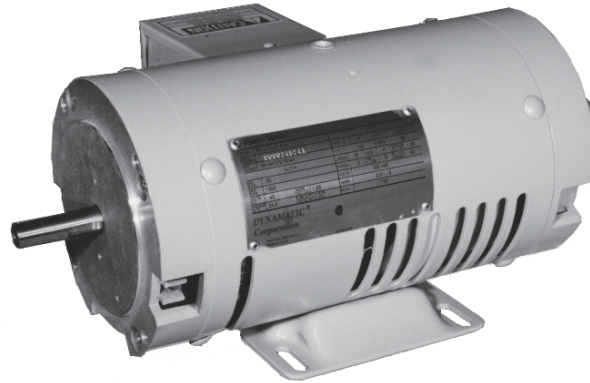


**Fractional HP Adjusto-Spede® Drives  
.25 through 1.5 HP**

**MODELS FD-2541 THROUGH FD-9523 DRIVES  
Drive Information**



**Description:**

Fractional horsepower Adjusto-Spede® Drives are a combination of an air-cooled, adjustable speed clutch and an integrally mounted NEMA B, AC induction motor in a common housing. The Adjusto-Spede® Drive transmits constant torque at variable speeds. There is no physical contact between input and output members. This results in smooth response, thereby eliminating shock loading and extending equipment life. All drives have an internal tachometer generator

mounted around the output shaft to provide a feedback signal to the drive's controller. The feedback signal from the tachometer generator is compared against a reference signal within the controller to maintain accurate speed regulation. It can also be used for speed indication with an optional tachometer. The controllers for the drives are described starting on Page 72 of this catalog.

Features	Customer Benefits
The mechanical unit is self-contained and requires no special hookup.	Easy installation.
Torque is transmitted by a magnetic field without friction or wear providing longer life.	Less downtime.
Tachometer feedback maintains the output speed within 2% for load changes from 0-75%.	Controls speed accurately.
200% rated torque capability is standard for starting and high peak loads.	Meets demanding overload requirements.
Rugged AC motor is the main drive member. Permanently lubricated bearings.	Minimal mechanical maintenance.
Available in single or three phase.	Compatible with existing machinery wiring and plant power.
Double output shaft and double 56C-Face allow brakes and gears to be easily added.	Flexible modifications after drive is in service. Brake mounting on drive rather than on driven machine.
one-year warranty on FAS mechanical drives.	FAS Drives are built to give long, reliable, low cost life in diverse applications.

revised 4/12/2018

**Fractional HP Ajusto-Spede® Drives  
.25 through 1.5 HP**

**Specifications for FD-2541 Through FD-9523 Drives**

<b>Motor</b>	HP and RPM Open Drip-proof (ODP) NEMA Design B Class F insulation, Class B Rise 1.15 Service Factor Frame Type Input Power  Controller transformer winding, 80 VAC one-year warranty	See selection table - Page 20 Standard Standard Standard Standard 56C 115/230V, 1 Phase, 60 Hz - Standard 230/460V, 3 Phase, 60 Hz - Standard Standard Standard
<b>Clutch</b>	Coil voltages Rated for constant torque Starting torque Intermittent torque AC tachometer generator Cooling one-year warranty	40 VDC - Standard; 90 VDC - Optional Standard Approximately 200% Approximately 200% Standard 100% self-ventilated Standard
<b>Controller</b>	Model 15-47 integral (Solid State) Model 15-80 wall mounted (Solid State) Closed loop speed control Speed regulation Regulated speed range Input power  Wall mounted enclosure Output voltage, current to clutch coil One-year warranty	Standard Optional Standard 2% Standard 34 to 1 available Motor transformer winding - Standard (40 V controller only) Optional 40 VDC, 1.25 Amp Standard
<b>Status Indication</b>	Speed indicating signal	0-40 VAC from tachometer generator for optional meter
<b>Environmental Ratings</b>	Storage temperature Operating temperature Maximum operating temperature Altitude	-20° to 65° C (-4° to 149° F) Standard 0° to 40° C (32° to 104° F) Standard 65° C – Optional 1000m (3300 Ft.) Standard
<b>Codes and Standards</b>	Mechanical NEMA, as applicable Mechanical CSA Controllers CSA	Standard Approved Approved
<b>Reliability Testing</b>	Mechanical 100% dynamometer tested Controllers Pre-tested components Printed circuit thermal stress cycle Computer test and pre-calibrated PCB's	Standard  Standard Standard Standard

