672 13/17	51676 13/21	

.....\$138.88

Idler Gear

Pre-machined for 3 speed transmissions.



51719 Idler Gear.....\$52.51

30 - Spacer Kit

For aftermarket 3 and 4 speed transmissions.



51708 SK3 (3 speed)
51709 SK4 (4 speed - image above).....\$26.33

31 - Stock Rear Bearing

For ring and pinion. Stock replacement.

51017 350857R91.....\$119.00

Heavy Duty Rear Pinion Bearing

Double row ball bearing for lower pinion or pinion and ring gear. **When using a 3 or 4 speed transmission use the included machinery bushing instead of a rear spacer.*



51039 5206M (Made in USA).....\$141.01
51040 5206C (Made in China).....\$78.31

See FAQ's on gearing on Page 21.

4 Speed Package

Includes: a pair of shift forks, spacer kit, and top shaft.



51722 4SP (order 2 sets gears separately).....\$265.00

3 Speed Package

Includes: three pulling gear set up, a pair of shift forks, spacer kit, top shaft, and reverse idler gear (machined for less set up time).

51723 3SP (order gear sets separately).....\$298.50

2-3 Swap Package

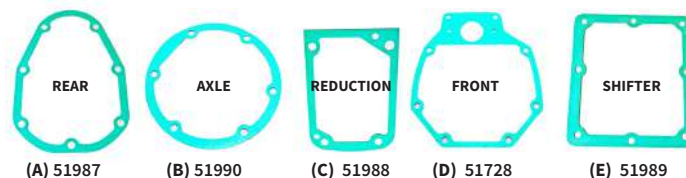
Includes: left fork, left shift rail drilled for our fork, one gear set, and the front spacer for 2-3 swap.

52441 23SP (order gear sets separately).....\$111.64

Transmission Gasket Set

Includes: a rear plate (A), rear reduction housing (B), 2 axle gaskets (C), front reduction housing (D), and shifter (E).

40% savings over Cub Cadet brand set!



51991 TG (6 pieces).....\$37.53
 Single Gasket (*customer must specify which one)...\$10/ea.

Learn How Now DVDs - Download Online for Free

Instructional video to show how to clearance and assemble a transmission with aftermarket gears. DVD's are still available for \$10 plus shipping.

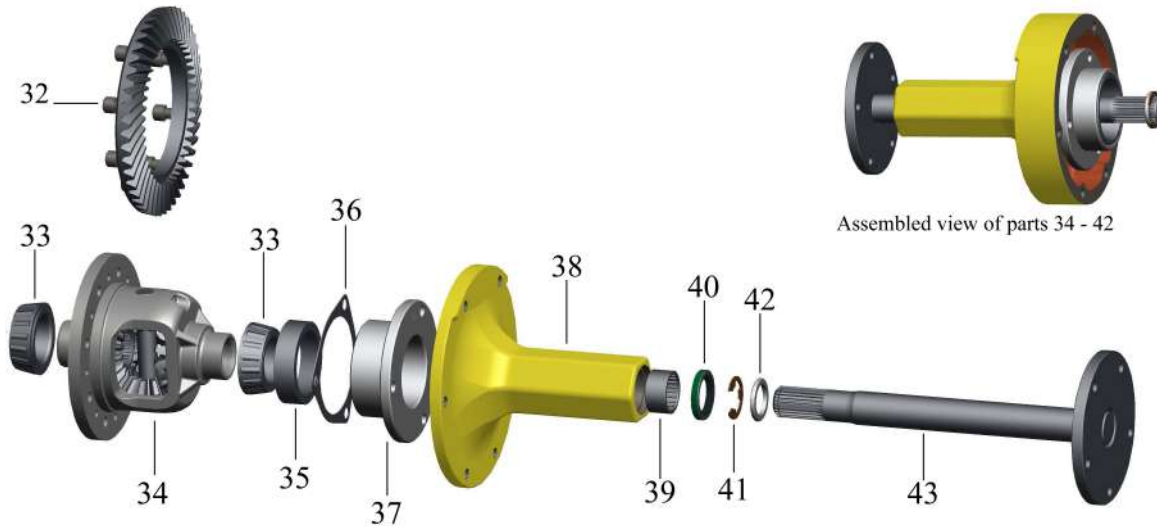
52975 2-3 swap removes 2nd and 3rd gears to be replaced with aftermarket gears.

52976 3 speed allows you 3 new forward gears and still have reverse.

52977 4 speed allows you to install 2 sets of gears creating 4 forward gears of choice.



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32 - Ring Gear & Pinion

For Cub Cadet transmissions. MWSC design has increased the length of the teeth on both the ring and pinion. Customer will need to torque bolts to 45 ft lbs. Bolts are 3/8-24 " x 5/8". Same tooth count as stock ring and pinion.

51860 RP.....\$545.85

Reverse Ring Gear & Pinion

For diesel power tractors. Has a left-handed nut on pinion.

51868 RRP.....\$687.00

33 - Heavy Duty Carrier Bearing

Cone bearing. Works with machined bearing cups. Requires two bearings. Sold individually.

51228 LM501349.....\$26.65



34 - Heavy Duty Carrier

To be used with MWSC and Dart axles.

52775 SDCarrier.....\$422.78



Centering Ring

Used for centering the stock ring gear on a Dart carrier.

52005 CR.....\$29.91



35 - Bearing Race

To be used with heavy duty carrier bearing. Requires two. Sold individually.

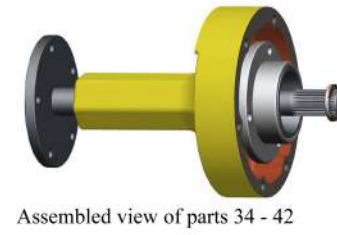
51227 LM501310.....\$14.25

36 - Shim Kit

Includes four sizes: .003, .007, .014, and .028 thickness.

51737Shim-A.....\$24.23

These shims are used to set bearing preload and backlash.



Assembled view of parts 34 - 42

37 - CNC Machined Bearing Cups

For Dart and MWSC carriers. Sold in pairs.

51732 BC 725.....\$99.55

51738 BC725P (With shims).....\$116.28



38 - Axle Tube Machining

Machining of one pair of axle tubes. For heavy duty axle bearing. *Customer must send MWSC a replacement pair to receive \$100.00 core charge back.

52442 Axle Tube Machining.....\$175.00

39 - Heavy Duty Axle Bearing

Requires two. Sold individually.

51226 B1916.....\$18.42/ea.

40 - Large Axle Seal

Requires two. Sold individually.

51225 11734.....\$16.47/ea.

Stock Axle Seal

For stock Cub Cadet or spool axles.

51031 471224.....\$15.63/ea.

41 - Axle C-Clips

For heavy duty axles. Sold in pairs.

51047 C-clips.....\$8.50



42 - Heavy Duty Carrier Spacer

*NOT available for individual purchase. Included with #34 Part 52376

\$9.95 FLAT RATE SHIPPING!

43 - Heavy Duty Axle

For heavy duty carrier. Sold individually. Axles are 1 3/16" approximately. These axles are approximately 1" longer than stock.

52374 Axle.....\$159.08

Heavy Duty Carrier Kits

Kits include: carrier, axles, hubs, and bearings. Customer must machine the axle housings. The washer goes between the sidegear and snap ring. Customer needs to torque the bolts down for a stock ring gear to 35 ft lbs. The use of Loctite is recommended. MWSC ring gear needs to be torqued to 45 ft lbs. These axles are approximately 1" longer than stock.



**Good core axle tubes required to receive \$100 discount.*

52377 SD725Y (Internal brake without tubes).....\$736.23

52379 SD725C (Internal brake with tubes).....\$882.03

52378 SD725Y (External brake without tubes).....\$790.60

52380 SD725C (External brake with tubes).....\$895.86

Complete Steel Spool and Axles

For Cub Cadets. No machining required. Includes all attaching hardware. Eliminates the need for welding stock Cub carrier together to make it into a locked rear -end and still have weaker Cub axles to contend with. Customer must torque ring gear bolts to 35 ft lbs. Use of Loctite and part #52637 (below) is recommended. Designed for use with stock and stock altered tractors and for up to 50-60 HP.



52383 Spool (Internal brake).....\$402.32

52381 Spool Axle (internal brake style).....\$98.04/ea.

52384 Spool-Disc (external brake).....\$489.16

**Customer will need to install calipers. These axles are the same length as stock.*

Stock Bearing Cup Reinforcement

Used to strengthen stock cast rear carrier bearing cups. Suggested for use with MWSC spools.



52637 SBCR.....\$38.32

Seal

51031 Stock Axle Seals for Cub Cadet or Spool ..\$15.63/ea.

Complete Cub Cadet Transaxles with The Right Stuff

Complete transmission includes: Heavy duty carrier, axles, MWSC ring & pinion, shift forks, shift rails, spacer kit and gears, top shaft, pinion holder, top shaft bearing holder. All USA Made. Does NOT include shifter. Heavy duty bearings included. \$125 Freight Charge Applies

52598 TX2 (Two pulling gears).....\$3162.10

52599 TX3 (Three pulling gears).....\$3465.00

52600 TX4 (Four pulling gears).....\$3465.00

**Exchange of good core of axle tubes (one thick and one thin base), reduction housing, brake lever, stock ring and pinion and the 84 tooth bowl gear and 12 tooth pinion are required to receive \$300.00 discount on new transaxle package.*

ONLINE ORDERS OVER \$75 SHIP FREE!

FAQs

What is the benefit of replacing the stock pinion holder?

The stock pinion holder is made of stamped steel and when the tires really bite, the stock pinion holder flexes and this causes the pinion depth to change resulting in ring and pinion failure.

What is the advantage to using a 13 tooth or one over pinion?

The stock pinion has 12 teeth. The 13 tooth pinion (page 17) is the only pinion that works with the stock bowl gear (84 tooth). The 13 tooth pinion will speed the gears by one gear. Example: if the gear you have is a 17 tooth gear, it will act as an 18 tooth gear.

Is the 2-3 swap, 3 speed, or 4 speed difficult to install?

The 2-3 swap (page 19) is not too difficult. The 3 speed is actually more of a challenge to install than the 4 speed (19). Watch the 'How To' video first to decide if this is a task you would feel comfortable taking on. If you would rather have Midwest Super Cub build one and ship it to you, that is an option.

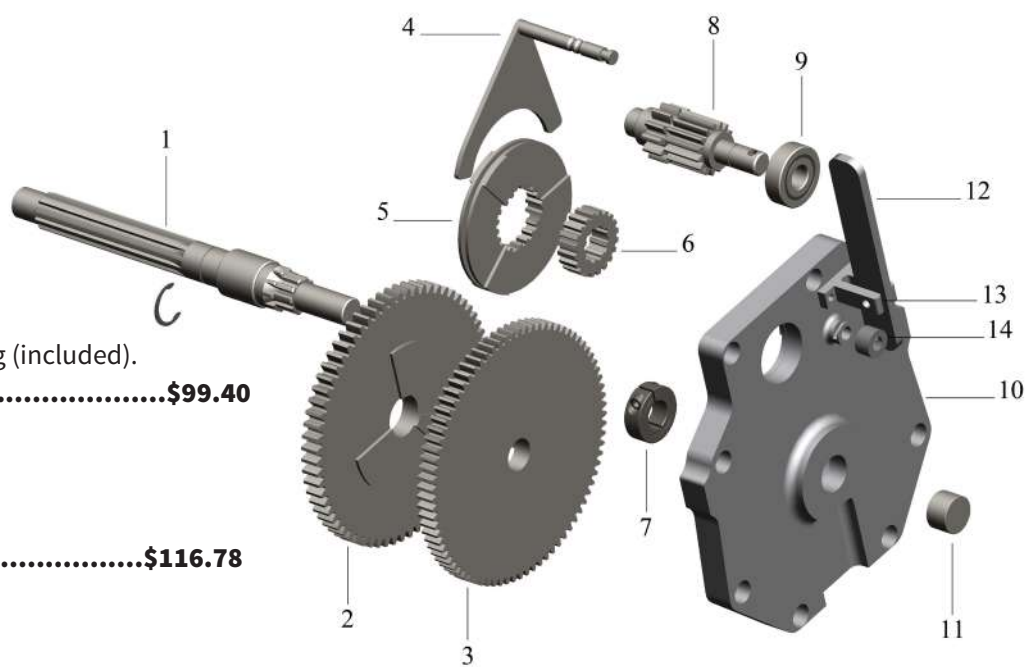
When changing the 2nd and 3rd gears out is there anything else I will need?

When using aftermarket gears in the 2nd and 3rd position, you must measure the thickness of the original gears and the thickness of the aftermarket gears and either machine off the difference on the front spacer in the transmission or we have a front spacer (page 18) that is pre-machined to the correct thickness.





Assembled View



1 - Hardened Top Shaft

Longer than stock shaft. Bearing is secured from the back using a snap ring (included).

52041 Top Shaft.....\$99.40

2 - 67T Gear

For regular 2 speed transmissions.

52037 REG 67T Gear.....\$116.78

3 - 81T Gear

For regular 2 speed transmissions.

52038 REG 81T Gear.....\$116.78

4 - Shift Fork

For 2 speed reduction housing.

52042 REG Shift Fork.....\$44.98

5 - Outer Shifter Ring

Works with a drop box and regular reduction housings.

52044 Shifter Outer Ring.....\$85.00

6 - Inner Shifter Ring

Works with a drop box and regular reduction housings.

52045 Shifter Inner Ring.....\$59.58

7 - Split Collar

51009 2 Speed-SC.....\$12.10

8 - Front Pinion

13/15 for regular transmissions.

52221 REG Front Pinion.....\$128.88

52905 Splined Front Pinion.....\$178.42

9 - Front Pinion Bearing

51011 2SPFPB.....\$24.32

52762 Bearing for Splined Pinion.....\$29.42

10 - Reduction Housing Cover

52043 REG Cover.....\$177.38

11 - Rear Cup Bearing

For top pinion.

52017 M12121.....\$32.08

12 - Handle

52602.....\$19.25

13 - Shifter Stand

52297.....\$41.50

14 - Shifter Lever Collar

52291.....\$12.88

52268 Splined Coupler (Use with splined pinion)....\$86.81

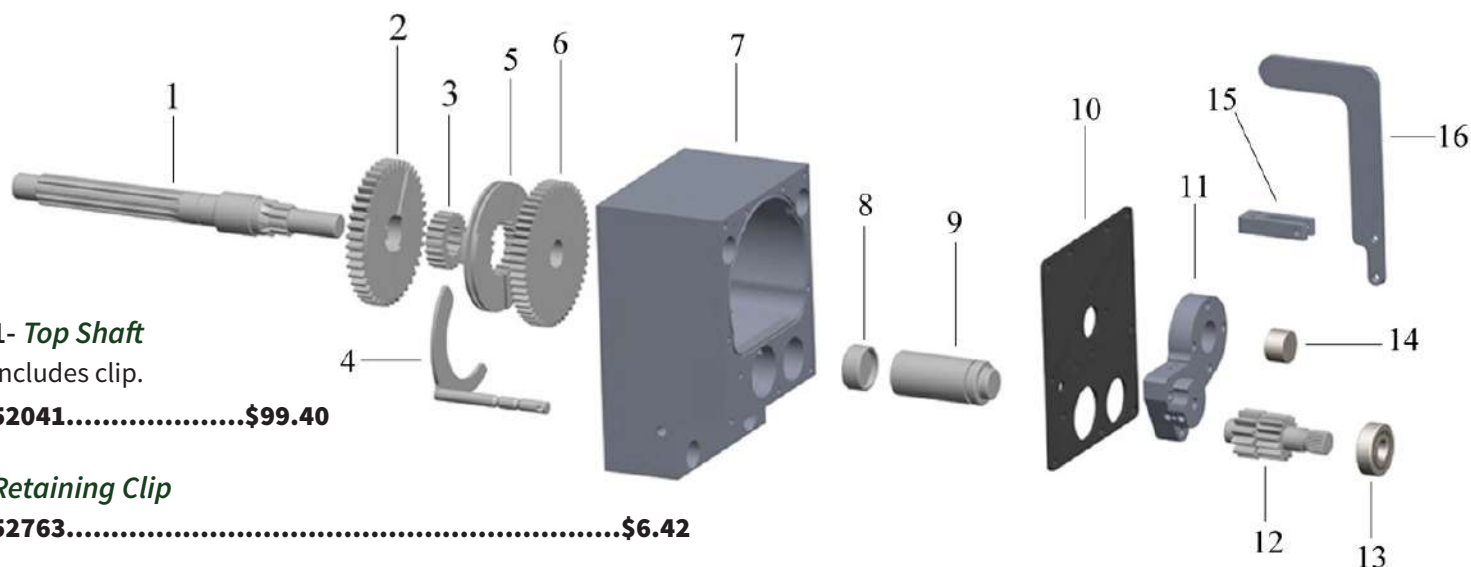
Complete 2 Speed Transmission

See above for model. Complete 2 speed box provides 1/2 gear changes. Easily shifted with lever. This set-up eliminates the need for a shifter lock while in gear. This package includes: front reduction housing (*exchange required), brake lever (*exchange required), top shaft, 81 and 67 gears, inner and outer shift rings, 2 speed pinion, bearing, snap ring, front cover for front reduction housing, shift fork, shift lever, and attaching hardware. Pro/ super gear box gears: 20 - 23 will get the customer: 23.3, 23.8, 24.3, 24.95, 25.3, 25.95, 26.3, 26.95. Stock altered gear box gears: 17 - 20 will get the customer: 20.1, 20.7, 21.2, 21.75, 22.25, 22.8, 23.3, 23.875. Core charge of \$100.00 added if no exchange.

