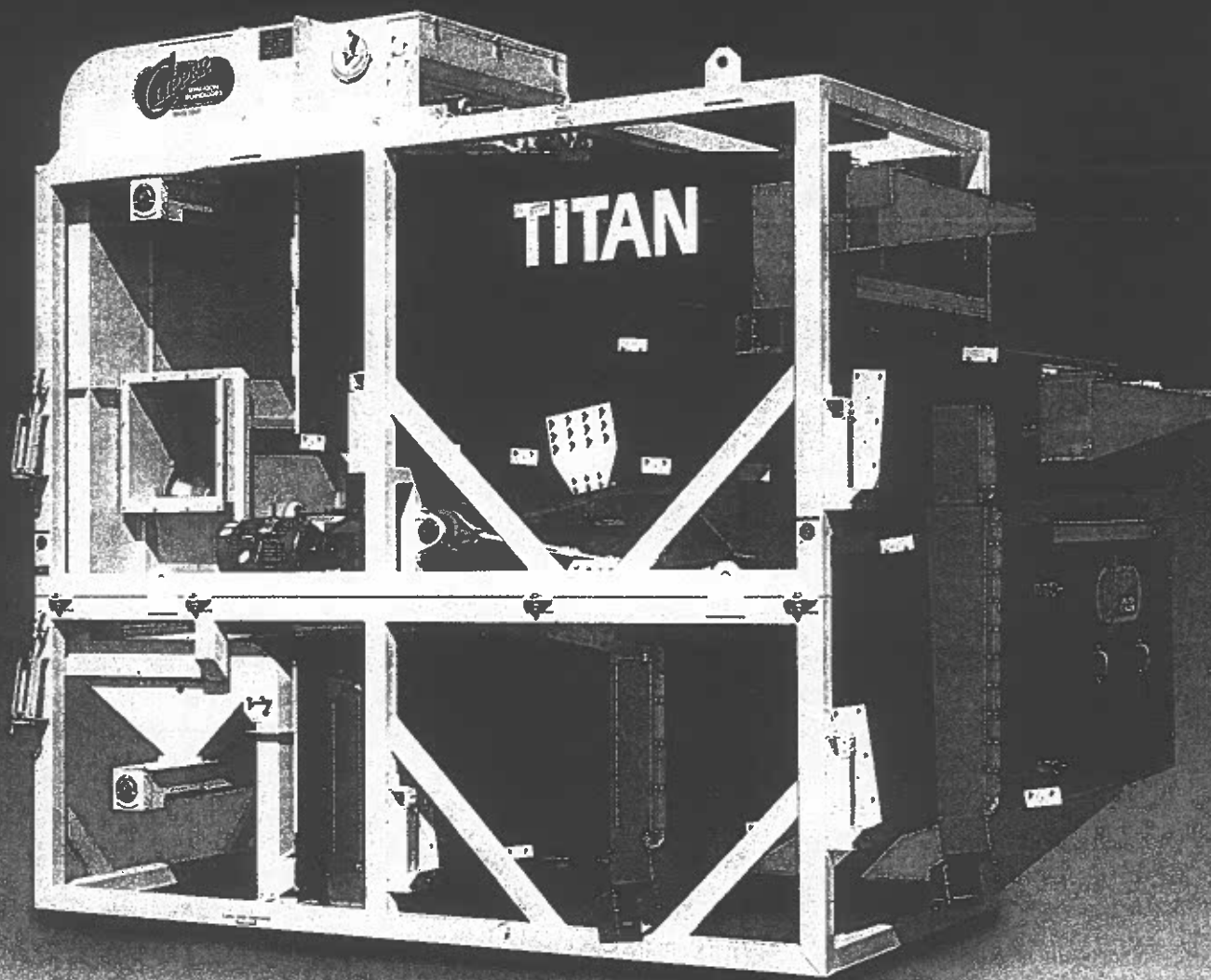


CLIPPER
SEPARATION
TECHNOLOGIES



The Clipper Titan Cleaner

The new Titan Series line of cleaners for high capacity, multiple grade, single pass precision cleaning

A. T. FERRELL COMPANY INC.

Order# A7020-A

Manufacturers of Ferrell-Ross Roller Mills, Clipper Grain & Seed Conditioning Equipment, Mix-Mill/Farmatic on Farm Feed Systems

TO:
A. T. Ferrell Company Inc.
Post Office Box 11931
Fort Wayne, IN 46861-1931
U.S.A

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ACCOUNT NO	SLS	PURCHASE OR	SHIP VIA	DATE SHIP	TERMS	INV. DATE	PAGE
0100S	137	246		09/03/02	Net 30	09/03/02	1