revised 4/12/2018

**Fractional HP Ajusto-Spede® Drives  
.25 through 1.5 HP**

**Ordering Information**

The Ajusto-Spede® Fractional Drive includes an AC motor, with 115/230 VAC, 1 phase, 60 Hz. (115/230 VAC, 1 phase, 50 Hz. also available), or 230/460 VAC, 3 phase, 60 Hz. (220/380, 3 phase, 50 Hz. also available), open drip-proof, 1.15 SF, NEMA design B, Class F insulation, integrally mounted to an adjustable speed clutch with 100% rated motor torque continuously available over the speed range shown. The frame size for all fractional drives is 56C. An internal transformer winding for controller voltage is included. The standard 15-47 integrally mounted, 40-volt, 1.25 Amp controller is included. Selection of other controllers and can be found starting on Page 72. Operator stations can be found starting on Page 117. **\*\*Consult factory for non-standard units.**

**Selection Table - 1 Phase - 60 Hz**

HP	Speed Range (RPM)	Model Number	1 Phase
.25	1650-50	FD-2541-4001	115/230
.50	3300-65	FD-5021-4001	115/230
	1600-50	FD-5041-4001	115/230
.75	3300-65	FD-7521-4001	115/230
	1600-50	FD-7541-4001	115/230
1	1600-50	FD-9941-4001	115/230

**Selection Table - 1 Phase - 50 Hz**

HP	Speed Range (RPM)	Model Number	1 Phase
.25	1350-50	FD-2541-4002	115/230
.50	2700-65	FD-5021-4002	115/230
	1290-50	FD-5041-4002	115/230
.75	2700-65	FD-7521-4002	115/230
	1270-50	FD-7541-4002	115/230

**Selection Table - 3 Phase - 60 Hz**

HP	Speed Range (RPM)	Model Number	3 Phase
.25	1650-50	FD-2543-4001	230/460
.50	3300-65	FD-5023-4001	230/460
	1600-50	FD-5043-4001	230/460
.75	3300-65	FD-7523-4001	230/460
	1600-50	FD-7543-4001	230/460
1	3300-65	FD-9923-4001	230/460
	1600-50	FD-9943-4001	230/460
1.5	3300-65	FD-9523-4001	230/460

**Selection Table - 3 Phase - 50 Hz**

HP	Speed Range (RPM)	Model Number	3 Phase
.25	1350-50	FD-2543-4002	220/380
.50	2700-65	FD-5023-4002	220/380
	1290-50	FD-5043-4002	220/380
.75	2700-65	FD-7523-4002	220/380
	1270-50	FD-7543-4002	220/380
1	2600-65	FD-9923-4002	220/380
	1300-380	FD-9943-4002	220/380
1.5	2700-490	FD-9523-4002	220/380

**\*\*Consult factory for any additional accessories and/or modifications you may require that are not listed on the next page.**

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**Fractional HP Ajusto-Spede® Drives  
.25 through 1.5 HP**

**Modifications**

**Bases** - For drives with a spring-set or friction brake, standard base part number 152667-0100 is included. For drives with an eddy-current adjustable torque brake, optional base number 152456-0100 or 151327-0100 is required.

Part Number - 152456-0100

Part Number - 151327-0100

**Brake, Adjustable** - An eddy-current adjustable torque brake is mounted to the drive for stopping purposes. The adjustable brake does not provide a holding function. Brakes require an adjustable brake circuit in the controller. Factory Mounted on Clutch end (std.).

Part Number - 160730-1040

**Brake, Friction** - An electromagnetic friction brake is mounted to the drive for stopping or holding purposes. Brakes require a brake circuit in the controller. Factory Mounted on Clutch end (std.).