52603 2 speed using conventional box (Pictured above)\$969.99

\$9.95 FLAT RATE SHIPPING!

2 SPEED TRANSMISSION



1- Top Shaft
Includes clip.

52041.....\$99.40

Retaining Clip

52763.....\$6.42

2- 43 Tooth Gear

52199.....\$88.71

3- Inner Shifter Ring

52045.....\$59.58

4- Shift Fork

52773.....\$44.98

5- Outer Shifter Ring

52044.....\$85.00

6- 52 Tooth Gear

52198.....\$88.71

7- Drop Box Housing

Includes o-ring and bearing.

52155 1 Cylinder 2 Speed.....\$342.35

52156 V-Twin 2 Speed.....\$342.49

52154 V-Twin Regular 2 Speed

52147 1 Cylinder Regular Drop Box.....\$326.49

8- Rear Brake Pad Holder

52145.....\$17.38

9- Brake Plunger

52144.....\$25.29

Front Cover

52148 1 Cylinder Drop Box Regular.....\$25.42

52158 1 2 Speed.....\$50.40

52157 V-Twin Regular.....\$25.42

52159 V-Twin 2 Speed.....\$50.40

11- Shifter Housing

52201.....\$116.80

12- Input Pinion

52200 Regular.....\$115.88

52272 Splined Pinion.....\$165.42

13- Front Pinion Bearing

51011 Regular.....\$24.32

52762 Splined Pinion.....\$29.42

14- Needle Bearing

52017 M12121.....\$32.08

15- Shifter Stand

52769.....\$21.42

16- Shifter Handle

Dowel and bushing.

52770.....\$15.42

52268 Splined Coupler (for splined pinion).....\$81.81

Aluminum Drop Box

To build a tractor similar to the MWSC Half Pint with gear (38% OD). 55T big gear to use with 12 tooth stock pinion.

52163 DBA-Single (Single cylinder)

52166 DBA-Twin (V-twin)

52162 DBA-1 Cylinder.....\$731.09

52604 2 speed 1 cyl. half pint using MWSC drop box

.....\$898.44

52605 2 speed v-twin half pint using MWSC drop box

.....\$898.44



The GE **Elec-Trak** made by General Electric was the first commercially produced all-electric garden tractor, made mostly between 1969 and 1975. With limited production and availability, many Elec-Traks are still in use today. Several models that were produced, including: the E8M and ER8-36 (8 hp); the E10M (10 hp); the E12 and E12M (12 hp); the E12S and E15 (14 hp); the E16 (an upgraded version of the E15), and the E20 (16 hp). The E8M and ER8-36 were styled more as ride-on mowers than tractors. The “M” suffix used on some models indicates the ability to accommodate a mid-mounted (belly) mower, and an “H” was used on some models to indicate a heavy duty, double sized battery pack.

GE also made an industrial version of the Elec-Trak, the I-5. It was orange instead of yellow, and had fenders over the front wheels and attachment points for a roll cage and forklifts of varying heights,

After the shutdown of production at GE, Elec-Traks were produced under the Wheel Horse[5] and Avco New Idea labels.

Some time after the final shutdown of the Wheel Horse line in 1983, all remaining parts and dies were sold to Bill Gunn, a dealer in Edgerton, Wisconsin. Eventually Gunn retired and all remaining stock was sold to the Electric Tractor Store.

Info from Wikipedia

Our son, Julian bought the E 10 and actually mowed lawn with it a couple of times. Julian & I have since bought the E 8. They are displayed the front office of our shop.



Fully Charged Electric Pulling Tractor

This next is a prototype tractor put together by our son, Julian Stahl. He converted a Ford Ranger into an electric vehicle and after seeing how well it worked went on to build the Fully Charged tractor, he pulled the first time in Columbus, OH in 2011. To see video Google *Fully Charged pulling tractor* and watch the Youtube video.



Building the prototype electric tractor “Fully Charged”

By Julian Stahl · Updated about 5 years ago · Taken at MWSC Fab Shop

This is my electric tractor I’m going to try.

Some stats:

- 144v DC (by way of 12 Optima Red Tops hooked in series)
- NetGain Microprocessor Motor Controller.
- Direct drive to the topshaft.
- 9.1” ADC Series Wound Brushed Motor
- Target Vehicle Weight: 850lbs

I want to stress the fact that this is a prototype and will probably not work on the first attempt. It is something very new and I have very little data on all of it. My ultimate goal of the project is to beat an NQS SS Flat Head Tractor.



Update 8-24-11: For the 2011 short NQS season I will now have 192v at my disposal (by way of 16 Braille B2317 Batteries). I have not changed my controller or motor. That is the same from the previous setup. My gearing in the transmission will also stay the same.

Update 10-21-13: New power plant for the tractor. 180 Lithium cells configured, 3 in parallel and 60 in series for 192v (same as Braille Pack). Everything else is the same from the previous setup.

Update 2-4-14: Added a reduction (2.25:1) before the main gear box. Should help more fully utilize the Lithium batteries.

Fully Charged has since been disassembled. Only video and photos remain.

Useful Information

The Command v-twin is an all metric engine, the only thing that is S.A.E. measurements are the valve lifters. The lifters are .842" in diameter, which is the same diameter as a small block Chevy (SBC), however, the lifter spacing is wider on the Command than the SBC.

All Commands have the same stroke which is 2.64" (67mm), except the 30 HP (CH750) which is 2.716" (69mm).

The 18-22 HP engines have a 77mm bore (3.032") and the 23 HP is 80mm (3.150"). The 25-30 HP has a 83mm bore (3.268"). Some of the older 25 HP (before 2002) were nikasil coated block and is hard to work with, these make good candidates to have bored out to the big bores and coated with NiCom. NiCom is the newer and improved version of nikasil. NiCom consists of Nickel and carbide. Most all NASCAR engines use this, as well as most outboards and snowmobiles.

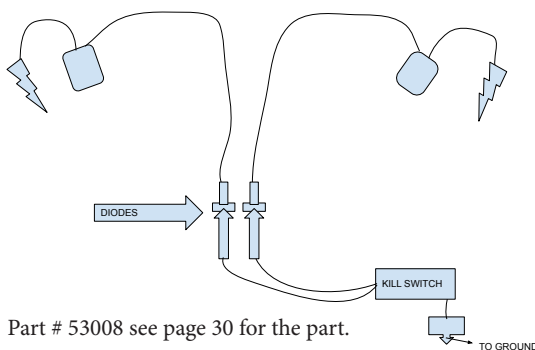
The largest over bore you can go with the 18-22 HP engines is 3.110", 23 HP is 3.228" and the 25 to 30 HP is 3.327". You can bore out the existing sleeve in the small engine and re-sleeve it to the larger bore. If you want to go to a 3.385", 3.425", or 3.445" bore it is best to use an 18 HP or nikasil 25 HP engine and have it NiCom. If you go to the bigger bore you will need to stud the block.

Block Buster - Based upon our experience, on an engine making over 90 ft. lbs. of torque, you are running on borrowed time. Anything in the 90's will have a tendency to tear the block apart starting just below the oil filter mount across and through the rear main bearing area then up through the lifter bores.

The Command has a stock rod length of 4.495 you would use our Diamond piston with a 1.040" pin height. If you use the .750" pin height piston and a stock crank it would take the .290" longer rod (4.785"). If you run a stroker crank it will take .750" piston along with the corresponding rods (listed on page 28).

One caveat of running stroker cranks is with the connecting rod clearance past the cam lobes with larger lift cams. Typically it is necessary to run a smaller base circle cam for this, but stock cams will clear the rods in the 3" stroker engine. The easiest way around the clearance issue is to run a reverse ground cam shaft and flip the heads around on the engine to get the carb out in front.

MWSC wiring diagram for Command Coils



The stock Command cylinder head is somewhat limited unless you break out the spool gun and weld up around the outside of the ports, but without welding on stock heads we build 100 HP v-twin all the time. One of the things with a stock valve and spring is that the installed height of the spring is rather short. You can't insert too big of a lift cam in without running into coil blind issues. We use our roller rocker kit along with the .300" valves and double valve springs to jump up the lift.

The stock valve train and using our single valve springs you can run a .275" lift cam which would produce a .412" lift at the valve (stock rocker ratio is 1.5:1). This set up is good to about 7500 RPM. Our \$2,900.00 engine special with a 25 HP engine will bring the horsepower up to the 60 HP and torque range.

When choosing to upgrade to our roller cam, we would suggest using the upgraded PAC double valve springs (page 27), titanium retainers, and ARP studs. This set up will generate up to 10,000 RPM without valve float. Our regular roller rockers are limited to 350# of spring open pressure and the standard DVS will be good until around 8500 RPM.

Our roller lifter kit (page 27) comes with your choice of vertical tie bar roller lifters or the horizontal tie bar lifters. There are advantages and disadvantages to these lifters. The horizontal tie bars don't require any machine work to the block, but the vertical tie bar lifters are stronger than the other ones.

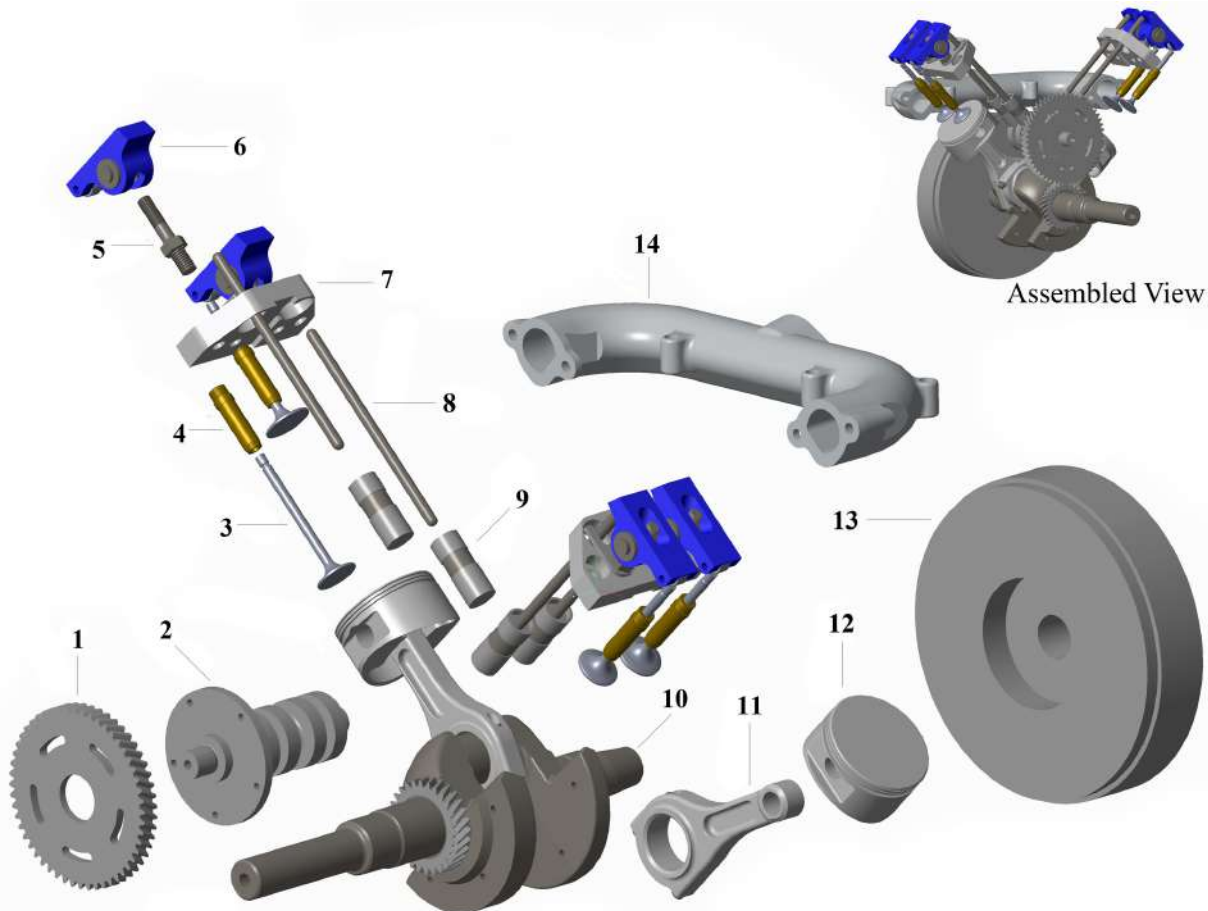
Stock carbs - it is best to use the carb with the accelerator pump in them. They came on the 25 and 27 HP engines. These have a larger butterfly and venturi versus the other style carbs on the 18 - 20 HP engines.

When using a stock downdraft carb, it is best to use the plastic intake. The vertical intake can be used with an adaptor and is a better choice if you port the inside of the manifold out. For most all governor engines use the plastic intake (page 29).

Adjustable steel flywheels weigh about 25 lbs. A stock engine is best to start with around 32 degrees timing. Stock coils are pretty weak spark and do not work well for high RPM applications and its best to use our EI set up with Voodoo Coils. Most of the newer stock coils have built in Rev limiters too.

The 2 barrel intake isn't very helpful with a stock engine, as a matter of dyno testing the downdraft with a plastic intake will out perform it. If you run an open RPM engine and use it with the 1.2 carb adapter and 1.2 carb, then you will see a performance gain, but our ported intake will out perform that 2 barrel intake by sometimes as much as 15 HP more. (See page 29 for these items)

On high RPM Commands, make sure you set the end play toward the upper end of the Kohler specification, otherwise it may stick a main bearing to the crank. Download a free service manual from Kohler for specs. www.power.kohler.com/en/engines/manuals.



1 - Kohler Command Adjustable Steel Cam Gear

Make any cam adjustable. Fits MWSC steel cam blank, or you can machine your stock cam to fit.

51479 CCG.....\$83.93

2 - Kohler Command Steel Camshaft Blank



51420 CCB.....\$120.00

Cam Kits

Aftermarket cast cams. 4000 and 4500 increase torque throughout entire band. Kit includes: cam shaft and lifters. May be ran with solid or hydraulic lifters. When using solid set lash to .010 intake, .012 exhaust use stock springs with either. 4500 can be upgraded to CVS spring kit (part # 51096).

Stock Lift (235) But 15 Degrees More Duration than a stock 25-27 HP Cams:

- 51409** Cam Kit 4000 (Hydraulic lifters)
- 51410** Cam Kit 4000 (Solid lifters)

.050 More Lift Than Stock / Duration 45 Degrees More:

- 51412** Cam Kit 4500 (hydraulic lifters)
- 51413** Cam Kit 4500 (Solid lifters).....**\$304.92**

Degree Cam Video for V-Twin

52979 (Or download for free).....**\$10.00**

Cam Kit 6000

Aftermarket cast cam ground for open RPM engines. Operates at up to 7000 RPM. Increased lift of .420" lift and increased duration of 250 degrees. Kit includes: camshaft, lifters, and springs (part # 51096). Can be used with solid or hydraulic lifters. **If using solid set lash to .010" - .012".*



- 51415** Cam Kit 6000 (Hydraulic lifters)
- 51416** Cam Kit 6000 (Solid lifters).....**\$345.00**

3 - SS Valves for Command Stock

Stock length and .300" longer for our double spring kit. Sold in pairs.

- 52654** CSSI (Intake - stock diameter & length)
- 52655** CSSX (Exhaust - stock diameter & length)
- 52656** CSS1-300 (Intake - .300" longer, stock diameter)
- 52657** CSSX-300 (Exhaust - .300" longer, stock diameter)
- 52658** CSS1-145 (Intake - .300" longer, 1.450" diameter)
- 52659** CSSX-125 (Exhaust - .300" longer, 1.250" diameter)
- 52973** CSSI-OS (Intake 1.450" diameter stock length)
- 52974** CSSX-OS (Exhaust 1.250" diameter stock length)



.....**\$99.92**
26

\$9.95 FLAT RATE SHIPPING!

V-TWIN KOHLER COMMAND 18-30hp ENGINES



Kohler Command Valve Springs

These springs are stronger than stock springs. Includes retainers. Sold in sets of 4.



51096 CVS.....\$69.28

Double Valve Springs

Sold in sets of 4. For .300" longer valves. Locators now included.



51104 DVS.....\$113.40
51840 DVS Pac Spring Upgrade.....\$254.32

4 - Bronze Valve Guides

1/2" OD. 7mm ID. Sold as sets of 4.



52352 Valve Guide.....\$41.29

5, 6, 7 - Kohler Command Aluminum Roller Rocker Kit

Includes 4 - 1.6 ratio roller rockers (#6), four screw-in studs, four adjustors (#5), two head inserts (#7) secured by head bolts), and two longer headbolts.



Requires some machining on head and use of .300" longer valves. Use with valve covers. Includes lash caps.