QUANTITY ORDERED	QUANTITY SHIPPED	ITEM NO	DESCRIPTION	UNIT PRICE	EXT. PRICE
1	1	F62240001	CLNR, TITAN 224 LH		
1	1	F62240031	MTR DRV PKG TITAN 3/18 60	0.00	0.00
1	1	F66682331	BK FAN 15HP 3/18 60 575V	0.00	0.00
1	1	F62249008	FDR, #8 HI-CAP MECH VIB AS	0.00	0.00
1	1	F61009039	MTR PKG AC 3/18 60 575V M	0.00	0.00
1	1	F66689050	CNTL, FEED 668 SLIDE GATE	0.00	0.00
1	1	F66680060	PKG, 668 GREASE LINE INSTA	0.00	0.00
3	3	F03805600	RBBR HOLD DOWN CAP .75X60	0.00	0.00
12	12	F62241483	CVR, INSPECT DOOR TITAN	0.00	0.00
12	0	F62241480	DOOR ASSY, 4.94X14" MAGNET	0.00	0.00
2	2	F62241430	SPOUT ASSY, SIDE W/DOOR, B	0.00	0.00
2	2	F62241431	SPOUT, SIDE, BTM SHOE TITA	0.00	0.00
			CHEST HEIGHT HOPPER AND		
			AIR CONTROLS ADDED		
1	0	F51001820	18" SUPER VIB CONVR 20'-0		
			MOD-+18" TO SPOUT/575 VOLT		
30	30	F10505230	54X26 W/LIP MID SCTN PERF	0.00	0.00
6	6	F91532400	SCRN 24/64 DIA HOLE #8	0.00	0.00
8	8	F91570612	SCRN 6.5/64X3/4 SLOT #8	0.00	0.00
16	16	F91571000	SCRN 10/64X3/4 SLOT #8	0.00	0.00
42	0	F10505230	54X26 W/LIP MID SCTN PERF	.00	0.00
8	0	F91560114	SCRN 1/14X1/2 SLOT #8	0.00	0.00
16	0	F91530114	SCRN 1/14 DIA HOLE #8	0.00	0.00
12	0	F91521234	SCRN 12 X 3/4 CR SLOT #8	0.00	0.00
4	0	F91532400	SCRN 24/64 DIA HOLE #8	0.00	0.00
2	0	F91532200	SCRN 22/64 DIA HOLE #8	0.00	0.00

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WARRANTY

The A. T. Ferrell Company Inc. Manufacturers Warranty for the following product:

CLIPPER

Air Screen Cleaners, Seed Cleaners, Grain Cleaners, Scalpers, Vibratory Conveyers, Debearders, Laboratory Cleaners, Graders, E-Z Down Ladders, Roll Feeders, Vibratory Feeders, Loss in Weight Feeders, Augers, Bucket Elevators, Mixers and Blenders.

("CLIPPER" IS A REGISTERED TRADEMARK OF THE A. T. FERRELL COMPANY INC.)

The A. T. Ferrell Company Inc. hereby warrants each new product (other than Clipper Screens, a "Clipper Product") to be free from defects in Material and workmanship for a period of three years from the date of shipment. The A. T. Ferrell Company Inc. will replace without charge any Clipper Product or part or component thereof, which is defective in material or workmanship (other than transportation charges, which shall be borne by the purchaser/user), if notified in writing of such defect by the purchaser/user within such period. The A. T. Ferrell Company Inc. liability for defective parts and components not manufactured by The A. T. Ferrell Company Inc. but included in the Clipper Products (such as electric motors, DC controllers and belts) is necessarily limited to the warranty or guarantee provided by the manufacturer or supplier of such parts or components. The A. T. Ferrell Company Inc. reserves the right to require the purchaser/user to return the defective Clipper Product or part or component thereof to The A. T. Ferrell Company Inc. factory for inspection, as well as the right to determine the validity of any warranty claim in its sole discretion.

This warranty shall not apply and shall be void under the following conditions:

1. The Clipper Product has not been purchased from The A. T. Ferrell Company Inc. or an authorized representative of The A. T. Ferrell Company Inc.
2. The Clipper Product has been removed from its original installation site.
3. Any part of the Clipper Product has been altered, modified, or changed, except by The A. T. Ferrell Company Inc. or with The A. T. Ferrell Company Inc. written authorization.
4. Attachments or devices unsuitable to the Clipper Product have been used on or in conjunction with it.
5. The Clipper Product has not been installed, used, operated, handled, or serviced in accordance with the applicable instruction manual.
6. The Clipper Product is a replacement part or component, which is installed in a previously sold (used) piece of equipment.

The A. T. Ferrell Company Inc. reserves the right to make changes in design or improvements in its products without obligation whatsoever to prior Purchaser-User of such products.

The A. T. Ferrell Company Inc. will pass on to a Purchaser-User only such warranty as it shall receive on products or components not of its manufactured from the manufacturer or supplier thereof.

This warranty is expressly in lieu of any other express or implied warranties, including any implied warranty of merchantability of fitness and of any other obligation on the part of The A. T. Ferrell Company Inc. and may not be altered, modified, or changed in any way except in writing by an officer of The A. T. Ferrell Company Inc.

The A. T. Ferrell Company Inc. shall not be liable for any loss or damage directly or indirectly arising from the use of its products or otherwise, or for any special or consequential damages of any nature.