Part Number – 304195-0028

**Brake, Spring Set** - A spring-set brake is employed to provide spring actuated (electrically released) stopping and holding functions. A 115/230 VAC brake coil is furnished on single phase drives; a 230/460 VAC brake coil is furnished on three phase drives for normal 230-volt operation. The brake cannot be operated on 460 volts using the standard control station. A separate customer supplied relay is required for interfacing. If a different voltage coil is required, consult the factory. The brake may also be operated from a customer furnished AC source. This modification is used for most holding brake applications. A controller brake circuit is required. Factory Mounted on Clutch end (std.).

Part Number - 87869-1900 (115/230)

87869-0300 (230/460)

**Capacitor** - A capacitor is mounted on the top of single-phase drives and is included in the standard price. A ship loose capacitor kit assembly is also available. The kit assembly includes capacitor, capacitor case and misc. hardware.

Part Number - 000-161000-0100 - Loose (Kit)

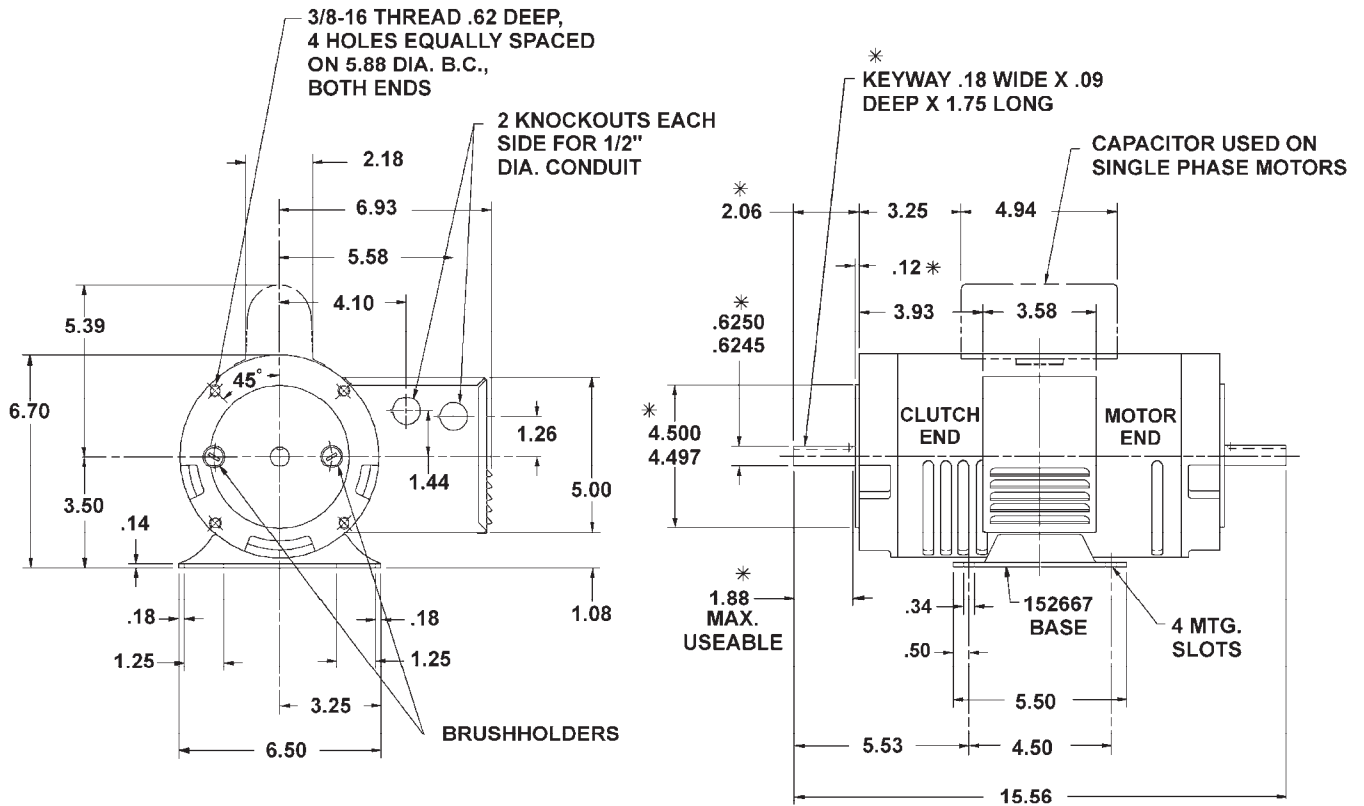
**Torque Control** - Provides constant voltage to the clutch coil. Since clutch torque is a function of this current or voltage, the magnitude of clutch torque is then dependent on the operator's setting of the Torque potentiometer. Speed Control is entirely absent with this modification. A special operator's station is required. The price includes the modification and operator's station.