51503 RR Economy Kit.....\$178.07
52386 RR Upgrade (Compcam rockers & ARP studs)\$332.82

Adjustable Rocker Stud Kit for KohlerCommand V-Twin Engines

This kit eliminates the need for adjustable push rods. Uses a proven design used in V-8 racing engines, helps stabilize push rods and rockers by use of the push rod guide plate. No machining required. Drop in fit. Perfect for stock and stock-altered v-twins. Made for use with stock length valves, works great with our heavier single springs (CVS). Kit includes: 4 rocker studs, 4 fulcrums, 4 poly nut adjustors, and 2 push rod guide plates.



51499 RK4A.....\$79.88
52551 Guide Plates (Guide plates only - pair).....\$22.76

Lash Caps

Protects stem from wear of roller rocker. Sold as a set of four.



51110 LC-7 (7 mm)
52552 LC-516 (5/16").....\$22.00

RC Kit

Steel roller cam (grind and blank), adjustable steel cam gear. Lift at valve with 1.6 rocker ratio. Available in both standard and reverse grind (heads are flipped around). These kits include the cam and gear ONLY. S = standard & R = reverse.

52406 236S (.500" lift, 236 duration, 105 lobe center)
52409 236R (.500" lift, 236 duration, 105 lobe center)
52407 250S (.500" lift, 250 duration, 105 lobe center)
52410 250R (.500" lift, 250 duration, 105 lobe center)
52408 270S (.520" lift, 270 duration, 108 lobe center)
52411 270R (.520" lift, 270 duration, 108 lobe center)
\$437.81

8 - Push Rods

Sold in a set of 4.

Available lengths: 6.050", 6.350", 6.400", 6.500", and 6.650".

52647 6.050"
52648 6.350"
52649 6.400"
52650 6.500"
52651 6.650".....\$66.58



9 - Roller Lifter with Tie-Bar

Vertical tie bars require some machine work to install.

Horizontal tie bars do NOT need machining to install.

Sold as a set of 4.

H = horizontal tie-bar & V = vertical tie-bar.

51476 V (Vertical tie bar - pictured right).....\$123.50
51475 RL-H (Horizontal tie bars - pictured left).....\$178.25
52354 Hydraulic Racing Lifters (Set of 4).....\$64.56
51218 Solid Lifters (Set of 4).....\$82.50



10 - Kohler Command Billet Steel Crankshaft

Available in various strokes.

51396 C23 (2.385")
51397 C25 (2.525").....\$808.80

*Counter weights torqued to 45 ft #.



Rod Bearing for MWSC Command Rods

Only standard available.

Sold in a 4 piece set.

51093 Rod Brg-C.....\$52.72



ONLINE ORDERS OVER \$75 SHIP FREE!

V-TWIN KOHLER COMMAND 18-30hp ENGINES



10 - Forged Command V-Twin Crank

Forged crankshaft with gear.
Various strokes. Price includes balancing.



53005 2.640

53006 70 mm

52994 3.000

53007 3.120

.....\$738.31

Kohler Command Steel Crankshaft Gear

Designed for our steel crankshaft and stock crankshafts. Now made with degree mark and key way. Comes with a dowel pin.



51387 C-Crank Gear.....\$78.05

How to Video - Download Online Free

Instructional DVD on how to degree a cam in a v-twin.

52979.....\$10.00

**Look for the
Midwest Super Cub
booth at the National Farm
Machinery Show
Booth #2801 - 2802
February 12-15, 2020**

**The 1/2 scale 4020 JD
Wheatland tractor
will be on display!**



11 - Unlimited RPM Command Connecting Rods

New design. These rods accept the replacement rod bearings (Rod Brg C).



Available in various lengths.

Rod Length	Crank Size	Piston Pin Height	Rod #
4.495 (Stock)	2.640	1.040	52367
4.545	3.120	.750	52368
4.605	3.00	.750	52369
4.785 (+ .290)	2.640	.750	52371
4.843	2.525	.750	52372
4.913	2.385	.750	52373
4.727	70mm (C70)	.750	52370
4.437	70mm (C70)	1.040	52366

.....\$210.00

12 - Pistons for Command Engines

Comes with piston, rings, wrist pins, and clips. Various sizes and two pin heights available. Diamond brand pistons. Each pair includes three rings. Sold in pairs.

Piston Size/ .750 Pin Height	Piston Package	Rings Only
3.032	52660	52684
3.051	52662	52685
3.071	52664	52686
3.110	52665	52687
3.150	52666	52688
3.189	52668	52689
3.228	52669	52690
3.270	52670	52691
3.307	52672	52692
3.327	52674	52693
3.385	52677	52694
3.425	52678	52695
3.445	52679	52696
3.484	52680	52697
3.583	52681	52698
3.622	52683	52699
1.040 Pin Height	Piston Package	Rings Only
3.032	52661	52684
3.051	52663	52685
3.150	52667	52688
3.270	52671	52691
3.307	52673	52692
3.583	52682	52698

Pistons priced per pair.....\$387.66

Rings priced per pair.....\$110.10

\$9.95 FLAT RATE SHIPPING!

13 - Kohler Command V-Twin Non-Adjustable Steel Flywheel 18-30HP

To be used with our crank trigger ignition. Flywheel is degreed and includes a timing pointer which bolts onto the block where the stock coils were mounted. To purchase a coil and bracket see page 26.



- 52388 FC23** (Flywheel & pointer).....**\$189.74**
- 52393 FC23A** (Flywheel & EI v-twin. 1.00 magnet)
- 52394** (Flywheel, pointer & EI 1.125)
- 52395** (Flywheel, pointer & EI 1.250)
- 52396** (Flywheel, pointer & EI 1.50).....**\$394.03**

Kohler Command V-Twin Steel Adjustable Flywheel 18-30HP

Easily adjust timing as desired. Uses stock magnet and ring gear from the original flywheel.



- 51428 FC**.....**\$337.32**

Offset Key

6 degree offset flywheel key for Kohler Command engines. Fits single cylinder, v-twin, and big block v-twin commands. Yellow dot goes towards engine.



- 51114 Offset Key**.....**\$25.02**

Billet Manifold

Billet intake manifold for command pro v-twin motor. Made for pro v-twin heads only (see page 31).



- 51469**.....**\$557.07**

Kohler Command 24 mm 2-Barrel Carb and Manifold

For the CH series (horizontal crank). This is a stock, factory part. Meets OEM requirements.



- 51418 Carb-2 PKG**.....**\$510.91**
- 51417 Carb-2**.....**\$388.20**
- 51383 Manifold-2**.....**\$163.71**

14 - Cast Aluminum Intake for Stock Heads

Intake accepts 1.200" carb with no adaptors. Carb intake flange is tipped upward for clearance past clutch if installed traditionally and if the customer runs with the heads flipped around it will clear the front start pulley. The ported version is fully ported to match the customer's ported cylinder heads. The 2 piece design allows the customer to finish the intake how they choose.



- 52554 VT Intake P** (Below).....**\$230.80**
- *Dyno testing has proven these intakes are capable of providing gains of 10 - 15 hp over the 2 barrel intake with fully ported version and 10 - 15% for the standard version. Visit our YouTube channel for helpful tech tips!*

Plastic Intake

Great for governed motors using a stock downdraft carb.



- 51580 Kohler Plastic Intake**.....**\$64.20**

Stock Aluminum Manifold for Command Motor

With the adaptor for running at down draft carb. This is the best flowing stock manifold available. Customer must plug the injection holes in manifold.



- 52989**.....**\$193.90**

Command Intake Flange

One intake flange and one gasket.



- 52646 IFC**.....**\$15.00**

Plenum Adapter

Adapter makes a 2 barrel manifold adapt to 1.2" single cylinder Kohler carb.



- 52555 Plenum-1**.....**\$98.32**

Air Cleaner Adaptor

For stock Kohler Command carburetors. More than 20% flow increase and increased horsepower. Works with K & N air filter.



- 52557 V-Twin AC Adaptor**.....**\$39.65**

ONLINE ORDERS OVER \$75 SHIP FREE!

V-TWIN KOHLER COMMAND 18-30hp ENGINES



Kohler Command Economy Exhaust Flange

Includes gaskets. Sold in pairs.

52556 EFC.....\$28.99



Command 2 into 1 Header Systems - Middle Exit

For Kohler command. Includes copper gaskets.

Available sizes:

1 1/8" and 1 1/4" OD (outside diameter).

51440 (1 1/8")

51444 (1 1/4").....\$135.99



Command 2 into 1 Header Systems - Side Exit

For Kohler command.

Available sizes: 1 1/8" and 1 1/4". Includes copper gaskets.

51447 (1 1/8")

51450 (1 1/4").....\$185.30



Command Zoomie Header

Flanges are welded on pipes. Available sizes:

1 1/8", 1 1/4", 1 3/8" OD. Includes

copper gaskets. Sold in pairs.

51519 (1 1/8")

51520 (1 1/4")

51521 (1 3/8").....\$85.63



Command Zoomie DIY Kit

Includes flanges and

gaskets. Available sizes:

1 1/8", 1 1/4", and 1 3/8" OD.

51515 Z-DIY (1 1/8")

51516 Z-DIY (1 1/4")

51517 Z-DIY (1 3/8").....\$65.27



Zoomie Pipes Only

51512 Zpipe (1 1/8" OD)

51513 Zpipe (1 1/4" OD)

51514 Zpipe (1 3/8" OD).....\$20.00\ea.

Coil Ignition Open RPM

Eliminates the need for EI and coil and does not have a rev limiter. Sold in a pr.

Wiring diagram on page 25.

53008.....\$199.29



Voodoo Coil Pack and Pro Aluminum Bracket

Bracket bolts on in place of factory v-twin coils. Designed to work with 2 barrel or

aftermarket intake manifold. Will NOT work with stock

18hp - 27hp intake manifold.

51488 EI-VTwin Pro Coils.....\$240.46



Voodoo Coil Pack and Stock Aluminum Bracket

Will work with stock

18hp - 27hp

intake manifold.

51489 EI-VTwin Coils Stock.....\$240.68

51484 Voodoo Coils (need 2).....\$98.84



Crank Trigger Ignition for Kohler Command V-Twin Engines

Kit includes: magnet ring, bracket and modules. Easy hook up.

Buyer must specify the

diameter of PTO end of

crank at the block. MWSC

steel cranks require a 1.5"

magnet ring. This crank trigger should

be used with 2 coils or the Dyna coil packs (recommended).

51493 EI V-twin (1)

51494 EI V-twin(1.125)

51495 EI V-twin (1.250)

51496 EI V-twin (1.50).....\$181.00



\$9.95 FLAT RATE SHIPPING!

Spark Plugs

Stock altered spark plug, Sold individually.

Autolite.

51975 Champion 1001 Spark Plug for V-Twin (gas)...\$16.26

51976 4056 Stock Altered Spark Plug.....\$4.35

51977 Champion 687 Spark Plug for Twin Alky.....\$10.75

51978 695 C55R Recessed Gap Racing Spark Plug for High Performance Alcohol Pro V-Twin Engines.....\$16.26



V-TWIN KOHLER COMMAND 18-30hp ENGINES



Spark Plug Wire

18" 8 mm high temperature spark plug wire.



51371 Plug Wire.....\$15.00/ea.

Billet Aluminum Clutch Hub

For Command and newer Kohler 1 cylinder engines. Also fits some Briggs Vanguard engines. 4 bolts on 3" center-to-center flywheels with 1.875". Comes with 5/16" holes pre-drilled. Customer can drill to 3/8" if needed.



51161 CHC.....\$41.25
52731 Bolts for Stock Flywheel.....\$7.39
52732 Bolts for Aftermarket Flywheel.....\$7.39

Cam Degree Tool

Used to easily degree camshaft and check end play of cam and crankshaft.



51433 Degree Tool.....\$49.19

Stock Kohler Closed Chamber Head

Sold in pairs.



52412 Closed C Heads.....\$342.84

MSC Pro V-Twin Complete Cylinder Heads

Complete heads with titanium valves, CNC ported, PAC springs with titanium retainers, ultra pro magnum rockers, ARP studs and lash caps. Sold in pairs.

53415 Pro V-Twin Head (complete).....\$2,301.29

Pro V-Twin Ported Cylinder Heads

All major port work completed. Ready to install. 1.750" intake seat and 1.500" exhaust seats. Seats, valves, intake, and exhaust flanges are sold separately.



52414 Head Pro V-Twin.....\$650.25

Kohler Command Engine Sleeves

For 3.270 bore (25 hp) and 3.307 bore. Use to sleeve your 18 to 22 hp engine to a larger bore size or to repair worn-out bore. Sold in pairs.



52558 Sleeves.....\$66.00

52559 Sleeves - install (machine work service and installation including finishing bore and hone).....\$288.00

Head and Front Locating Pins

Six needed. Sold as a set of 6.



52413 1238003.....\$19.80

Mounting Brackets

Drilled and tapped. Set up on block.



52359 MB.....\$31.19

Command Copper Head Gaskets

Thicker head gaskets are useful for gaining more clearance for valve to piston clearance on bigger camshafts. Sizes: 18-22hp, 25hp, and 3.375" bore. Sold in pairs.



52561 HGC3118 (.031" thick)
52562 HGC3125
52563 HGC31-Large.....\$31.50
52564 HGC6218 (.062" thick)
52565 HGC6225
52566 HGC62 - Large.....\$51.19

Valve Covers

With o-ring and stainless steel bolts. Prevents leaks from valve cover spacers. Designed to clear most all roller rockers. Sold in pairs.



51508 VC.....\$124.40
51222 24153 O-Ring Gasket.....\$6.25/ea.

Engine Packages:

Good core required - Same size as engine we are building.

MVP Command Engine Package

Includes: 18 to 25 hp, 1.2 carb gas or alky, balanced steel crank, billet rods, flat top pistons, roller cam, roller rockers, double springs, fully ported stock heads, steel flywheel, E.I., custom intake and header. Dyno-tuned. MWSC's most affordable price. Power ranges from 50 hp to 100 hp, 38-56 cubic inch. \$125.00 Freight charge applies.

52560 MVP Command.....\$6,600.00

MVP Command Pro V-Twin Engine Package

Includes: 18 to 25 hp, same engine as above with the exception of pro v-twin heads, camshaft, and cubic inch size up to 56 cubic inches. Up to 135 HP. \$125.00 freight charge applies.

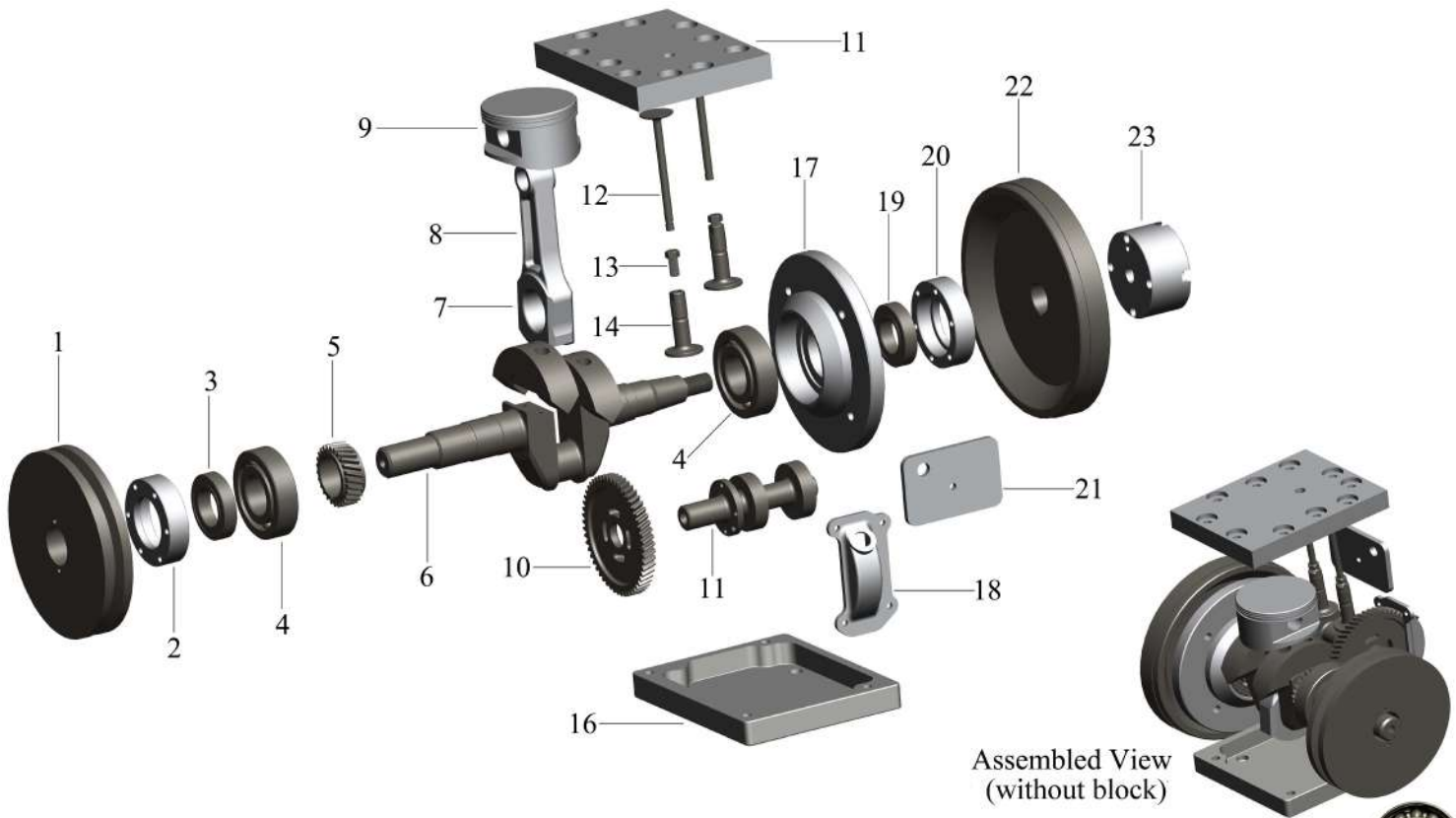
52567 NQS Pro V-Twin.....\$9,900.00

MVP Special - Kohler Command V-Twin

Billet rods, Diamond flat top pistons, reground camshaft, new lifters, professionally ported heads, heavy duty single valve springs, rework downdraft carb with an adjustable main jet, velocity stack, 2 into 1 header, adjustable steel flywheel and engine dyno service. 50-70 HP. \$125.00 freight charge applies.