MACHINE SPECIFICATIONS

CLIPPER TITAN 224 GRAIN-SEED CLEANER

No. of Screens in Cleaner.....	8 Screenways
Screen Size.....	54" x 26" (30 Sections Total)
Extreme Height.....	151-1/4"
with Bottom Air.....	168-1/4"
Extreme Length.....	186-1/4"
Extreme Width.....	86"
Length on Floor.....	148-1/4"
Width on Floor.....	71-1/2"
Height Where Seed Enters.....	150"
with Bottom Air.....	167"
CFM Requirements - 1800 RPM.....	6,400
CFM Requirements - 2100 RPM.....	7,400
Shipping Weight (Without Bottom Air).....	11,000
Shipping Weight (With Bottom Air).....	12,600

Approximate Capacities (Bu. Per Hr.)*

A.	Seeds & Grass.....	250-350
B.	Seed Grain.....	450-800
C.	Beans & Wheat.....	800-1200

Horse Power Requirements:

A.	Main Fan.....	15 HP, 3 Phase, 575 Volt(1800 RPM) 60 HZ
B.	Hopper	1/2 HP, 575 Volt, 3 Phase, (230 V, 3 ph input)
C.	Eccentric / Auger	5 HP, 3 Phase, 575 Volt, AC

* All Capacities will vary depending on variety of grains/seeds cleaned, amount of foreign material removal and moisture content.

SECTION I

INTRODUCTION

We cannot possibly answer all questions about the operation of CLIPPER CLEANERS in this manual. We will try to give you basic information on the installation of your cleaner, various adjustments for greater efficiency and a list of screen suggestions for top performance from your cleaner.

There is nothing complex about the operation of a good seed or grain cleaner. The operator has to familiarize himself with the machine and take time to study the shapes and characteristics of the different commodities to be cleaned.

A commodity is cleaned to separate the good, marketable product from all impurities. From a mechanical point of view poor cleaning is in most cases, caused by lack of proper screens, improper use of screens or faulty regulation of the cleaner.

Perforations on scalper screens should be just large enough to let the commodity being cleaned fall through readily and small enough to scalp off foreign material such as sticks, stems, chaff and larger seeds, or grain other than the product being cleaned. For most commodities a round hole scalper screen is recommended.

After the scalper screens have removed the objectionable foreign material larger than the commodity being cleaned, the perforations of the sifting screens go to work. The sifting screens remove foreign material smaller than the product being cleaned. Any immature kernels, sand, dirt, or small weed seeds drop through the bottom screen and the good commodity passes over the bottom screen. For most commodities, an oblong bottom screen is recommended.

Multiple screen cleaners like the TITAN 224 permit normal top and bottom separations, plus additional separations by shape. Screen recommendations for cleaning grain and seed are furnished with this manual.

The purpose of air separations are to remove all possible light material without waste of good grain or seed, and to control dust. Instructions for regulating and controlling the air separations are given in this manual.

LOCATION

Careful consideration must be given to selecting the proper location for the cleaner or the best results in efficiency and convenience cannot be expected. All models should be fastened to a solid, level floor or foundation. **THE ENTIRE BASE OF THE MACHINE SHOULD BE SUPPORTED. 3/4-8 grade 5 bolts are recommended.** If a exiting machine is being replaced, in almost all cases the exiting mounting stand will not be built heavy enough to support the new machine being installed.

The cleaner should be placed with the fan discharge opening facing, and a short distance away from an outside wall. Screens are inserted and withdrawn at the front of the cleaner. Allow clearance for the operator to make screen changes. The largest single piece screen is 54" x 34" on 3-piece screen sets and 54" x 26" on 4-piece sets. Allow room around the cleaner for the operator to make adjustments and service the machine. Do not install spouting in a position that will interfere with the controls or maintenance. Eventually worn parts must be replaced so allow room to pull all shafts, spouts and large machine parts.

The cleaned grain discharges from the under side of the cleaner, so it should be placed on a floor with a pit or basement underneath so that an elevator with its receiving spout three or four feet below the floor can be used to raise the grain. If the elevator cannot be carried below the floor, and there is sufficient head room, the cleaner may be placed on a solid platform high enough above the floor to allow the grain to flow into the elevator or sacking spout. Screenings and air liftings discharge from built-in spouts and augers in the cleaner. Provision must be made to handle this material.

The Cleaner hopper is a feeder mechanism - not a storage bin. Cleaners work best when equipped with a surge bin above the hopper to provide a steady supply of the commodity to the hopper. The grain supply to the hopper may be by spout from bins located on the floor above or by means of an elevator from a sink or dump hopper on the same level or lower than the cleaner. Spouts must have a fall of at least seven feet in ten to provide free flow and should be carried directly at an angle instead of making right angle jogs.

AIR DISCHARGE

Improper air trunking installation from the cleaner and into the dust house or collector causes up to 90% of the difficulties in conjunction with improper air movement. Sharp turns, improper junctions, poor connections and poor collection equipment will all contribute to air deficiency in a cleaner. Improper air clearance also results in a very dirty, dusty plant operation. The Titan back fan develops sufficient velocity so that cyclone-type collectors or dust filters can be used to settle the dust and chaff from the air discharge of the cleaner. The following are a few of the common errors found in plants and how each can be avoided or corrected.