Part Number - 28-000352-0001

**Fractional HP Ajusto-Spede® Drives  
.25 through 1.5 HP**

**Outline Drawings**

**Fractional Horsepower Ajusto-Spede Drive with Base**



\* THESE DIMENSIONS TYPICAL BOTH ENDS

C-160182

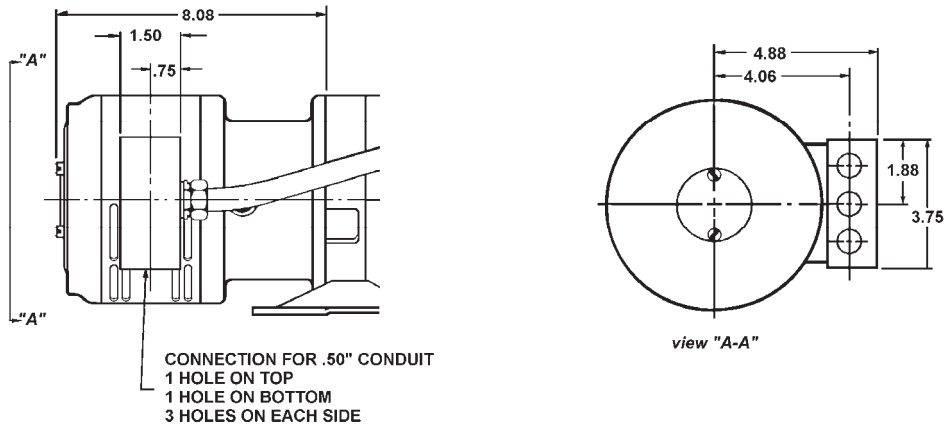
Approximate Net Weight: 51 lbs.