52568 MVP Special.....\$3,190.00

ONLINE ORDERS OVER \$75 SHIP FREE!



1 - 7.5" Billet Heavy Steel Pulley

Weighs 14 lbs. Includes pulley bushing.

- 51538** FPH1 (1")
- 51539** FPH1125 (1.125")
- 51540** FPH1250 (1.250").....**\$112.55**

*Midwest Super Cub cranks take 1.250"

7.5" Aluminum Plain Front Pulley

Includes pulley bushing. Weighs 2 lbs.

- 51534** FPP1 (1")
- 51535** FPP1125 (1.125")
- 51536** FPP1250 (1.250").....**\$84.41**

*Midwest Super Cub cranks take 1.250"

Pulley Bushing

- 51365** PB1
- 51366** PB1125
- 51367** PB1250.....**\$13.67**

2 - Front Double Bearing Cups

Front cup. This set up helps to support the crank.

- 52216**DBC-F.....**\$52.39**

3 - Bearing for Front Bearing Cups

Front bearing designed to fit the front double bearing cup.

- 51037** R24RS.....**\$18.99**

4 - Main Ball Bearing

Higher strength and less rolling resistance than stock.

- 51604** MB8 (8 ball import).....**\$31.74/ea.**

5 - Steel Crank Gear

Can be used with cast cams.

- 51739** Crank Gear.....**\$72.75**

6 - Forged Steel Crankshafts

.4340 forged steel crankshaft, large radius journals. Available sizes: 3.250" (stock), and 3.375".

- 51764** C3250
- 51796** C3375**\$339.00**

Billet Super Duty Crankshafts

Includes: crank, gear, counter weights, and a 3 year Pro Rated warranty. *Torque counterweights to 45 ft #.

Crank Size	Crank #
2.875	51762
3.000	51784
3.250	51766
3.500	51768
3.625	51770
3.750	51774
..... \$669.74	

\$9.95 FLAT RATE SHIPPING!

SINGLE CYLINDER K-SERIES ENGINES



7 - Rod Bearings for Rod

Comes with bearing lock hole already drilled. *Customer must radius edges.



- 51961** RodBrg (Standard)
- 51962** RodBrg10 (.010 under)
- 51963** RodBrg20 (.020 under)
- 51964** RodBrg30 (.030 under).....**\$31.15**

8 - Billet Aluminum Connecting Rods

Midwest Super Cub brand.

These connecting rods feature a bearing lock to prevent rod bearing movement. Rod includes dipper. See chart on page 38 for options.



<u>Rod #</u>	<u>Rod Length</u>
51945	5.300 12, 14, & 16 HP Stock Length
51946	5.750
51947	5.812
51948	5.875
51949	5.906
51950	5.937
51951	5.968
51952	6.000
51954	6.125
51957	6.187
51958	6.250

*Torque rod bolts to 18-20 ft #. Torque dipper to 155-160 in. #
.....**\$177.00**

Rod Cap Install - see page 37 and possible block modifications

When purchasing a crank, rod, and piston. Call to order and ask for discount #52652. A savings of \$65.00!

Instructional DVD

DVD on how to degree a cam in a 1 cylinder motor.
FREE TO DOWNLOAD ONLINE.

52978.....**\$10.00**

GIFT CERTIFICATES

AVAILABLE!

Any occasion, any amount, any time.
Order Online or call in to order one today!
NO EXPIRATION DATE!

9 - Diamond Pistons

PH measured from wrist pin to top of piston.



<u>Piston Size</u>	<u>PH</u>	<u>Piston Package</u>	<u>Rings Only</u>
3.405	.875	52491	52537
3.775	.875	52498	52541
3.937	.875	52504	52546
3.405	1.125	52490	52537
3.530	1.125	52493	52539
3.775	1.125	52499	52541
3.810	1.125	52500	52546

Sold individually.....**\$224.59**

See Page 37 for installation information.

Rings.....**\$49.43**

Piston size 3.825 has a ceramic coated top and molycoated skirts. Gas ported. .875" pin height.

52544.....**\$257.23**

10 - Steel Adjustable Cam Gear

Fits: MSC, Lakota, Nichols, and Vogel steel camshafts.



52055 CG.....**\$71.70**

11 - Billet Aluminum Head Blanks

For 10, 12, 14, and 16 hp Kohler engines. These heads come with the head and bolt pattern drilled and counter bored.

Head gaskets on page 34.

<u>Engine HP</u>	<u>Blank #</u>
10-12 & 14	52263
16	52264



.....**\$54.72**

<u>Engine HP</u>	<u>CNC #</u>
10-12	52265
14	52266
16	52267



CNC heads with stock size valves and 330 lift cam.

CNC 10-12 (pictured)

CNC 14.....**\$90.42**

CNC 16.....**\$102.69**

ONLINE ORDERS OVER \$75 SHIP FREE!



SINGLE CYLINDER K-SERIES ENGINES



12 - Manley Stainless Valves

Fits Kohler single cylinder engines.

- 51984** Intake 2.035"
- 51983** Exhaust 1.625"
- 51982** Exhaust 1.380"
- 51981** Intake 1.380"
- 51980** Exhaust 1.125".....\$49.96/ea.



Bronze Offset Valve Guides

For 1 cylinder Kohler engines. Hard bronze offset guide moves valve .085" from the center line of existing hole. No machine work necessary to install. Gain performance by moving the valves closer together for a tighter combustion chamber.

- 51345** Guide.....\$16.50ea.



Head Stud Kit

Includes: 10 studs, washer, and nuts.

- 52701** StudKit16.....\$37.90



Dual Valve Spring

Reverse wound. Includes aluminum retainers and steel valve locks. Use only the outer spring for cast iron cams and both springs for steel cams. Eliminates valve float. Sold in pairs.

- 51969** Spring.....\$39.67



13 - Large Headed Adjusters

9/16" head diameter for offset valves. Larger than stock adjusters. A must have for many engines with relocated valve locations. Works just like a stock adjuster, no jamb nut required. Sold individually.

- 51354** LHA.....\$10.00/ea.

14 - Large & Super Large Base Lifters

For camshaft lifts under .575". Fits single cylinder Kohler engines; 1.280" face diameter.

- 51358** LBL (Large base lifter)
- 51356** SLBL (Super large base lifter for camshafts over .570" lift. 1.500" or 1.75" diameter head.)
- 51357** SLBL175 (Super large base lifter 1.75" dia.)\$54.96/ea.
- 52729** DLC coated lifters (1.75" diameter).....\$103.50/ea.



15 - Steel Cam Blank

- 52054** Cam Blank PT (Pin through camshaft blank)...\$75.75



Hardened Cam Pin

For pin through cams.

- 51048** Cam Pin.....\$19.51



16 - Aluminum Oil Pan

Replace your cast pan that leaks with aluminum oil pans. 1 qt. size.

Includes: bolts & plug. Stainless steel threads.

- 51596** OP1.....\$141.93
- 52781** Pan Gasket.....\$11.50



17 - Billet Aluminum Bearing Closure Plate

- 52049** BCP.....\$119.00

Copper Side Closure Plate Gasket

This gasket takes the place of the thick stock gasket. Reusable, never needs replacing. .031" thickness.

- 52342** CPG.....\$17.88



Copper Head Gaskets

For 10, 12, 14, and 16 hp engines.

- 51346** HG3112 (10-14 hp, .031" thickness)
- 51347** HG3116 (16 hp).....\$21.95
- 51348** HG6212 (10-14 hp, .062" thickness)
- 51349** HG6216 (16 hp).....\$29.59



\$9.95 FLAT RATE SHIPPING!

18 - Billet Aluminum Cam Cover

For single cylinder Kohler. Includes gasket.

- 51812** Cam Cover.....\$76.85



19 - Rear Bearing

- 51036** R22RS.....\$17.99



20 - Rear Double Bearing Cup

- 52217** DBC-R.....\$52.39



21 - Aluminum Tappet Cover

Includes gasket. 1/8" pipe tapped hole.

- 51972** TCA.....\$22.33



SINGLE CYLINDER K-SERIES ENGINES



22 Large Steel Flywheel -K-Series 10-16H

For ring gear starters. Close to stock flywheel weight. Weighs 19 lbs. with ring gear step for stock ring gear.



51899 F19.....\$170.00

Large Heavy Steel Flywheel - K-Series 10-16 HP

For stock and stock altered motors. Has steps for your ring gear. Heavier than stock for more upper-end power. Weighs 32



51900 F25.....\$170.00

Starter Ring Gear - Used

51528 SRG Twin

52364 SRG 1 Cylinder.....\$55.00



23 - Billet Aluminum Clutch Hub

4 bolt or dowel pin versions available.



52134 Clutch Hub with dowel pin (pictured).....\$42.19

51249 Dowel Pin.....\$5.45

52636 Bolts.....\$6.20

Crank Nut for Steel Cranks

Sold individually. 3/4" fine thread. Not stock size

51224 Crank Nut.....\$6.25

Replacement Rod Bolts

Sold in a set of 4 (2 long & 2 short). Long bolts to cam side.



51926 Rod Bolts.....\$50.64



Come pull or watch at one of our events.
See page 47 for details.

VooDoo Dual Fire Coil

Replaces Harley coil.



51378 Dyna1.....\$95.42

Coil

High output, internal resistor.

3 ohm coil. Replacement for stock or Bosch Coil.



52036 Coil.....\$61.00

Crank Trigger Ignition

For single cylinder engines. Kit includes: magnet ring, bracket, and module. Easy installation. Buyer must specify diameter of PTO end of crank at the block. Eliminates need for points and condenser.

*MWSC crank requires a 1.5" ring.

51298 EI10 (1.000")

51299 EI1125 (1.125")

51300 EI1250 (1.250")

51301 EI1500 (1.500").....\$102.92

51292 Magnet Ring (sold Separately).....\$41.55



52986 One Replacement Module w/ Red & White Wires..\$81.65

52987 One Replacement Module w/ Red & Black Wires..\$81.65

Chevy Points Bracket with Cover

Make points and timing adjustments easily with this Chevy points conversion bracket. Unit replaces points bracket

on 8 - 16hp Kohler engines. Enables you to use Chevy points. 32 oz. Accel points recommended.

to use Chevy points. 32 oz. Accel points recommended.

51923 PT.....\$31.88

51921 PTC (points cover only).....\$10.80



32oz. Accel Points for Chevy Points Bracket

High tension spring prevents points float. Includes Accel High Performance Condenser.

51917 Points.....\$61.89



ONLINE ORDERS OVER \$75 SHIP FREE!

Plain Mandrel Bent Pipe

Overall length of pipe is 24".

- 51610** Pipe38 (10 - 14 hp)
- 51609** Pipe58 (16 hp)
- 51608** Pipe34 (Aftermarket).....**\$38.75**



Exhaust Pipe Covers

Various colors available:
red, black, yellow,
John Deere green, blue,
purple, pink, and orange.

- 52028** XPC.....**\$12.66**
- 52029** XPCXL (2" - Black, Red, Yellow, Green).....**\$14.18**
- 52030** XPCXXL (2 1/2" - Black only).....**\$16.21**



Stock Altered Block

This block replicates the K-341 Kohler block. Features include: increased deck strength, more rigid main bearing areas, and ductile iron material. Weighs 61 lbs.

- 52416** SA1.....**\$945.54**



Port Support Plate for Kohler Engines

A 1/4" thick aluminum plate that bolts on the side of the Kohler engine to support the port on large port/ large valve engines.

- 51611** PS.....**\$46.63**



Head Hold Down for Kohler Engines

Fits 10 - 16 HP engines.

- 51579** HHD.....**\$62.92**



Economy Exhaust Flanges

For the do-it-yourself person. For 10 - 14 hp and 16 hp Kohler engines. Bolts onto the engine and a pipe can be welded to the flange. EXF 12 comes with copper gasket.

- 51304** EXF12 (10 - 14 hp).....**\$27.81**
- 51305** EXF16 (16 hp).....**\$20.14**



Exhaust Flanges with Bolts

- 51871** XF12 (10 - 14 hp Kohler with copper gasket)....**\$42.83**
- 51873** XF16 (16 hp Kohler).....**\$44.38**
- 51874** XF34 (Aftermarket blocks).....**\$50.17**



1.5" Liquid-Filled Fuel Pressure Gauge

Measures 0 - 15 lbs.
Midwest Super Cub brand.

- 51306** FPG.....**\$30.53**



Fuel Tank

Works for gas or alcohol. Plastic 2.5 qt. fuel tank with bottom 3/8" feed nipple top return line. Includes: wire mounting rack, lid, and fuel line. Tank dimensions: 8" tall, 6" wide, and 5" deep.

- 51607** PFT.....**\$38.95**
- 51335** Fuel Line (Replacement fuel line only).....**\$2.00/ foot**



**Look for the
Midwest Super Cub
booth at the National Farm
Machinery Show
Booth #2801 - 2802
February 12-15, 2020
The 1/2 scale 4020 JD
Wheatland tractor
will be on display!**

\$9.95 FLAT RATE SHIPPING!

Degree Wheel

These wheels provide exceptional precision and accuracy.

- 51529** DW.....**\$29.88**



FAQS

Piston Ring Info

Piston Oil Rail Supports for V-Twin .750" Pin Height pistons and 1 Cylinder K-Series .875" Pin Height Pistons.

On the .750 pin height pistons, they use oil supports to support the oil ring as it passes over the wrist pin area. These are installed with the dimple on the oil rail facing downward and should be located in the wrist pin area. The oil rails ARE NOT replaced when installing new rings. They don't wear out since they don't touch anything. Oil rails are also used on the .875" pin pistons used in the 1 cylinder Kohler K-Series engines.

What length connecting rod do I need if running a k-series 12hp-16hp factory piston?
5.300"

What is the stock piston pin height for K-Series Kohler 1 cylinder engines?

Stock pin height is 1.700" for the 12, 14 & 16 and the K 361 18HP, the 10HP pistons is 1.62. These along with stock crankshafts, requires a 5.300" connecting rod. A piston with a 1.125" pin height requires a 5.875" rod and a .875" pin height require a 6.125" rod. These will bring the piston flush with the deck of the block. If you want to pop the piston out order the corresponding rod (i.e. if 5.875" is flush then 6.000" would pop it out .125").

See the rod chart on page 40.

How do I install a starter ring gear on flywheel?

Simply heat the ring gear up with a torch or put in oven until hot. Then drop ring gear onto flywheel, chamfer on inside diameter goes down. To remove starter ring gear, use a punch and tap it off or use an air chisel.

What are the differences between the Kohler 10, 12, 14, 16hp motors(pistons, rods, crankshafts)?

The differences between the OEM 10hp and 12hp, 14hp and 16hp Kohler pistons, rods and crankshafts: The 10hp piston has a compression height of 1.62". The rod when measured from the centerline of each hole is 5.562" in length. The crankshaft has a stroke of 2.875"; wrist pin size is also different. The 12hp, 14hp and 16hp piston has a compression height of 1.7". The rod when measured from the centerline of each hole is 5.3" in length. The crankshaft has a stroke of 3.25".

The 10hp, 12hp, 14hp and 16hp Kohler blocks all have the same deck height, which is 8.625" (when measured from the centerline of the main bearings to the top of the block.) Crank Trigger bracket holes do not line up on the block.

Our crank trigger bracket is made for two (2) different bolt patterns. The larger pattern is a bolt circle of 5.625" (5 5/8) and the smaller pattern is 5". The customer can either drill or tap their block to one of those patterns or they can modify the bracket if there is room.

Rod Cap Install-

On a 1 cylinder K-series Kohler which direction does the rod cap go on the MWSC rod and do you use a bearing?

Rod cap goes on with 1/2 " dish cut goes toward cam or oil hole in rod cap goes to cam or thins side goes toward cam. Longer Bolts go on this side. All our rods are made to use a rod bearing we offer standard, .10, .20 & .30 under. In other words the thin side of the rod goes toward the camshaft.

On a 1 cylinder K-series Kohler, what is the minimum valve clearance to the head?
.030" to .050".

Is a 10 HP rod different than 12-16 HP motors?