Refrain from installing elbows which have a sharp change of direction. Back pressures are created at such points. In most cases, light chaff will be dropped into the pipe and finally plug the entire run. A rule of thumb used at our plant is that the inside radius of the elbow would be at least two and one half times the recommended diameter of the pipe.

FIELD WIRING INSTRUCTIONS

GENERAL

Cleaner drives and variable controls are available for NEC Class II, Division I, Group G or Class II, Division II, Group G applications. For additional drive installation instructions, see the manual section for field wiring.

NEC CLASS II, DIVISION II, GROUP G INSTALLATION

The motors and drive controls supplied with the cleaner meet the requirements of the National Cod for this type of installation. The customer power and field wiring requirements are shown on wiring drawing . All field wiring and electrical components must adhere to the NEC and/or local electrical code requirements, and are not the responsibility of the manufacturer.

The following instructions apply to CLIPPER Titan cleaner installations where National Electric Code requirements of Class II, Division II, Group G (TEFC motors, NEMA 4 enclosures) apply.

The cleaner with it's respective motors, motor controllers and operator variable control panels have been factory tested and adjusted. No further adjustment of the AC or DC motor controllers should be required at the installation site. The installer should refer to wiring drawing (TEFC) for wiring (shown in dashed lines) and power requirements (disconnects, motor starter/relay. All field wiring and electrical components must adhere to the NEC and/or local electrical code requirements, and are not the responsibility of A. T. Ferrell Company hereafter referred to as the manufacturer.

Low voltage wiring between DC or AC motor controllers, operator stations or RPM pickup leads must not be combined with high voltage power wiring in common conduits. Movement of factory installed electrical components can affect warranty.

CLEANER DRIVES

Main Fan Motor

The main fan drive consists of a 15 HP, 1800 RPM, 575 Volt, AC, 3 Phase, TEFC motor and V-belt drive. Wiring and motor controls are not supplied by A. T. Ferrell Company (See wiring drawing)

Mechanical Vibratory Hopper (Feeder) Drive

The hopper drive consists of a 1/2 hp, 575 Volt, AC motor and AC inverter. Wiring between the vibratory units and operator station is supplied by A. T. Ferrell Company (See wiring drawing). The operator control station is not mounted on the cleaner by the factory. 575 Volt, 3 Phase, AC power supply is required by the installer for the control panel.

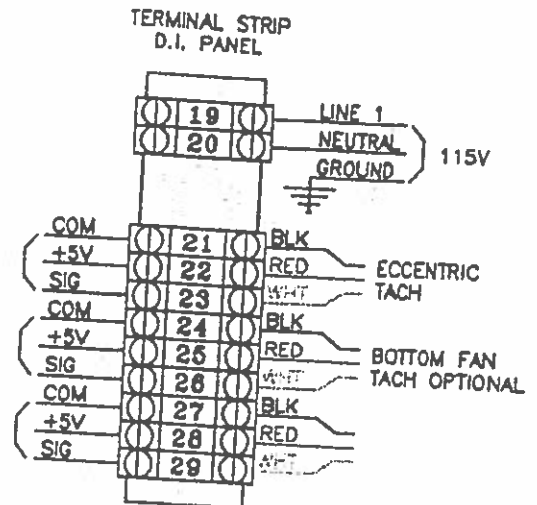
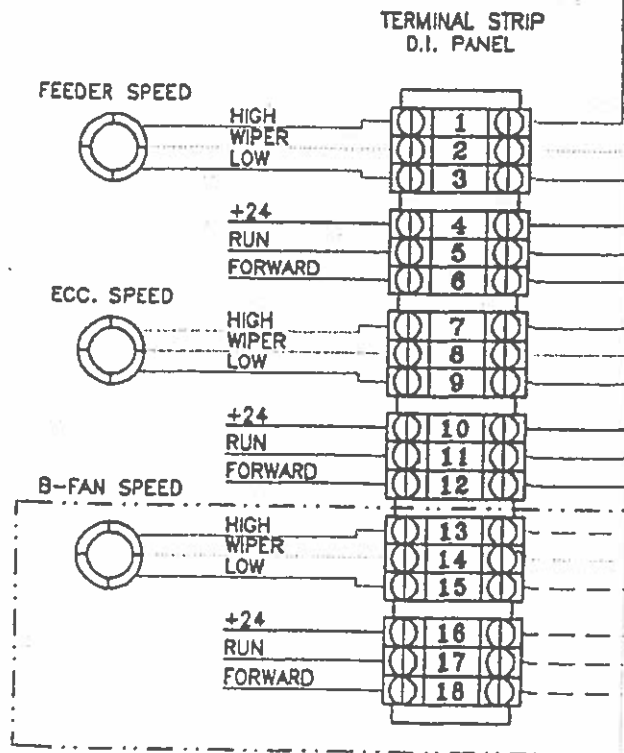
Eccentric And Auger Drive (Fixed Speed)

The eccentric drive consists of a 5 HP, 575 Volt, 3 Phase, 1800 RPM, TEFC motor . Wiring is not supplied by A. T. Ferrell Company (see wiring drawing).