Yes. 10HP rod length is different and we do offer aftermarket standard length rods for them that accept a rod bearing. The 10hp rod is 5.562 long and has a smaller wrist pin (.859") instead of the standard Kohler of .875".

What size socket goes on the MWSC rod cap bolt?

5/16" 12 point socket available at Sears, Matco Tools or Snap On. MWSC rod bolts are torqued to 20 ft lbs and is typically engraved on the rod.

What should the plug gap be set for a Stock or Stock Altered Tractor?

Start at about 30-35, not terribly important. They will run with as low as a .010" gap to as wide as .075". Tested quite a few different plugs and don't seem to make any difference on the dyno.

I received my MWSC rotating assembly for a single cylinder and my counterweights are not marked. Does it matter what weight goes on what side of the crank?

The crankshaft does not know the difference. Make sure the weight clears the cam.

Will our steel flywheels accept the stock charging system?

No, the stock charging system is not needed for tractor pulling/racing applications.

Are any modifications required to my k-series block when switching to an aluminum connecting rod? Best ways to attempt an engine build?

I like to dummy assemble every engine I build. This rules out having any issues and having to do it all over again multiple times. Simply install the crank stick and bearing closure plate. Put a light coat of oil or assembly lubricant on the bearing surface. Remove rod cap, pay attention to the cap bolt location(long bolts, short bolts). Install the chamfered rod bearing(will be discussed in another F.A.Q. I like to put a light coat of oil on the backside of the bearings to ease mock up/assembly. Put a light coat of oil on the piston wrist pin and attach piston to rod. Now oil the freshly honed bore. No rings are needed at this time. Rotate the crank stick so that journal is all the way up, we call this top dead center. Slip piston/rod into bore(cut out/thin side towards cam). Now spin crank stick to bottom dead center and install rod cap. Tighten the 5/16 12 point bolts to a snug, torque spec is not needed at this time. Now is time to check connecting rod to cylinder clearance. This can be done with a cutoff wheel. After this step is complete you can go along and degree the camshaft, or at least check it, if using cast crank and cam(stock timing marks). Then check all other clearances, cam lobe to connecting rod, cam lobe to lifter, cam lobe to counter weight, connecting rod side clearance, crank stick end play, valve to cylinder head, cam end play, gap rings to piston manufacturers specs. After everything appears to be happy take it all apart and clean for final assembly. This was a fairly fast run down but MOST of these steps to building an engine will appear on other FAQs.

Visit our YouTube channel for great technical tips, tricks, and useful instructions!



www.YouTube.com/MidwestSuperCub

CARBURETORS



Carb Casting 1.200" and 1.00" Stock Appearing Kohler Carbs

Set up for alcohol or gas. 1.200" venturi with 1.530" carb butterfly. 1.000" venturi with 1.300" butterfly with aluminum velocity stack.



- 52082 Carb-A (1.2 Alcohol).....\$398.35**
- 52094 Carb-G Twin (1.2 Gas).....\$388.88**
- 52085 Carb-A1 (1.0 Alcohol - pictured).....\$398.35**
- 52095 Carb-G1 (1.0 Gas).....\$388.88**
- 52703 Carb-Gasket.....\$4.00**
- 52096 Carb GS 1 cylinder (1.2 Gas).....\$388.88**

V-Stack Adaptor

For 2-barrel carb to fit K & N air filter.



- 52792 V-Stack-2.....\$71.27**

Ram Tube

One inch aluminum ram tube. Works with stock carb.



- 52704 RT1.....\$41.96**

Billet Aluminum Air Filter Adaptor - Single Cylinder

This air filter adaptor fits directly onto Kohler carbs. Comes with stainless steel screws. Works with K & N filter on flange.



- 52060 VS1.....\$35.34**

To order K&N air filters visit
www.knfilters.com
or your local NAPA Dealer

1.00" and 1.2" carbs and airfilter adaptors part # R119004
2 barrell v-stack filter part # 59-5007

Throttle Shaft for MSC Carbs

Includes bolts.



- 52072 Throttle Shaft.....\$66.15**

Main Jet

For MSC and stock carbs.



This requires the use of a bottom adjuster on a stock carb. (52061).

- 52066 MainJet.....\$33.47**

Dual Barrel Carb Jets

Jet pack includes two of each size:

- 52417 .042**
- 52418 .046**
- 52419 .052.....\$12.15/ea.**
- 52420 DB-Pack (jet pack for Kohler 2-barrel carb).....\$36.41**
- 52734 Main Jet (for command downdraft carb)...\$32.15/ea.**

Throttle Shaft for Stock Carbs

No screws. No machining.

- 51020 47144365.....\$38.56**

Main Jets for SS Carbs

Sold individually.

- 51008 117206.....\$30.03/ea.**

Carb Gasket for Floatbowl



- 52706 FB Gasket.....\$6.15**

Needle & Seat for Kohler Carb

Used in MWSC gas carb.

- 52705 Needle.....\$22.50**

Throttle Plate Stock

1.300" and 1.530" diameter.



- 52064 Throttle Plate (1.300)**
- 52080 (1.530).....\$15.00**

\$9.95 FLAT RATE SHIPPING!

GIFT CERTIFICATES

AVAILABLE!

Any occasion, any amount, any time.

Call to order one today!

NO EXPIRATION DATE!

**Look for the Midwest Super Cub
booth at the National Farm
Machinery Show
Booth #2801 - 2802
February 12-15, 2020**

CARBURETORS



Command Carb Adaptor

For downdraft command carb to the command vertical intake manifold.

The vertical intake manifold flows nearly twice the air of the horizontal intake manifold.



52181 Carb Adaptor.....\$49.96

Command Carb Bracket

For downdraft carb for gas pedal cable. Bolts on in place of solenoid. Sold individually.



52421 Bracket.....\$25.41

Carb Manifold

Adapts carb to the aftermarket blocks. 6" length. Uses four bolt flange on engine.

For Super Carb D and Carb 58.



51597 Manifold.....\$146.88

Super D Float

51069 112187.....\$29.85



Super D Drop Manifold

1 3/8" x 3" bolt pattern.



52090 DM-Super D.....\$146.88

Command Air Cleaner Adaptor for Stock Carb

52557 V-Twin AC Adaptor.....\$39.65

Carb Checkers

NQS Certified. Available in 1.0" and 1.2" sizes.

52219 Check 1 (1.0")

52220 Check 2 (1.2").....\$44.63



Carb Conversion Kit

Changes MWSC carbs from gas to alcohol.

52707 Carb Kit.....\$25.00



Mixture Adjuster for MSC Main Jet

52061 Adjuster.....\$25.00



Holley Fuel Pump

For gas and alcohol. Polished aluminum universal fit.

51567 Fuel Pump.....\$224.67



Holley Fuel Pressure Regulator

1-4# tumble polished single inlet, dual outlet

3/8 NPT (National Pipe Thread).

52057 Regulator.....\$42.84



Aluminum Super Carb

Cast aluminum 58mm carb with 60.3mm throttle bore butterfly. Larger than the S & S Super D carb which is 50mm.

52115 Carb-58.....\$833.38



Vinyl Carb Covers

Vinyl dust covers with an elastic edge to securely hold cover in place, even on open trailers. Comes in 3" and 4" sizes. 3" cover fits MWSC velocity stack, Lakota, Nichols, and Vogel brand carbs. 4" cover fits the S&S Super D carbs.

51233 DC3 (3").....\$4.15

51234 DC4 (4").....\$5.20



Rework Downdraft Carb for 25 HP

Command Twin Cylinder

Carb is machined with a larger venturi & butterfly bore and installed an adjuster. Specify with or without choke plate. Core charge of \$175.00 included in price. A good core can save you money.

52928.....\$529.30



Mikuni HSR 42 mm Flat Slide Carb for Command V-twins or Big Block Briggs

Must specify which motor this will be used on so correct jet is installed. Comes with our adapter to work with MWSC cast intake manifold P.29 Part # 52554

53004.....\$415.60



ONLINE ORDERS OVER \$75 SHIP FREE!

SERVICES



Balancing Rotating Assembly

For single cylinder and v-twin engines. Piston, rod, rod bearing, crank, and heavy metal (priced per slug).

- 52708** Balancing.....\$131.25
- 52709** 3/4" x 1" Heavy Metal.....\$42.00
- 52710** 3/4" x 1.2" Heavy Metal.....\$44.10

Bore and Hone Single Cylinder Block

- 52182** Bore & Hone.....\$90.00

Bore and Hone V-Twin Block

- 52183** Bore & Hone Twin.....\$135.00

Bore and Sleeve

V-twin bore block. Installation of sleeves and hone (does NOT include cost of sleeves).

- 52184** Bore and Sleeve.....\$285.00

Deck Cylinder Head

Priced individually.

- 52711** Decking.....\$30.00

Machine Block for Roller Lifters

- 52712** Machine Block for Roller Lifters.....\$110.00

Machine Head for Larger Seats

Includes installing and cutting seat (EACH SEAT). *Seat not included.

- 52713** Machine Head for Larger Seats.....\$80.00

Cut Seats for Oversize Valves

One pair of heads - four seats.

- 52714** Machine Seats for Oversize Valves.....\$60.00

Machining Pistons

Machining pistons for valve clearance.

- 52715** Machining.....\$65.00

Machining for Roller Rockers

Machining head for roller rockers.

- 52716** Roller Rocker.....\$68.00

Port and Polish

- 52717** Port and Polish Single.....\$250.00

Command Port and Polish

- 52718** Port and Polish Command.....\$205.00

Crank Grinding

Grind crank to customer specifications or to clean the crank.

- 52719** Crank Grinding.....\$50.00

Cut Head for O-Ring Material & Deck Heads

- 52720** O-Ring.....\$65.00

Copper O-Ring Material

For two heads.

- 51113** CO-Ring.....\$10.50

Cam Pro Check

- 52721** Cam Pro.....\$40.00

Dyno Engine Tuning

Hourly rate. (1 Hour Minimum)

- 52722** Dyno1st Hour \$75.00
- Each Additional Hour.....\$50.00**

Midwest Super Cub Apparel

Colors, styles, and sizes vary.

Call to place your order today! 1(563)659-5276

\$9.95 FLAT RATE SHIPPING!



- T-shirt.....\$20.00
- Hooded sweat shirt.....\$35.00
- Long Sleeve T-Shirt.....\$25.00



- Baseball cap
- MWSC baseball cap.....\$20.00

- Beverage Coozie.....\$5.00**

2019 National Garden Tractor Pulling Points Series

Contact Info.: Matt Ronnebaum (567)644-3662

mronnebaum09@outlook.com / ronniernqs@gmail.com

Points are compiled for these classes: PS, SS, SA, Pro V-Twin, Pro Outlaw, & PST

2020 Events:

White Pine, TN - January 31st & February 1st

Keystone Nationals/ Harrisburg, PA - March 12th & 13th

Richmond, KY - March 27th & 28th

Princeton, IN - Oct. 2nd & 3rd

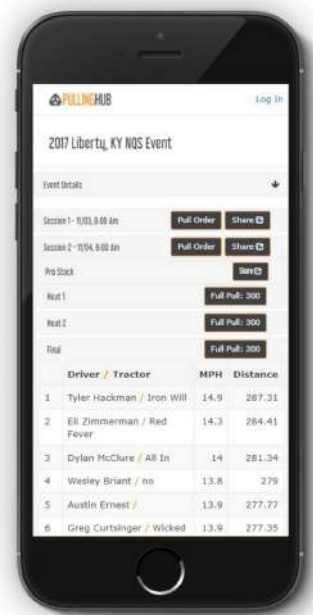
Liberty, KY - Nov. 6th & 7th (tentative)



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Is organizing your club pulls a lot of work?
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Contact us at support@pullinghub.com and give us your club name and contact information to get free use of the software! (Limited Time Offer)

V-Twin Torque Guide

Model (Horsepower)		CH & CV18 (18)	CH & CV20 (20)	CH & CV22 (22)	CH & CV25 (25)
Breather Plate			7.3 N-m (65 in. lb.)		
Carburetor Mounting Nuts			9.9 N-m (88 in. lb.)		
Charging Stator Mounting Screw			4.0 N-m (35 in. lb.)		
Connecting Rod Cap Fastener Torque		8mm straight 22.7 N-m (200 in. lb.), 8mm step-down 14.7 N-m (130 in. lb.), 6mm straight 11.3 N-m (100 in. lb.) MWSC RODS 20 FT LBS.			
Closure Plate (CH)/Oil Pan (CV)			24.4 N-m (216 in. lb.)		
Cylinder Head	Fastener		40.7 N-m (30 ft. lb.) ²		
Rocker Pedestal (Pivot)			11.3 N-m (100 in. lb.)		
Electric Starter Mounting			15.3 N-m (135 in. lb.)		
Flywheel	Fan Fasteners		9.9 N-m (88 in. lb.)		
	Retainer Screw		66.4 N-m (49 ft. lb.)		
Ignition	Spark Plug		24.4/29.8 N-m (18/22 ft. lb.)		
	Ignition Module		4.0*/6.2 N-m (35*/55 in. lb.)		
Manifold (Intake)			9.9 N-m (88 in. lb.)		
Muffler Retaining Nuts			24.4 N-m (216 in. lb.)		
Rectifier Fasteners			4.0 N-m (35 in. lb.)		
Oil Filter	Oil Filter		5.7/9.0 N-m (50/80 in. lb.)		
	Oil Drain Plug (1/8" NPT)		13.6 N-m (10 ft. lb.)		
	Oil Sentry™ Switch		7.9 N-m (70 in. lb.)		
Throttle/Choke Controls	Governor Control Lever		9.9 N-m (88 in. lb.)		
	Speed Control Assembly		7.3*/10.7 N-m (65*/95 in. lb.) ¹		
Valve Cover	Gasket/Sealant Type		3.4 N-m (30 in. lb.)		
	O-Ring Type		7.9 N-m (70 in. lb.)		
Valve Cover		Closure Plate (CH)/Oil Pan (CV)		Breather Plate	

KOHLER 10HP ENGINE SPECIFICATIONS

ENGINE BORE	3.25	ENGINE DISPLACEMENT	
ENGINE STROKE	2.875	CUBIC INCH	23.85
ROD LENGTH	5.563	CC'S	391
PISTON PIN HEIGHT	1.625	ROD ANGLE RATIO	1.93
HEAD & GASKET CC	68	COMPRESSION RATIO	6.75
PISTON HEIGHT OUT OF BLOCK	0.000		
DECK HEIGHT OF BLOCK	8.625		
INDICATED ROD LENGTH FOR GIVEN PISTON HEIGHT			5.5625
INDICATED PISTON HEIGHT FOR GIVEN ROD LENGTH			1.625

KOHLER 12HP ENGINE SPECIFICATIONS

ENGINE BORE	3.375	ENGINE DISPLACEMENT	
ENGINE STROKE	3.25	CUBIC INCH	29.08
ROD LENGTH	5.300	CC'S	476
PISTON PIN HEIGHT	1.700	ROD ANGLE RATIO	1.63
HEAD & GASKET CC	85	COMPRESSION RATIO	6.61
PISTON HEIGHT OUT OF BLOCK	0.000		
DECK HEIGHT OF BLOCK	8.625		
INDICATED ROD LENGTH FOR GIVEN PISTON HEIGHT			5.300
INDICATED PISTON HEIGHT FOR GIVEN ROD LENGTH			1.700

KOHLER 14HP ENGINE SPECIFICATIONS

ENGINE BORE	3.5	ENGINE DISPLACEMENT	
ENGINE STROKE	3.25	CUBIC INCH	31.27
ROD LENGTH	5.300	CC'S	512
PISTON PIN HEIGHT	1.700	ROD ANGLE RATIO	1.63
HEAD & GASKET CC	85	COMPRESSION RATIO	7.03
PISTON HEIGHT OUT OF BLOCK	0.000		
DECK HEIGHT OF BLOCK	8.625		
INDICATED ROD LENGTH FOR GIVEN PISTON HEIGHT			5.300
INDICATED PISTON HEIGHT FOR GIVEN ROD LENGTH			1.700

KOHLER 16HP ENGINE SPECIFICATIONS

ENGINE BORE	3.75	ENGINE DISPLACEMENT	
ENGINE STROKE	3.25	CUBIC INCH	35.90
ROD LENGTH	5.300	CC'S	588
PISTON PIN HEIGHT	1.700	ROD ANGLE RATIO	1.63
HEAD & GASKET CC	98	COMPRESSION RATIO	7.00
PISTON HEIGHT OUT OF BLOCK	0.000		
DECK HEIGHT OF BLOCK	8.625		
INDICATED ROD LENGTH FOR GIVEN PISTON HEIGHT			5.300
INDICATED PISTON HEIGHT FOR GIVEN ROD LENGTH			1.700

STROKE	ROD	PIN HEIGHT	POP OUT
2.875	6.125	1.125	0.0625
2.875	6.187	1.125	0.125
3.000	6.000	1.125	FLUSH
3.000	6.031	1.125	0.031
3.000	6.125	1.125	0.125
3.250	5.875	1.125	FLUSH
3.250	5.906	1.125	0.03
3.250	5.937	1.125	0.062
3.250	5.968	1.125	0.093
3.250	6.000	1.125	0.125
3.375	5.812	1.125	FLUSH
3.375	5.875	1.125	0.0625
3.375	5.906	1.125	0.093
3.375	5.937	1.125	0.125
3.500	5.750	1.125	FLUSH
3.500	5.812	1.125	0.062
3.500	5.875	1.125	0.125
3.625	5.688	1.125	FLUSH
3.625	5.75	1.125	0.062
3.625	5.812	1.125	0.125
3.680	5.750	1.125	0.09
3.750	5.750	1.125	0.125

STROKE	ROD	PIN HEIGHT	POP OUT
3.000	6.250	0.875	FLUSH
3.250	6.125	0.875	FLUSH
3.250	6.187	0.875	0.062
3.250	6.250	0.875	0.125
3.375	6.125	0.875	0.062
3.375	6.187	0.875	0.125
3.500	6.000	0.875	FLUSH
3.500	6.031	0.875	0.031
3.500	6.125	0.875	0.125
3.625	5.937	0.875	FLUSH
3.625	5.968	0.875	0.03
3.625	6.000	0.875	0.062
3.625	6.031	0.875	0.093
3.680	5.906	0.875	FLUSH
3.680	5.937	0.875	0.027
3.680	6.000	0.875	0.09
3.680	6.031	0.875	0.121
3.750	5.875	0.875	FLUSH
3.750	5.906	0.875	0.031
3.750	5.937	0.875	0.062
3.750	5.968	0.875	0.093
3.750	6.000	0.875	0.125
3.875	5.812	0.875	FLUSH
3.875	5.875	0.875	0.062
3.875	5.906	0.875	0.093
3.875	5.937	0.875	0.125
3.937	5.812	0.875	0.03
3.937	5.875	0.875	0.093
3.937	5.906	0.875	0.125
4.000	5.750	0.875	FLUSH
4.000	5.812	0.875	0.062
4.000	5.875	0.875	0.125
4.090	5.750	0.875	0.045
4.090	5.812	0.875	0.107

Rod Guide



V-Twin Kohler Command Connecting Rod
See page 27 for ordering information



Single Cylinder Connecting Rod
See page 32 for ordering information

Interactive Gear Ratio Calculator

to help you determine the gears you need

MWSC.CO

CUB CADET GEAR RATIOS

Stock Cub Cadet 12/84

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	96.6	87.4	79.4	72.5	66.3	60.8	55.9	51.5	47.5	43.9	40.6	37.6	34.8	32.2	29.8
26/12/12 mph	4.1	4.6	5.0	5.5	6.0	6.6	7.2	7.8	8.4	9.1	9.9	10.7	11.5	12.4	13.4
23/10.50/12 mph	3.5	3.9	4.3	4.7	5.2	5.6	6.1	6.6	7.2	7.8	8.4	9.1	9.8	10.6	11.5

20% Underdrive 10/86

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	118.7	107.4	97.6	89.0	81.4	74.7	68.7	63.3	58.4	53.9	49.9	46.2	42.7	39.6	36.6
26/12/12 mph	3.4	3.7	4.1	4.5	4.9	5.4	5.8	6.3	6.9	7.4	8.0	8.7	9.4	10.1	10.9
23/10.50/12 mph	2.9	3.2	3.5	3.8	4.2	4.6	5.0	5.4	5.9	6.3	6.9	7.4	8.0	8.7	9.3

10% Underdrive 11/85

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	106.6	96.5	87.7	80.0	73.2	67.1	61.7	56.9	52.5	48.5	44.8	41.5	38.4	35.5	32.9
26/12/12 mph	3.8	4.1	4.6	5.0	5.5	6.0	6.5	7.0	7.6	8.3	8.9	9.7	10.4	11.3	12.2
23/10.50/12 mph	3.2	3.5	3.9	4.3	4.7	5.1	5.5	6.0	6.5	7.1	7.6	8.3	8.9	9.6	10.4

One Faster Pinion Gear 13/84

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	89.2	80.7	73.3	66.9	61.2	56.1	51.6	47.6	43.9	40.5	37.5	34.7	32.1	29.7	27.5
26/12/12 mph	4.5	5.0	5.5	6.0	6.5	7.1	7.8	8.4	9.1	9.9	10.7	11.5	12.5	13.5	14.5
23/10.50/12 mph	3.8	4.2	4.7	5.1	5.6	6.1	6.6	7.2	7.8	8.4	9.1	9.9	10.7	11.5	12.4

10% Overdrive 13/83

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	86.1	79.7	72.4	66.1	60.5	55.5	51.0	47.0	43.4	40.0	37.0	34.3	31.7	29.4	27.2
26/12/12 mph	4.5	5.0	5.5	6.1	6.6	7.2	7.8	8.5	9.2	10.0	10.8	11.7	12.6	13.6	14.7
23/10.50/12 mph	3.9	4.3	4.7	5.2	5.7	6.2	6.7	7.3	7.9	8.5	9.2	10.0	10.8	11.7	12.6

16% Overdrive 14/82

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	80.8	73.1	66.5	60.6	55.5	50.9	46.8	43.1	39.8	36.7	34.0	31.4	29.1	26.9	24.9
26/12/12 mph	5.0	5.5	6.0	6.6	7.2	7.9	8.6	9.3	10.1	10.9	11.8	12.7	13.8	14.9	16.0
23/10.50/12 mph	4.2	4.7	5.1	5.6	6.2	6.7	7.3	7.9	8.6	9.3	10.1	10.9	11.8	12.7	13.7

23% Overdrive 15/81

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	74.5	67.4	61.3	55.9	51.1	46.9	43.1	39.7	36.7	33.9	31.3	29.0	26.8	24.8	23.0
26/12/12 mph	5.4	5.9	6.5	7.2	7.8	8.5	9.3	10.1	10.9	11.8	12.8	13.8	14.9	16.1	17.4
23/10.50/12 mph	4.6	5.1	5.6	6.1	6.7	7.3	7.9	8.6	9.3	10.1	10.9	11.8	12.8	13.8	14.9

26% Overdrive 13/67

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	71.1	64.3	58.5	53.3	48.6	44.6	41.2	37.9	35.0	32.3	29.9	27.7	25.6	23.7	22.0
26/12/12 mph	5.6	6.2	6.8	7.5	8.2	8.9	9.7	10.6	11.4	12.4	13.4	14.5	15.6	16.9	18.2
23/10.50/12 mph	4.8	5.3	5.9	6.4	7.0	7.6	8.3	9.0	9.8	10.6	11.4	12.4	13.4	14.4	15.6

32% Overdrive 14/66

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	65.1	58.9	53.5	48.8	44.6	41.0	37.7	34.7	32.0	29.6	27.3	25.3	23.4	21.7	20.1
26/12/12 mph	6.2	6.8	7.5	8.2	9.0	9.8	10.6	11.5	12.5	13.5	14.6	15.8	17.1	18.5	19.9
23/10.50/12 mph	5.3	5.8	6.4	7.0	7.7	8.4	9.1	9.9	10.7	11.6	12.5	13.5	14.6	15.8	17.0

38% Overdrive 15/65

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	59.8	54.1	49.2	44.9	41.0	37.7	34.6	31.9	29.4	27.2	25.1	23.3	21.5	19.9	18.5
26/12/12 mph	6.7	7.4	8.1	8.9	9.8	10.6	11.6	12.5	13.6	14.7	15.9	17.2	18.6	20.1	21.7
23/10.50/12 mph	5.7	6.3	7.0	7.6	8.3	9.1	9.9	10.7	11.6	12.6	13.6	14.7	15.9	17.2	18.5

43 % Overdrive 16/64

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	55.2	49.9	45.4	41.4	37.9	34.8	32.0	29.4	27.2	25.1	23.2	21.5	19.9	18.4	17.0
26/12/12 mph	7.3	8.0	8.8	9.7	10.6	11.5	12.5	13.6	14.7	16.0	17.3	18.6	20.1	21.8	23.5
23/10.50/12 mph	6.2	6.9	7.5	8.3	9.0	9.8	10.7	11.6	12.6	13.6	14.8	15.9	17.2	18.6	20.1

47% Overdrive 17/63

Top Shaft Tooth Count	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Bottom Shaft Tooth Count	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
Final Gear Ratio	51.1	46.3	42.0	38.4	35.1	32.2	29.6	27.3	25.2	23.2	21.5	19.9	18.4	17.0	15.8
26/12/12 mph	7.8	8.7	9.5	10.4	11.4	12.4	13.5	14.7	15.9	17.2	18.6	20.1	21.7	23.5	25.4
23/10.50/12 mph	6.7	7.4	8.1	8.9	9.8	10.6	11.6	12.5	13.6	14.7	15.9	17.2	18.6	20.1	21.7

MPH BASED UP ON 5,000 RPM

Visit our YouTube channel for great technical tips, tricks, and useful instructions!

www.YouTube.com/MidwestSuperCub

Midwest Super Cub Hitch (NQS Approved) Informational Video

Identifying 1 Cylinder Kohler K-Series Engine Blocks

Wheel Stud Kit 7/16" x 20 Thread Today's tech tip briefly gives the customer a run down on the Midwest Super Cub wheel stud kit (7/16" x 20 thread)

Clearancing 1 Cylinder Engine Block for Aftermarket Billet Rods. This tech tip video may help when trying to make your aftermarket billet rod fit in a 1 cylinder engine block

1 Cylinder Kohler K-Series Head Stud Kit This tech tip is useful when replacing your head studs using our Midwest Super Cub head stud kit. The video demonstrates the head stud kit on a K-Series Kohler engine head

Camshaft Overlap vs. Top Dead Center

Clutch Spring Compression

Differences Between Forged Steel and Billet Steel Cranks. Here's a tech tip to help you understand what the differences are between a billet steel crankshaft and a forged steel crankshaft

Fitting Larger Overdrives in Reduction Housing This video will show you how to fit larger overdrives into the reduction housing

Holley Fuel Pump Relief Valve Sticking

1 Cylinder Crankshaft Counter Weights Clearance and Torque

Midwest Super Cub Carb Adjustments

Identifying 1 Cylinder Kohler K-Series Engine Blocks

Electronic Ignition for 1 Cyl. Kohler & Kohler Command

Clearancing 1 Cylinder Engine Block for Aftermarket Billet Rods. This tech tip video may help when trying to make your aftermarket billet rod fit in a 1 cylinder engine block

Fitting Rod Bearings for Aftermarket Steel Cranks This tech tip video will aid you in customizing your new rod bearings for your aftermarket steel crankshaft

For these and more helpful tech tip videos please visit our YouTube channel: www.YouTube.com/MidwestSuperCub

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agri-tronix
www.Agri-Tronix.com

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Midwest Super Cub is an authorized dealer. Call with any questions or to order one today! 1(563)659-5276 46



NATIONAL QUARTER SCALE PULLING

2019 NQS EVENTS

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 Walters State Great Smokey Mountains Expo Center, 1615 Pavilion Drive, White Pine, TN 37890
 Contact: Jody Possey 1(865)387-1549
 www.PoseyPullingTeam.com
 Classes: PS, SS, PO, PST, PVT, SA, Outlaw, PVT-Stockhead, & 1100 LP Diesel
 Latitude: 36.130111 Longitude: 83.293641
 *Second track just for local classes!

March 12 & 13 **Harrisburg, PA**
 PA Farm Show Complex, 2300 N Cameron St., Harrisburg PA 17110
 Contact: Doug Diehl 1(301)491-5054
 Daryl Musser 1(717)729-1103
 Pre-Entry only. See website for classes.
 www.keystonegtp.com

March 27 & 28 **Richmond, KY**
 Madison County Fairgrounds, 3237 Old Irvine Rd, Richmond, KY 40475
 Contact: Julian Stahl 1(563)659-5276
 Kenny Cornelison 1(859)200-3747
 www.nqspulling.org
 Classes: PS, SS, PO, PST, PVT, SA, Outlaw, PVT Stockhead twins, LSP Diesel, 1 Cylinder Factory Stock, SS X-Class and Prostock Diesel

www.NQSpulling.org

Scan the QR code to easily visit the official National Quarter Scale Pulling website.



October 2 & 3 (tentative) **Princeton, IN**
 Gibson County Fairgrounds, 709 N. Embree Street, Princeton, IN 47670
 Princeton Fall Nationals 19th Annual Tri State Tractor Pullers Association
 Contact: Brandon Hess
 hessbros.livestock@gmail.com or burkhartmax@yahoo.com
 www.NQSpulling.org
 Classes: PS, SS, PO, PST, PVT, SA, 30 Cubic Inch, SS, carb only, Lt. Pro., LPS Diesel

November 6 & 7 **Liberty, KY**
 Central Kentucky Ag/ Expo Center, 678 Wallace Wilkinson Blvd, Liberty, KY 42539
 Contact: Julian Stahl 1(563)659-5276 or
 Kenny Cornelison 1(859)200-3747
 www.NQSpulling.org
 Classes: PS, SS, PO, PST, PVT, SA, Outlaw, PVT Stock Head Twin, LPS Diesel, 1 Cylinder Factory Stock, PS, SS X-Class, Prostock Diesel

NOS HITCH HEIGHT LEGEND

CLASS PRO OUTLAW	
SUPER STOCK	#1050 13"
PRO V W/AFTERMARKET	
OR WELDED HEAD	#1000 12.25"
PRO V W/STOCK HEAD	#1025 12.5"
CLASS PST (PRO, SUPER, TWIN)	
PRO STOCK	#1050 13"
SUPER STOCK W/CARB	#1020 12.5"
PRO V W/STOCK HEAD	#1000 12.25"
39 CUBE TWIN	#1000 12.5"
CLASS PRO V-TWIN	
AFTERMARKET OR WELDED HEAD	#1000 12.25"
PRO V- TWIN WITH STOCK HEAD	#1050 13"
39 CUBE	#1075 13"
CLASS - SUPER STOCK X (LIGHTNING HEATS)	
SUPER STOCK W/CARB	#1050 13"
SUPER STOCK W/INJECTION	#1020 13"
CLASS - OUTLAW	
STOCK ALTERED	#1100 13"
LITE PRO (CHOICE)	#900 12.5" OR #925 12