INDICATES FIELD SUPPLIED WIRING

BOTTOM FAN, FEEDER AND ECCENTRIC DRIVE AC INVERTERS ARE NOT DUAL VOLTAGE. INVERTER MUST BE ORDERED AS 230, 460, OR 575 VOLT @ 60HZ, OR AS 200, OR 380 VOLT @ 50HZ.

SEE MOTOR NAME PLATE FOR WIRING INFORMATION.



BLUFFTON AGRI CORP.

SINCE 1888

BLUFFTON, INDIANA, U.S.A

NE

SCALE:
NONE

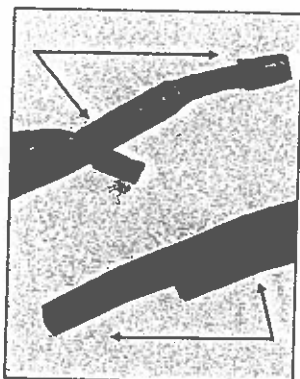
DRAWN BY:
D.J.

APPROVED BY:

A	F000107	10/16/00	BALDOR BTM FAN INVERTER WAS WOODS
-	F960064	10/2/98	RELEASE
SYM	ECN/NPR NO:	DATE:	DESCRIPTION OF CHANGE

PG DIAG. NG AC W/BTM FAN&MECH FD AC	SIZE: B	DRAWING NO.: F91002005-2	SHEET: 1 of 1
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HOW TO MEASURE, ASSEMBLE & INSTALL



I. HOW TO MEASURE

Pull belt tight around sheaves to check hand tight length, overlapping the last two tabs with two holes in matching links as shown. Count the number of links and remove one link for every 24 of O/3L, A/4L and B/5L Sections, and one link for every 20 of C and D Sections. This gives the correct installed belt length and will ensure optimum belt tension when running. Note: Every tenth link is designated with an arrow (←). For multiple belt drives, ensure that each belt has the same number of links.



II. DISASSEMBLY

Hold belt upside down. Bend back as far as possible; hold with one hand. Twist one tab 90° parallel with slot.



Pull end of link over tab.



Rotate belt end with tab 90°.



Pull belt end through two links.

COMMENT MESURER, MONTER ET INSTALLER

I. COMMENT MESURER

Serrez la courroie autour des poulies pour vérifier la longueur correcte, en chevauchant les deux dernières languettes avec deux trous dans les maillons correspondants, comme l'indique la photo. Comptez le numéro de maillons et enlevez un maillon pour tous les 24 de Sections O/3L, A/4L, et B/5L, et un maillon pour tous les 20 des Sections C et D. Cela donne la longueur correcte de la courroie installée et assure la tension optimale de la courroie pendant le fonctionnement. Nota: Tous les dix maillons sont marqués avec une flèche (←). Pour les transmissions à courroies multiples, assurez-vous qu'il y a le même numéro de maillons sur chaque courroie.

II. DEMONTAGE

Tenez la courroie à l'envers. Pliez en arrière autant que possible; tenez-la avec une main. Tournez une languette 90°, parallèle à la rainure.

COMO MEDIR, MONTAR Y INSTALAR

I. COMO MEDIR

Apriete la banda alrededor de las poleas para verificar la longitud correcta, traslapando las dos últimas lengüetas con los dos agujeros en los eslabones correspondientes como muestra la foto. Cuente el número de eslabones y quite un eslabón por cada 24 de Secciones O/3L, A/4L y B/5L, y un eslabón por cada 20 de las Secciones C y D. Esto da la longitud correcta de la banda montada y asegura la tensión óptima de la banda durante el funcionamiento. Nota: Cada diez eslabones están marcados con una flecha (←). Asegúrese de que cada banda tiene el mismo número de eslabones en las transmisiones de bandas múltiples.

II. DESMONTAJE

Sujete la banda con la parte de arriba abajo y doble hacia atrás tanto como puede. Sujete con una mano, haciendo girar una lengüeta 90°, paralelo a la ranura.

Tirez le bout du maillon sur la languette.

Tire del extremo del eslabón, sobre la lengüeta.

Tourner le bout de la courroie 90° avec la languette.

Haga girar el extremo de la banda 90° con la lengüeta.

Faites passer le bout de la courroie à travers deux maillons.

Tire del extremo de la banda a través de dos eslabones.

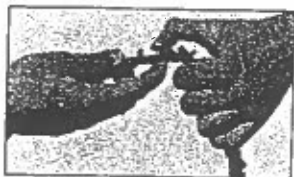


III. ASSEMBLY

Hold belt with tabs pointing outward.



Place end tab through two links at once.

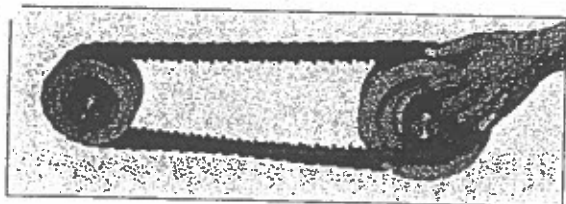


Flex belt further and insert second tab through end link by twisting tab with thumb.