1. **General Rules:** Rules apply to all classes unless otherwise specified
 - A. TRACK OFFICIALS DECISION WILL BE FINAL. ANY DISAGREEMENT ON THEIR DECISION ON ANY POINT OF CONTROVERSY WILL RESULT IN DISQUALIFICATION FOR THAT CLASS FOR THE DAY. *The track officials have the final say on what happens on the track.*
 - B. YOUR TRACTOR MUST MEET ALL SAFETY AND SHIELDING REQUIREMENTS PRIOR TO HOOKING OTHERWISE YOU WILL NOT BE ALLOWED TO COMPETE AND THERE WILL BE NO REFUND OF ENTRY.
2. **Track Operations:**
 - A. Driver must put his tractor in a neutral position and be hand pushed to the sled. Tractor must be shut down before chain will be unhooked from tractor.
Flag men will enforce this rule for the safety of the track help. See Rule 1.
 - B. No portion of the tractor shall interfere with the sled hitch during pull.
Many times the starting line becomes torn up, which will cause the front of the tractor to be lower than the rear tires. This may cause an interference of the cross bar for the wheelie wheels. The intent of the rule is not to interfere once the pull is underway. See Rule 1.
 - C. Any portion of tractor touching boundary line during pull will result in disqualification. This would be limited to the front or the rear tires. There is no out of bounds once the tractor passes the full pull mark. See Rule 1. The entire tractor must pass the full pull mark.
 - D. Two attempts will be allowed to start sled except in pull-offs. One attempt only in a pull-off.
An attempt is considered once the hook goes in the hitch and driver physically tries to start the tractor in motion by revving up the engine and attempting to release the clutch. See Rule 1.
 - E. The first puller can drop five places which mean he or she will actually start in the 6th position or they can come back immediately. If they do drop, they drop to the 6th position.
 - F. If a puller has a mechanical problem they have to drop back 6 positions (five more pull then they hook). If there are less than five tractors remaining, they have until the end of the heat plus five (5) minutes. If they are not able to hook within the allotted time they will receive last place in that heat. THE PULLER CAN NOT DROP TO ANOTHER HEAT - it would be unfair to the others in those heats.
 - G. Driver will be disqualified if he or she delays contest.
A puller is expected to have their tractor running by the time the sled gets back to the starting point. If the puller delays more than 90 seconds he will have to drop as discussed in 2-F.
 - H. Pulling position will be determined by drawing. The drawing should be done prior to the event for the heats.
 - I. Driver must remain seated during pull. Drivers must have at least one hand on the steering wheel at all times.
 - J. Weight transfer sled will be used. Either self-propelled or pull back. Must be a 3 foot chain with the hook point within 2 inches or less of the ground. All slam bars on sleds must be mechanically operated. No air, electrical or hydraulic slam devices accepted. Recommend all sleds be a single axle design. Tandem axle sleds tend to steer tractors once they are turned and tractors are more likely to become uncontrollable than with single axle sleds.
 - K. Tractors must be operated in a safe manner at all times.
 - L. All weights must be safely secured to the tractor. Any excessive or obvious loss of weights or components may be cause for disqualification. The flagman must make the call during the pull. Any disqualification for loss of weight or component must be made during the pull. A pull is started when the sled starts to move and is ended when the sled stops movement, even though the tractor may still be under power.
 - M. Track officials have the right to restart the class anytime within the first seven (7), either for full pulls or short tracking.
 - N. A tractor can only enter one time per class.
 - O. A tractor engine can only pull one time during the finals, can not be switched from one tractor to another ... AKA "The Black Nichols Rule". A puller is able to put in a back up engine, but not from another tractor pulling in the same finals.
3. **SAFETY:**
 - A. YOUR TRACTOR MUST MEET ALL SAFETY AND SHIELDING REQUIREMENTS PRIOR TO HOOKING OTHERWISE YOU WILL NOT BE ALLOWED TO COMPETE AND THERE WILL BE NO REFUND OF ENTRY.
 - B. HELMETS AND FIRESUITS ARE MANDATORY IN ALL CLASSES, MUST BE ZIPPED AND SECURED. Fire suits must be a minimum requirement of SFI 3.2A/1. Helmets must be a minimum requirement of Snell 95.
4. **Chassis:**
 - A. All tractors are required to have a switch that will kill engine and fuel pump in case of chain or hitch breakage. The switch will be located within range of six (6") either side of center of back of tractor with a minimum of a 1.5" circle.
Make sure it has an adequate size ring in order to ease connecting to sled.
 - D. All tractors must be equipped with a dead man throttle.
 - E. A minimum one (1) pound dry chemical fire extinguisher or equivalent. A gauge on the fire extinguisher is required. They can either be dry chemical or CO₂-type extinguisher. The fire extinguisher must be full.
 - F. All tractors must have a safety device to prevent turnovers. This device is to have wheels or skid plates. Wheels are to be at least 1" wide and 5" in diameter. Skid plates to have at least 3 square inches at ground contact point. Wheels or skid plates must be no less than 5" (tolerance: -1/4") behind the rear tires.
 - G. All exhaust must discharge vertically and be securely attached. No more than 10 degrees out of straight upward allowed.
 - H. ALL engines must have a scatter shield opposite the cam side of the motor; it must be of 1/8 in. steel or 3/16 in. aluminum. It must cover full height and width of block and be attached in a secure manner to frame and head or head plate. See Pro V-twin rules for V-Twin Shielding.
 - I. All drivers should be clean and neatly attired. Tractors should be clean and painted. Drivers under 18 years of age must have signed parental consent on file.
 - J. Obvious or excessive consumption of alcoholic beverages or drugs will be grounds for disqualification.
 - K. All final drive belts must be covered top 180 degrees and all flywheel and clutch assemblies must be covered 360 degrees with 1/8" steel or 3/16" aluminum and be securely fastened to the frame or engine.
 - L. Engine Dampers must meet requirements of SFI Spec 18.1 is required. A bolt is required to secure damper to crank. FLYWHEELS and STARTER PULLEYS must be of billet steel or aluminum (no cast or stamped steel pulleys). No welded on fins. All starter pulleys must have a retaining device to prevent pulley from coming off crankshaft.
 - M. All tractors to be equipped with workable brakes.
 - N. Fenders: Fenders must extend a minimum of 4" in width and must cover the front of tire to its furthest point forward. It is recommended that the foot step be connected to front of fender to avoid your foot being pulled in by the tire.
 - O. NQS Tech official reserve the right to implement rule changes for safety and health reasons at any time.
5. **Fuel:**
 - A. Open to two-wheel drive, rubber tired tractors, no dual wheels, chains or spikes. TIRES MUST BE NO LARGER THAN 26X12X12 FOR ALL TRACTORS.
 - B. All tractors must have at least a 3" seat back on all seats. Seat back must be rigid enough not to flex down excessively when leaned upon. 45 degree angle max
 - C. Drawbar will be horizontal and stationary in all directions. With hitching device not more than 3/4" in thickness and must have a 1 1/2" width/depth for hook. Pulling point may not be more than 3/4" from back edge of hitching device parallel to and not more than 13" above the ground.
Pulling hitch should be made of steel.
 - D. No portion of any tractor may exceed 6 feet in width. No portion of any tractor (except stock altered) may exceed 8 feet forward of the center of the rear wheel, including weights. Stock Altered is 7 feet forward of the center of the rear wheel.
No tolerance on the overall length.
 - E. No weights to extend beyond rear tires.
 - F. All Tractors must have a hood and Grill

B. Specification for Pure Methanol:

<u>Parameter</u>	<u>Grade A</u>	<u>Grade AA</u>
Methanol Content, wt%, min	99.85%	99.85%
Acetone & Aldehydes, ppm, max	30	30
Acetone, ppm, max	20	20
Ethanol, ppm, max.	10	10
Acid(acetic acid), ppm, max	30	30
Water Content, ppm, max	1500	1000
Specific Gravity @ 20 °C	.7928	.7928
Permanganate Time, min.	30	30
Residual on evaporation, g/100ml	.001	.001

- Odor Characteristic
- Platinum-Cobalt scale, mix: 5:5
- Appearance: Colorless-clear
- Carbonizable impurities

- C. Diesel fueled tractors must run diesel only with a dielectric value of no greater than 4.9 or less than 2.2. The dielectric meter shall use Cyclohexane to establish the zero reference point in determining all diesel fuel dielectric constant values. The use of additives containing oxygen, such as nitro methane, propylene oxide, dioaxane, MTBE, alcohol (methanol), or nitrous oxide is prohibited. These additives, and others of the oxygen-bearing family, will significantly change the dielectric values of diesel fuel.
- D. Gas: must be either VP C-12 or VP C-15 unless otherwise noted. No oxygenated fuels allowed.
- E. Fuel Injection is allowed in Super Stock, Nitro 30 Cubes in Lite Pro. Unlimited and Open Super Stock Classes (non-diesel-fueled engines).
- F. No pressurized fuel tanks
- G. No Nitrous Oxide.
- H. Propylene Oxide is prohibited in all classes.

6. Tear Down and Illegal Vehicles

- A. All top money winners will have their engines checked for legality. Teching will include, but not limited to the engine. Remember, if you don't want the NQS tech official to see parts of your engine that is not involved with the tear down process, cover it up. Any person who refuses to be inspected for eligibility by routine check of money winners shall not be allowed to enter and/or pull in the class in question until legality is checked. See Rule 1.
- B. Protest of a competitor's vehicle must be filed in writing to a track official within 15 minutes of conclusion of class. A \$250.00 cash protest fee must be submitted at that time. Tear down of protested vehicle must be done by a qualified tech official with the proper testing equipment. Only the tech person and the owner of the protested vehicle are allowed to be present at the time of the tear down. If the vehicle is found to be illegal the protest fee will be returned. If the vehicle is legal the protested vehicle owner will receive the fee. Illegal vehicles will be disqualified for all pertaining classes entered for that event.
- C. NQS Tech Officials can overrule any misprints in these rules.

Pro Stock:

1. 1050 lbs max
2. 50.5 in.³
3. Single cylinder Pro-Stock is defined as having a one cylinder, air cooled four cycle flat head, two valves same side, commercially produced manufactured cast block engine. Sleeves and welding permitted. Commercially produced manufactured cast block means made by Kohler, Wisconsin, Briggs, Tecumseh and etc. If copy is being made, copied block must meet basic manufactures specs for that engine being copied. Crank and cam location, deck height, two valves same side, valve angle (maximum valve angle of 6 degrees), intake and exhaust port location and factory head gasket bolt pattern.
4. No reverse port engines.
5. A stock appearing Kohler type carburetor must be used if other than stock for the model engine being used. Standoff pipe or ram tubes are permitted. Choke may be removed. Single carburetor only. Air restricting venturi must be in stock position and carburetor not to be larger diameter than 1.200". Air controlled by butterfly in stock position in carburetor, no slides, no injection, naturally aspirated only. No air entering after 1.200" restriction. Venturi must be round in shape.

6. Methanol only. See Rule 5.B
7. Wheelbase 56 inches maximum.
8. Overall length 96 inches maximum.
9. Top placing tractors will be checked for, but not limited to: Fuel, Deck Height, Carburetor, Cubic Inch and Factory Head Gasket Bolt Pattern. in.³: 50.500 in.³ zero tolerance. Formula for in.³ is Measured bore x measured bore x measured stroke x .785 = in.³. All bores measured 90 degrees from thrust side. Stock Head bolt pattern, stock head gasket must fit over studs or bolts.
10. 48 cubic inch stock appearing block K-series Kohler engines will be allowed to run with the same weight/hitch as the Pro Stock. 48c.i. engines will have the same rules as the 50.5 Pro stocks, with the following exceptions. Stock Appearing Block K-Series Kohler Engine, open carburetion (no fuel injection), external welding allowed on the blocks (all-thread okay), if engine is sleeved, sleeve cannot be externally visible. Must have head/block restraint.

Super Stock:

1. 1050 lbs max
2. 50.5 in.³
3. Single cylinder Super Stock is defined as any tractor having one cylinder, air cooled four cycle, flat head, two valves same side of engine.
4. No reverse port engines.
5. Any type of Naturally Aspirated induction is permitted.
6. Methanol only. See Rule 5.B
7. Wheelbase 56 inches maximum.
8. Overall length 96 inches maximum.
9. Top placing tractors will be checked for, but not limited to: Fuel and Cubic Inch Limit. 50.500 in.³. Zero tolerance. Formula for cubic inch is Measured bore x measured bore x measured stroke x .785 = Cubic Inch All bores measured 90 degrees from thrust side.

Super Stock Carbureted only:

1. Same rules as Super Stock but is limited to carbureted engines only
2. One single throat carburetor is recommended and suggested.

30 Cubic Inch:

1. 950 lbs. max
2. 30 in.³
3. Single cylinder 30 Cube is defined as any tractor having one cylinder, air cooled four cycle, flat head, two valves same side of engine.
4. No reverse port engines.
5. Any type of Naturally Aspirated induction is permitted.
6. Methanol only. See Rule 5.B
7. Wheelbase 56 inches maximum.
8. Top placing tractors will be checked for, but not limited to: Fuel and Cubic Inch Limit. 30.000 in.³. Zero tolerance. Formula for cubic inch is Measured bore x measured bore x measured stroke x .785 = Cubic Inch All bores measured 90 degrees from thrust side.

Pro V-Twin:

1. Maximum engine size is 45.5 cubic inches
2. Engines with aftermarket/and or welded stock heads will run at 1000# with a 12.25" hitch. Stock head engines with no welding will run @ 1050# with a 13" hitch. On stock head engines only minimal epoxy will be allowed, no excessive use on the external portion of the intake port. Maximum allowable amount would be an area of not more the 1 square inch per head. Intake manifold must bolt directly to the stock intake flange on head with a maximum of .030" thick intake gasket. Adapters or flange extensions are Illegal. Switching of heads from one model and type to another is illegal. 39 Cube Tractors weight 1075 Hitch is 13".
3. Engine shielding rules: 1/8" steel or 3/16 aluminum on external side of cylinder extending from head gasket to frame.
4. Shield must be attached to frame at the bottom and to the flywheel shield at the top to make rigid.
5. Wheelbase 56 inches maximum.
6. Overall length 96 inches maximum.
7. Engines: Must be a commercially available lawn and/or garden tractor factory air-cooled engine. Only configuration accepted is V-twin type.
8. Carburetor: Limited to one (1) carburetor with one (1) venturi with one (1) throttle butterfly. Maximum venturi size will be 1.200". No air entering after the 1.200" restriction.
9. Steel flywheel mandatory, along with the general flywheel shielding rules of 1/8" steel or 3/16" aluminum 360 degrees.
10. Fuel: Methanol or Gas. See Rule 5

Pro Outlaw:

1. NQS Super Stock and NQS Pro V-Twin. Super Stock and stock head

twins with no welding runs together. See Hitch legend for weight and hitch height

- These rules can be changed in order to promote fairness of the type's tractors at any time during the season.

PST (Pro/Super/Twin):

- NQS Pro Stock and NQS Super Stock with open carburetor (no fuel injection), 39 cubic inch and all run together. See hitch legend for weight and hitch height. Pro V-twin stock head no welding tractors run 1000# and 12.25" hitch and 39 cubic inch V-twin can run at 1000# with 12.5" hitch.
- 48 cubic inch stock appearing block K-series Kohler engines will be allowed to run with the same weight/hitch as the Pro Stock. 48c.i. engines will have the same rules as the 50.5 Pro stocks, with the following exceptions. Stock Appearing Block K-Series Kohler Engine, open carburetion (no fuel injection), external welding allowed on the blocks (all-thread okay), if engine is sleeved, sleeve cannot be externally visible. Must have head/block restraint.
- These rules can be changed in order to promote fairness of the type's tractors at any time during the season.

Stock Altered:

- Single cylinder four cycle flathead engines only.
- Engines must be Kohler, Wisconsin, Tecumseh or Briggs.
- Engine blocks must have an OEM stock appearance. The current approved blocks are the K-Series Kohler block and the MWSC Stock Altered block. Any new blocks must be submitted to the NQS for approval prior to entry.
- Engines must be factory productions or their OEM replacement with factory deck height.
- Stock Head bolt pattern = stock head gasket must fit over studs or bolts.
- Stock Head bolt location and head bolt size.
- Maximum crankshaft stroke 3.25"
- Maximum engine bore 3.780"
- 36.5000 cubic inch limit
- Maximum engine valve size 1.380"
- Maximum engine valve lift .330"
- Maximum carburetor venturi size 1.00", no air entering after 1.00" restriction, venturi must be round in shape.
- Carburetor must be mounted to the engine with no more than 1" spacer
- No reverse port engines allowed carburetor must go to the original intake port.
- Carburetor must be a stock appearing Kohler-type
- Billet heads permitted
- Porting and polishing allowed
- No external welding or external modifications allowed
- All thread through finned area is acceptable
- Welding permitted in crankcase area of the block for repair.
- Methanol only. See Rule 5.B
- Must run a factory appearing hood and grill.
- Tractors must have garden tractor rear-ends.
- Tractors must use stock appearing garden tractor frames.
- Frames should maintain factory length, but not mandatory.
- Weight Class 1050 lbs., other weight classes may be pulled.
- Wheelbase: 52 inches maximum
- Top placing tractors will be checked for, but not limited to: Fuel, Bore, Stroke, Carb Size, Valve Lift & Valve Size and deck height. Cubic Inch: 36.500 Cu. In. No Tolerance. Formula for CU. IN. is Measured bore x measured bore x measured stroke x .785 = Cu. In. All bores measured 90 degrees from thrust side.
- If running a factory Kohler produced block the maximum size bore will be 3.830" with a maximum cubic inch of 37.500.

30. Parameter	Measurement	Tolerance
Stroke	3.250"	0.010", must not exceed in ³ limit
Bore	3.780"	0.010", must not exceed in ³ limit
Carb	1.000"	0.001"
Valve Lift	0.330"	0.005"
Valve Size	1.380"	0.001"

- Head Bolt Pattern: Stock Gasket must fit over head studs or bolts.

Outlaw Class:

- NQS Stock Altered run at 1100# 13" hitch
- NQS Lite Pro run either at 900# and 12.5" hitch or 925# and a 12" hitch.
- NQS 30 cubic inch run up to 1100# and 13" hitch.
- These rules can be changed in order to promote fairness of the type's tractors at any time during the season.

Lite Pro Stock:

- 950 & 1000 lbs. weight classes
- 13 inch hitch height.
- 37.5 in.³
- Single cylinder four cycle flathead engines only
- No reverse port engines.
- Engines must be Kohler, Wisconsin, Tecumseh or Briggs.
- Methanol only. See Rule 5.B
- Engine blocks must have an OEM stock appearance. The current approved blocks are the K-Series Kohler block and the MWSC Stock Altered block. Any new blocks must be submitted to the NQS for approval prior to entry.
- Engines must be factory productions or their OEM replacement with factory deck height.
- Stock Head bolt pattern =>stock head gasket must fit over studs or bolts.
- Maximum carburetor venturi size 1.20", no air entering after 1.20" restriction, venturi must be round in shape.
- Carburetor must be a stock appearing Kohler-type
- Billet heads permitted
- Porting and polishing allowed
- Port welding allowed, but no bore welding
- Maximum wheel base is 56".
- Nitro 30 cubic Inch engines are part of this class. Engines have a maximum venturi size 1.200" for carburetor or 1.200" throat for fuel injected engines. Methanol fueled engines can have any type of Naturally Aspirated induction. For Methanol See Rule 5.B. Only Nitro methane will be accepted for Nitro, no other types allowed. They will pull at the same weight.
- Top placing tractors will be checked for, but not limited to: Fuel and Cubic Inch Limit. 37.5 in³. Zero tolerance. Formula for cubic inch is Measured bore x measured bore x measured stroke x .785 = Cubic Inch All bores measured 90 degrees from thrust side.
- NQS 30 Cubic Inch tractor can run in this class at 1000# with a 13" hitch.
- Top placing tractors will be checked for, but not limited to: Fuel, Bore, Stroke, Carb Size, head bolt pattern and deck height. Formula for CU. IN. is Measured bore x measured bore x measured stroke x .785 = Cu. In. All bores measured 90 degrees from thrust side

39 Cubic Inch V-Twin:

- 1050 lbs. max
- 39 in.³ max
- Engine shielding rules: 1/8" steel or 3/16" aluminum on external side of cylinder extending from head gasket to frame. Shield must be attached to frame at the bottom and to the flywheel shield at the top to make rigid.
- Engines: Must be a commercially available lawn and/or garden tractor engine. Only configuration accepted is V-Twin type.
- Cylinder Head: Must be stock head with no external welding. Only minimal epoxy will be allowed, no excessive use on the external portion of the intake port. Maximum allowable amount would be an area of not more the 1 square inch per head. Intake manifold must bolt directly to the stock intake flange on head with a maximum of .030" intake gasket. Adaptors or flange extensions are illegal. Switching of heads from one model and type to another is illegal.
- Carburetor: Limited to one (1) carburetor with one (1) venturi with one (1) throttle butterfly. Maximum venturi size will be 1.200". No air entering after the 1.200" restriction.
- Steel flywheel mandatory, along with the general flywheel shielding rules of 1/8" steel or 3/16" aluminum 360 degrees.
- Fuel: Methanol or Gas. See Rule 5
- Wheelbase 56 inches maximum.
- Overall length 96 inches maximum.
- Top placing tractors will be checked for, but not limited to: Fuel and Cubic Inch Limit. 39 in³. Zero tolerance. Formula for cubic inch is Measured bore x measured bore x measured stroke x .785 = Cubic Inch All bores measured 90 degrees from thrust side.

Open Super Stock Class:

- All General Rules and Super Stock Rules apply, except the following: Shielding: Engine shielding rules: 1/8" steel or 3/16" aluminum on external side of cylinder extending from head gasket to frame. Shield must be attached to frame at the bottom and to the flywheel shield at the top to make rigid. V-Twins: 1/8" steel or 3/16" aluminum on external side of cylinder extending from head gasket to frame. Shield must be attached to frame at the bottom and to the flywheel shield at the top to make rigid.
- 1050 lbs. max.
- Motorcycle, aircraft, marine or automotive type engines are not permitted. Block may be copied, but must meet basic

Unlimited Class:

1. This class is for specific built tractors only.
2. 1150# maximum weight and 13" hitch.
3. Limited to a maximum of 3 cylinders, block and head can be billet, but must be based upon an OEM produced lawn and garden or compact tractor engine.
4. Fuel is limited to methanol or diesel. No pressurized fuel tanks. Electric vehicles are allowed.
5. Turbocharging or supercharging allowed.
6. Wheelbase 56 inches maximum.
7. 26 x 12 x 12 tire size maximum.

Limited Twin Rules:

1. The intent of this class is to have an economical build that should make similar horsepower and torque as an NQS SS engine for hopefully 1/5 the cost. It is open to v-twin and flat head opposed twin engines.
2. All General rules apply.
3. V-Twin and opposed twin engines. Engines with a factory horsepower rating of 27hp or less.
4. Maximum of 52.5 Cubic Inch or less.
5. Open RPM
6. Any type of ignition is allowed.
7. Fuel is to be pump gas with no additives. No oxygen bearing
8. Steel flywheels are mandatory.
9. No portion of any tractor may exceed 8 feet forward of the center of the rear wheel, including weights. 56" Wheelbase maximum.
10. Engines must run stock heads (no recast) with no external modifications. V-twin engines must have factory rockers and pushrods. Copper head gaskets are allowed. Factory shrouding is optional.
11. Carb must be stock for make and model of engine, adjustable main jets are allowed. Air cleaner adaptors/velocity stacks are allowed. Two (2) barrel carbs and manifolds are NOT allowed and cannot be used.
12. Maximum tire size is 26x12x12. Tire cutting allowed.
13. Weight class is 1050 lbs. Some pulls may allow more than one weight class.
14. Must use stock appearing garden tractor frame, but may be modified for engine installation. Aftermarket sheet metal is allowed.

5000 Governor Class:**V-Twin 5000 Governor:**

1. 1050lbs. max.
2. 30 HP Block Max - Must be garden tractor block. No recast, billet or plated heads. 60 cubic inch maximum size.
3. No welding on outside of heads. Putty permitted.
4. Stock manifolds only - 2 barrel, plastic, horizontal or vertical. Must have factory part number. No homemade plenums. Carb/manifold spacers are allowed. Carb - 1.200 Venturi max. Single or two barrel carbs permitted.
5. Factory electronic fuel injection for make and model is allowed.
6. Any ignition is allowed.
7. Electric fuel pumps allowed.
8. Fuel: Gas or methanol.
9. Wheelbase 56 inches maximum.
10. Any 26x12x12 tire allowed.
11. All General Safety Rules apply.

1 Cylinder 5000 Governor:

1. 1050lbs. max.
2. Factory or OEM Block only 16 HP Block Max. No aftermarket blocks Allowed. No welding on blocks allowed.
3. Recast or billet heads allowed.
4. Carb - 1.200 Venturi max.
5. Any ignition is allowed.
6. Electric fuel pumps allowed.
7. Fuel: Gas or methanol.
8. Wheelbase 56 inches maximum.
9. Any 26x12x12 tire allowed.
10. All General Safety Rules apply.

V-Twin Hot Stock:

1. All General rules apply, except for the following: No fire suits are required, but helmets are.
2. V-Twin and Opposed Twin Engines Only. Engines with a factory horsepower rating of 25hp or less, they are governor to a maximum RPM of 4,500 RPM.
3. Fuel is to be VP C-12 (green in color) with no additives.
4. Steel flywheels are mandatory.
5. No portion of any tractor may exceed 7 feet forward of the center of

the rear wheel, including weights. 52" Wheelbase maximum.

6. Limited to stock factory stroke for that model engine with a maximum over bore of 1mm or less. Opposed flathead engines are limited to .030" overbore. Must run stock heads (no recast) with no external modifications. Engine must be stock appearing on the outside of the engine. Factory shrouding is optional.
7. Wheelbase 52 inches maximum.
8. Maximum tire size is 26x12x12. Tire cutting allowed.
9. Weight class is 1050 lbs.
10. Carb must be stock appearing for make and model being entered. Velocity stacks allowed. Maximum carburetor venturi size 1.00", no air entering after 1.00" restriction, venturi must be round in shape. 2 barrel carbs allowed if factory equipped and with each venturi is smaller than 22mm. No external modifications to stock intake manifold. No standoff (ram tubes) permitted.
11. Must use stock appearing garden tractor frame, but may be modified for engine installation. Aftermarket sheet metal is allowed.
12. Must use stock appearing garden tractor frame, but may be modified for engine installation. Aftermarket sheet metal is allowed.

Factory Stock:**V-Twin Factory Stock:**

1. All General rules apply, except for the following: No fire suits are required, but helmets are.
2. V-Twin and Opposed Twin Engines Only. Engines with a factory horsepower rating of 25hp or less, they are governor to a maximum RPM of 4,250 RPM.
3. Fuel is to be pump gas with no additives. No oxygen bearing fuels.
4. Steel flywheels or Stock flywheels, if rules are modified to allow more than 4,250 RPM, then steel flywheels are mandatory.
5. No portion of any tractor may exceed 7 feet forward of the center of the rear wheel, including weights. 52" Wheelbase maximum.
6. Limited to stock factory stroke for that model engine with a maximum over bore of 1mm or less. Opposed flathead engines are limited to .030" overbore. Must run stock heads (no recast) with no external modifications. Engine must run all stock factory internal parts for make and model being entered. Must have factory rockers, lifters, valves, valve springs and pushrods. Pistons must have factory unaltered dish. Copper head gaskets and adjustable main jets are permitted. Factory shrouding is optional.
7. Carb must be stock unaltered, adjustable main jets are allowed. Air cleaner adaptors/velocity stacks are allowed.
8. Wheelbase 52 inches maximum.
9. Maximum tire size is 26x12x12. Tire cutting allowed.
10. Weight class is 1050 lbs. Some pulls may allow more than one weight class.
11. Must use stock appearing garden tractor frame, but may be modified for engine installation. Aftermarket sheet metal is allowed.

1 cylinder Factory Stock:

1. All General rules apply, except for the following: Fire suits are not required, but helmets are required.
2. Engines are governor to a maximum RPM of 4,250 RPM. Classes will be 14 hp and less and 15hp and above. RPM will be checked after the tractor makes its run, no tolerance. Stock Blocks only, no aftermarket.
3. Fuel is to be pump gas with no additives. No oxygen bearing fuels.
4. Steel flywheels or Stock flywheels, if rules are modified to allow more than 4,250 RPM, then steel flywheels are mandatory.
5. No portion of any tractor may exceed 7 feet forward of the center of the rear wheel, including weights. 52" wheelbase maximum.

Limited Pro Stock Diesel Class:

1. Engine must be commercially produced with at least 1000 units built. Engines may be no more than 3 cylinders. May be liquid or air cooled. Engine block must have factory casting model and serial numbers visible and not ground off. Ag or industrial engines only; no automotive or motorcycle engines. No cut down cylinder engines allowed.
2. Engine will be no more than 70 cubic inches. This is based on the factory casting numbers. No sleeving down or de-stroking larger engines.
3. Water injection will be allowed. Must be plain water only. Combustible agents (alcohol, oxygenators) are NOT allowed in water injection. Soluble oil Lube additives are permitted.
4. Engine modifications are permitted = Rods, Pistons, Cam, Fuel system.
5. Engine must have OEM intake manifolds and exhaust manifolds, polishing is permitted. No tube headers or intakes.
6. Head work is permitted on stock OEM heads. No Billet heads. No overhead cams. Must be indirect injection. No converting from indirect to direct. Injectors must remain in stock location.

7. Injector and injector pump modifications allowed. No Billet injector pumps.
8. Must be "Cam Box" or "PFR" injection pump. No electronic or common rail injection systems.
9. Turbo charging is permitted, but limited to a single turbo only. Turbo will be fitted with a shut down guillotine on the compressor inlet side of the turbo. Exhaust "L" of turbo must have minimum of 5/16" cross in elbow with exhaust to discharge vertically.
10. Electric fuel supply pump is permitted with positive power wire to have shut off disconnect at rear of tractor.
11. No propane, nitrous injection or any type of secondary fuel system of any kind will be permitted.
12. All tractors must be compression ignition and use Diesel fuel only. No spark plugs or alcohol as a fuel. Diesel fuel must be NTPA or NQS legal.
13. Stock frames, stock appearing frame rails, and tube frames are permitted. Tube frames must be covered with sheet metal. 56" wheelbase maximum.
14. This class is for stock appearing tractors with full hood, grill and side shields. Must be recognizable as an actual modern production garden tractor or small farm tractor. Hood and grille can be from a different make than frame/rear end. Has to look like a tractor.
15. Must use garden tractor drive line components, modifications are allowed. Internal gears, front reduction housing and planetaries are allowed. No cut down automotive rear ends.
16. Full metal side shields to cover engine area minimum 16 gauge steel or 14 gauge aluminum.
17. Must run 5/16" cable around oil pan over top of valve cover in a complete circle connected with (2) cable clamps.
18. Must run billet steel flywheel.
19. Clutch assembly and flywheel must be surrounded 360 degrees with 1/8" steel or 3/16" aluminum. This is also to include cast iron front balancer pulleys. SFI approved front dampers need not be shielded.
20. 1100 & 1150 lbs. weight classes
21. Kill switch device mounted on rear of tractor must disconnect power to electric fuel pump along with activating turbo guillotine.
22. Helmet face shield or goggles required. Gloves are recommended.
23. No belt driven cooling fans. Electric fans only.
24. Intercoolers and ice boxes are not permitted.
25. All NQS rules not in conflict with these apply.

Track & Pull Notes

Midwest Machine 306 Welton Ave, Welton, IA (563) 659-5555

Midwest Machine, our manufacturing facility is over 10,000 square feet and is directly across the street from Midwest Super Cub. some of the machines we have to manufacture our parts are 4 CNC vertical machining centers of which three have a 4th axis. One CNC lathe and 2 CNC lathes with live tooling and programmable C axis and a 5 axis Flow abrasive water jet. To Make the gears we have 4 Fellows Gear Shapers, 2 Barber-Coleman Gear Hobbers and to finish the gears (and other parts) to smooth polished like finish we have 2 vibratory finishing machines. We also have a Landis cylindrical grinder, 2 Sunnen rod hones, a 6x12 surface grinder a hydraulic press and a Harrison M500 manual lathe. The 2 Storm Vulcan camshaft grinders and 2 Van Norman 465 Crankshaft grinders have been moved to Midwest Super Cub side of the street. The Midwest Machine Shop makes parts for Midwest Super Cub, but also for other outside vendors. Besides making parts for tractors and other vendors,, we also can cut decorative tile, promotional items, glass trophies, indoor or outdoor signs for businesses. We can cut paper, plastic, wood,copper, to glass or granite, from thin to 6" thick steel or other metals with the Flow waterjet and machine your parts from a print. Let us know if you have a project that Midwest Machine can help you complete.





Midwest Horsepower has had an exciting and productive 2019.

Our second year of business has brought about a new test boat, many new parts, and a lot more power! Our test boat for the shop is a 2019 Excel 1854. We purchased it from our friends at M&M Marine in Savanna, Illinois. The boat came with a new yacht club trailer and a used Go-Devil surface drive with hardly any hours on it. We've since updated our drive to a new Mud Walker Surface Drive from our friend Mike, the owner of Black Creek Mud Motors and Mud Walker located in Orange Park, Florida. Mike does a lot of engine testing for us in Jacksonville, Florida area; he's got a lighter, shorter hull than us so usually gets speeds a few mph higher than our Excel.



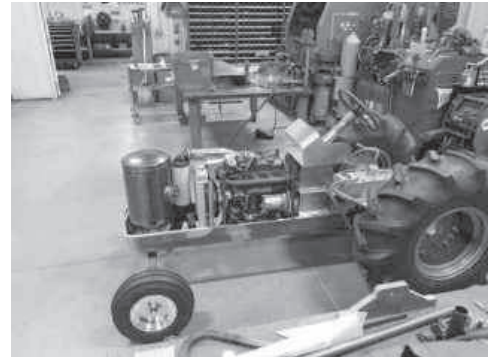
Mike is also one of our muffler dealers. Our stainless-steel muffler has been quite a hit with some mud boat owners. Adding just our muffler to a stock big block Vanguard (25-40 HP models) has been proven to increase RPMs by 300-400 and MPH by 1-2. Even more than the performance, our customers seem to enjoy the sound of the muffler - mainly the fact that "it isn't too loud". We only did actual decibel (db) testing one day in the Spring against the stock muffler; the stock muffler reached a db of 112, whereas our muffler only reached a db of 106 (a full 6 decibels quieter in this test). Although on the quieter side, our muffler still has a nice throaty-American-V8-sounding rumble to it. Our muffler retails for \$595 with free shipping to your door. (If you're a business owner interested in carrying our mufflers, please reach out to us about becoming an independent dealer.)



Our latest part is another part nobody else is making for these big block Vanguards - Custom Billet Heads. These heads took our biggest build from mid-90's HP to 119 HP. It's important to note that our heads WILL NOT fit a stock Vanguard block, as we bore out our blocks and do some machining to them. Because of this, we'll give you a generous core credit for your current engine to use towards one of our complete builds. Our Custom Billet Heads sell as a complete pair including: valve covers, roller rockers, exhaust and intake valves, push rods, and a breather. Be sure to keep up to date with Midwest Horsepower through our Facebook Page and Instagram (@I__eve!9), and don't forget to tell your mud boat friends about us!

CONTACT US TODAY sales@midwesthorsepower.com

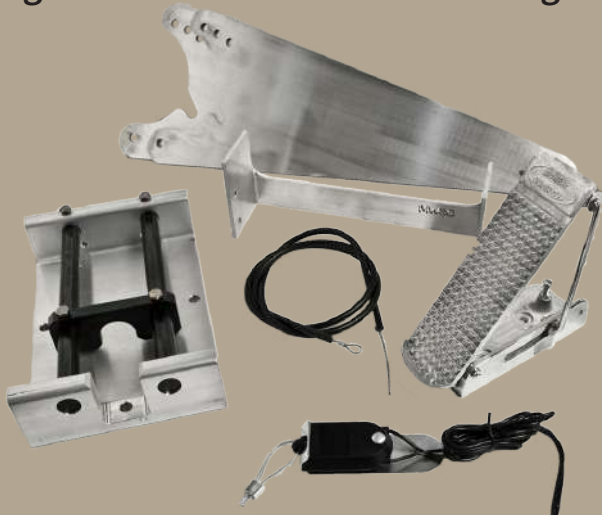
Phone: 888-296-0935



Midwest Super Cub, L.L.C
333 Welton Ave. P.O. Box 10
Welton, Iowa 52774

Mail To:

Beginner Gas Pedal & Hitch Package



Includes: hitch, gas pedal with 48" cable, kill switch, wheelie bars and cross brace. See page 8 for more information.

ONLY \$275.00!

Beginner Clutch Package

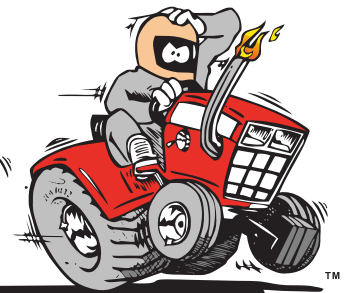


Includes: pressure plates, a red spring, a Kevlar disc, a longer heavy duty release arm, a throw out bearing, a teaser spring, and a split collar. See page 14 for more information.

ONLY \$255.00!



MWSC.CO



Call us at: 1(563)659-5276 Monday - Friday from 9 am - 5 pm CST



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