Ensure tab returns to position across belt. Reverse belt so tabs run inside.

IMPORTANT—Turn Belt INSIDE OUT (As shown) To Ensure Easy Assembly and Disassembly



IV. INSTALLATION

1. Turn belt with tabs to the inside before installing.
2. Determine direction of drive rotation.
3. Align belt directional arrow (←) with drive rotation.
4. Fit belt in nearest groove of smaller sheave.
5. Roll belt onto larger sheave, turning the drive slowly. Belt may seem very tight; this is okay; **DO NOT JOG MOTOR.**
6. Check to see all tabs are still in their correct position and are not twisted out of alignment.
7. For multiple belt drives, work belt from groove to groove. On particularly wide drives, it may be easier to install half the belts from the inboard side and half from the outboard. **Note:** With drive ratios around 1:1, it may be necessary to *add back* one link to allow belts to be rolled on. This does *not* apply if using Alternative Installation Method.

III. MONTAGE

Tenez la courroie, les languettes dirigées vers l'extérieur.

Faites passer la languette de bout à travers deux maillons à la fois.

Piez la courroie davantage et introduisez la deuxième languette dans le maillon de bout, en tournant la languette avec le pouce.

Assurez-vous que la languette revient à sa position en travers la courroie. Retourner la courroie de manière que les languettes passent à l'intérieur.

IMPORTANT—RETOURNER LA COURROIE (Comme l'indique la photo) Pour Assurer le Montage et le Démontage Faciles

IV. INSTALLATION

1. Tournez la courroie, avec les languettes à l'intérieur, avant de l'installer.
2. Déterminez le sens de rotation de la transmission.
3. Alignez la flèche de direction de la courroie (←) avec la rotation de transmission.
4. Mettez la courroie en place dans la rainure la plus proche de la poulie la plus petite.
5. Montez la courroie sur la poulie plus grande, en faisant tourner lentement la transmission. La courroie peut sembler très tendue, mais cela n'a pas beaucoup d'importance; **N'AVANCEZ PAS LE MOTEUR PAS A PAS.**
6. Vérifiez que toutes les languettes sont dans leurs positions correctes et qu'elles ne sont pas désalignées.
7. Quant aux transmissions à courroies multiples, posez la courroie en travaillant de rainure en rainure. Sur les transmissions particulièrement larges, il se peut qu'il soit plus facile de monter la moitié des courroies depuis le côté intérieur et l'autre moitié depuis le côté extérieur. **Note:** Pour les rapports d'entraînement d'environ 1:1, il faudra peut-être *réinstaller* un maillon pour permettre la mise en place des courroies. Cela *ne* s'applique pas à la Méthode Alternative d'Installation.

III. MONTAJE

Sujete la banda, con las lengüetas hacia afuera.

Meta la lengüeta de extremo a través de dos eslabones a la vez.

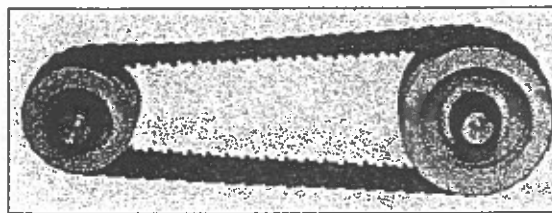
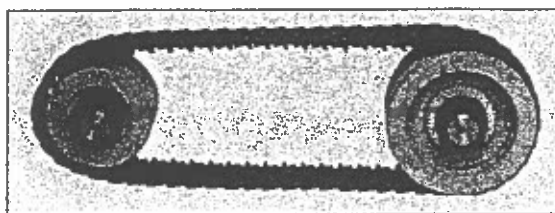
Doble la banda más y introduzca la segunda lengüeta a través del eslabón de extremo, haciendo girar la lengüeta con el pulgar.

Asegúrese de que la lengüeta vuelve a su posición a través de la banda. Vuelva la banda de manera que las lengüetas pasen hacia dentro.

IMPORTANTE—VUELVA AL REVES LA BANDA (Como muestra la foto) Para Asegurar el Montaje y el Desmontaje Fáciles

IV. INSTALACION

1. Vuelva la banda, con las lengüetas hacia dentro, antes de instalarla.
2. Determine el sentido de rotación de la transmisión.
3. Alinee la flecha de dirección (←) de la banda con la rotación de la transmisión.
4. Coloque la banda en la ranura más cercana de la polea más pequeña.
5. Coloque la banda en la polea más grande, haciendo girar lentamente la transmisión. La banda puede parecer apretado, pero, no importa; **NO AVANCE POCO A POCO EL MOTOR.**
6. Verifique que todas las lengüetas están todavía en sus posiciones correctas y que no están desalineadas.
7. En cuanto a las transmisiones de bandas múltiples, coloque la banda, trabajando de ranura a ranura. En las transmisiones especialmente anchas, puede ser más fácil de montar la mitad de las bandas desde el lado interior y la otra mitad de las bandas desde el lado exterior. **Nota:** Con razones de transmisión de aproximadamente 1:1, puede ser necesario de *reinstalar* un eslabón para permitir la colocación de las bandas. *No* se aplica al Método Alternativo de Instalación.



V. ALTERNATIVE INSTALLATION METHOD

1. Set motor to mid position of adjustment range and mark base clearly.
2. Determine required belt length as in I.
3. Push motor forward to minimum center distance.
4. Install belts as in IV.
5. Pull motor back to previously marked mid position.

V. METHODE ALTERNATIVE D'INSTALLATION

1. Réglez le moteur au milieu de la plage de réglage et marquez la base clairement.
2. Déterminez la longueur exigée de la courroie suivant le numéro I.
3. Poussez le moteur en avant jusqu'à la distance de centre en centre minimale.
4. Montez les courroies suivant le numéro IV.
5. Tirez le moteur en arrière à la position centrale déjà marquée.

V. METODO ALTERNATIVO DE INSTALACION

1. Monte el motor a la posición media de la gama de reglaje y marque la base claramente.
2. Determine la longitud requerida de la banda, según el número I.
3. Empuje el motor hacia adelante a la distancia entre ejes mínima.
4. Monte las bandas, según el número IV.
5. Tire del motor hacia atrás a la posición media marcada anteriormente.

VI. RETENSIONING

Like all high performance V-belts, PowerTwist Plus V-Belts require the maintenance of correct drive tension to operate efficiently. Experience indicates that drive tension should be checked after 24 hours running at full load. A retension may be necessary depending on the severity of the drive. Any initial belt stretch is then taken up. Subsequently, belt tension should be checked periodically and adjusted when necessary.

VI. RETENSIONNAGE

Comme toutes les courroies en V de haut rendement, Les Courroies en V PowerTwist Plus exigent le maintien de la tension correcte de la transmission pour fonctionner d'une manière efficace. L'expérience montre qu'il faut vérifier la tension de la transmission après 24 heures de marche à pleine charge. Il faudra peut-être rétendre selon la sévérité de la transmission. Alors, tout allongement initial des courroies est rattrapé. Par la suite, la tension des courroies doit être vérifiée de temps en temps et réglée au besoin.

VI. REATESAMIENTO

Como todas las bandas V de alto rendimiento, las Bandas V PowerTwist Plus necesitan el mantenimiento de la tensión correcta de transmisión para funcionar de manera eficiente. La experiencia muestra que hay que verificar la tensión de transmisión después de 24 horas de marcha a plena carga. Puede ser necesario de atesar de nuevo según la severidad de la transmisión. Así, se compensa todo alargamiento inicial de la banda. A partir de entonces, la tensión de la banda debe ser verificada de vez en cuando y ajustada según sea necesario.

PowerTwist Plus™

V-BELTS

SECTION II

HOW TO CHANGE ECCENTRIC SHAFT AND / OR ECCENTRIC ASSEMBLIES

1. Record location of shaft, eccentric assemblies and pitman arm length.

2. Remove drive pulley and belt, and loosen lock collars.

3. Unbolt pitmans from shoe pitman weldment.

4. Slide eccentric assemblies on shaft and remove keys.

5. Remove burrs on shaft and slide out of machine.



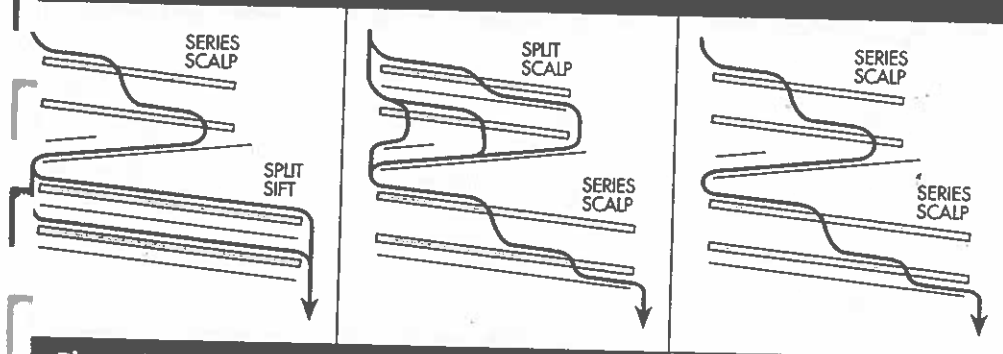
MOTOR & INVERTER POLICY

Clipper uses quality motors and controllers in all of our machines. In spite of this, problems sometimes arise because of power surges, improper wiring and manufacturing defects. If you should have a problem during installation or production, please refer to the attached pages to find the service center nearest to you. Please have the following information ready when you call.

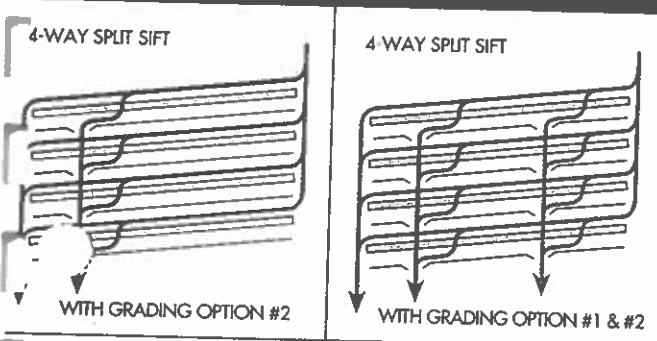
1. What is the Model and Serial Number of the unit? (Have your manual with you if it is a controller)
2. When was the unit installed?
3. What voltage is being supplied to the unit ? Have you had problems with other motors and/or controllers elsewhere in your operation ?
4. What symptoms is your unit experiencing?
5. What default codes are showing if your unit has this feature?

TITAN

Flow Options



Product Flow Options



lock" to prevent air from being drawn through the hopper rather than through the seed column, as it should.

The feeder is designed for use on all seed varieties, even those with large amounts of trash, when the optional agitator kit is used.

Efficient Air Settling Chambers

The Titan's air settling chambers use an "air lock" positive feed discharge to separate lightweight debris quickly and efficiently from the desired end product. Clipper positions the settling chamber for each separation as close as possible to the separation point to drop the trash out of the airstream quickly. This ensures that the air is working to increase the purity level of the product and only lifts out lightweight and immature seed.

Unique Shoes

The Titan's shoes are driven by one shaft to ensure that the shoes stay in time with each other. There is no need for timing belts, which can skip cogs and cause maintenance problems. Clipper is the only manufacturer of air-screen cleaners to use a $\frac{1}{2}$ " throw on the eccentric assembly. The shorter throw allows each seed to see more openings and move down the screen at an even rate. The shoes are supported by $\frac{1}{4}$ " thick composite hangers which are shorter than our competitor's to keep the cleaning shoes moving front to back - not sideways.

Warranty

Because of the quality inherent in our machines, Clipper offers a bumper to bumper, three-year warranty, which is longer than any other in the industry. Only

screens are excluded from our unique warranty. Quality parts and workmanship continue to be used in our manufacturing process to give you the assurance that Clipper products will be a valued part of your cleaning process for years to come.

Options

A variable speed control package is available to control the shoe shake to further enhance material separation.

A direct feed gate control package is available to access the feed control from the floor with an easily operated handle.

To simplify maintenance, a system is available to deliver grease to all bearings from a central location.

Evolutionary change... not revolutionary!

The new Titan series is a result of nearly 130 years of improvements and refinements. The reason a Clipper works so well is because the design has been continually and carefully improved upon, year after year since 1869. Who else can make such a claim?

Craftsmanship you will be proud to own!

A Clipper is truly a beautiful piece of equipment. The craftsmanship is usually admired because most people just don't see it any more.

Of course, you don't buy a Clipper because of its beauty - you buy it because of its performance.



TITAN

Fifty years old and they run like new!

Throughout the years, Clipper cleaners have earned an enviable reputation for durability. We receive part requests and ship parts daily for forty and fifty year old Clippers that are still operating. Many customers are still using their original machines but have updated them by adding new features such as ball trays. The new Titan Series of Clipper cleaners live up to those same high standards synonymous with the Clipper name. The frame is made from heavy-duty 1/4" thick

walled steel tubing and is designed to withstand vibration and to last just as its predecessors. The new open frame design offers much greater accessibility for maintenance and product observation.

Thousands of satisfied users

Reliable products that have evolved from many years of experience are why Clipper seed and grain cleaners may be the most widely used machines of this type in the world.

There is a hot-line to our President!

Clipper has thousands of satisfied customers because we try very hard to do a good job! If for any reason, we fail to meet your expectations, we encourage you to call our President, Eric Jarman, toll free at 1-800-305-0064 from anywhere in North America. From other geographic locations, call (519) 434-5929.

We would appreciate your business!

Technical Specifications		Electrical Specifications	
Extreme Height	151" / 383 cm	Main Fan Motor	15 HP / 110 kW
Extreme Width	86 1/2" / 220 cm	Eccentric Motor	5 HP / 3.75 kW
Extreme Length	184" / 468 cm	Vibratory Feeder	1/2 HP / .37 kW
Width on Floor	71 1/2" / 182 cm	Air Output	
Length on Floor	147" / 373 cm	5,500 to 8,000 CFM	

Precision Cleaning Capacity*	
Small Seed	200 to 500 Bu./Hr. / 6.0 to 15.0 Tons/Hr
Medium Seed	400 to 800 Bu./Hr. / 12.0 to 24.0 Tons/Hr
Large Seed & Wheat	800 to 1200 Bu./Hr. / 24.0 to 36.0 Tons/Hr

Precleaning Capacity*	
2,000 to 3,000 Bu./Hr. / 60.0 to 90.0 Tons/Hr	

*Note: Capacities may vary depending on seed condition, moisture content, seed varieties, types and volumes of contaminants to be separated and the percentage of foreign material acceptable in the final product.

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