DIMENSIONS ARE IN INCHES

Fractional HP Ajusto-Spede® Drives  
.25 through 1.5 HP

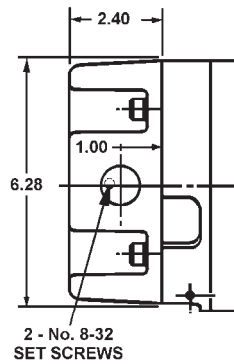
Modification Drawings

ADJUSTABLE TORQUE BRAKE



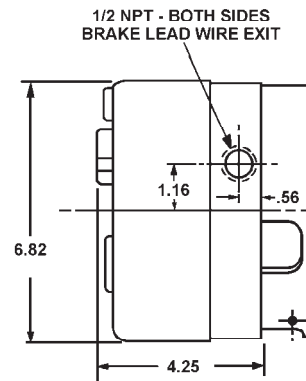
C-160511

FRICTION BRAKE



C-160193

SPRING SET BRAKE

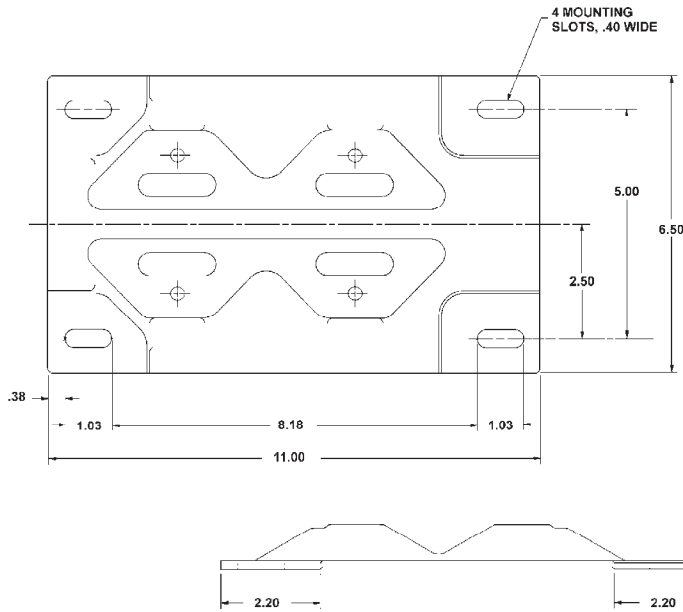


C-160187

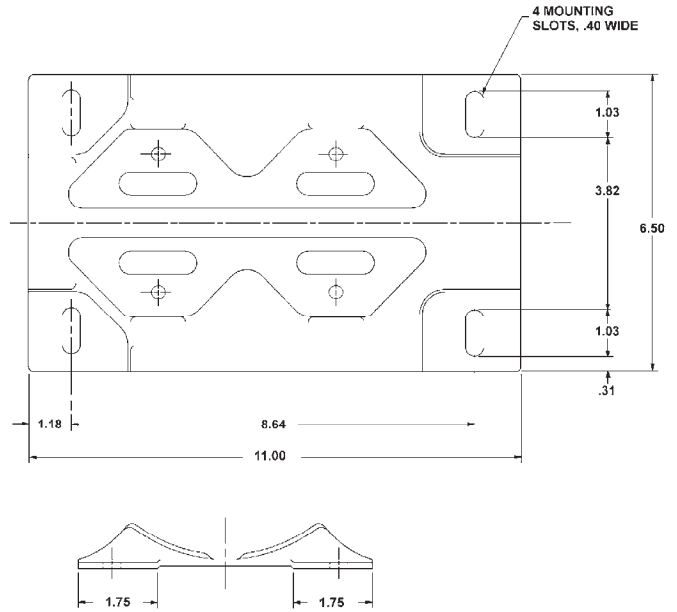
Approximate Net Weight (includes drive):  
Adjustable Torque Brake: 63 lbs.  
Friction Brake: 59 lbs.  
Spring Set Brake: 59 lbs.

Fractional HP Ajusto-Spede® Drives  
.25 through 1.5 HP

Fractional Drive Bases



Base No. C-152456-0100



Base No. C-151327-0100

Which Base To Use

Ajusto-Spede Drive Configuration	Base To Be Used
Standard Drive	152667 (Standard - not shown)
...with Friction Brake	152667 (Standard - not shown)
...with Spring-Set Brake	152667 (Standard - not shown)
...with Adjustable Torque Brake	152456 OR 151327



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## DSI - STANDARD TERMS AND CONDITIONS OF SALE

### 1. PRICE BOOKS

Price books are intended only as sources of general information. They are not to be construed as quotations or as representations that products described therein are available, or will be made available for immediate delivery.

### 2. QUOTATIONS

Seller may make quotations verbally or in writing. Verbal quotations shall expire automatically unless Seller receives Buyer's purchase order number on the day the quotation is made. Written quotations shall expire automatically unless Seller receives Buyer's written purchase order within 15 days after the date appearing on the quotation. No quotation is to operate as an offer to sell but only as a description of products. Accordingly, even prior to its expiration date, any quotation is subject to change by Seller at any time upon verbal or written notice to Buyer. All quotations are deemed to incorporate Seller's Standard Terms and Conditions of Sale.

### 3. ACCEPTANCE OF PURCHASE ORDERS.

Notwithstanding any contrary language contained in Buyer's purchase order, each purchase order shall be subject to acceptance by an authorized employee of Seller's plant, and each purchase and sale transaction shall be governed exclusively by these Standard Terms and Conditions of Sale. Seller reserves the right at any time before delivery and payment to correct clerical, stenographic or other errors in quotations, purchase orders or acknowledgments.

### 4. PRICE POLICY

Regardless of prices set forth in quotations, acknowledgments or elsewhere, Buyer shall pay a purchase price as follows:

- (a) For the following products: Fractional Horsepower Ajusto-Spede®, AC Motors, renewal parts and service, Buyer shall pay Seller's published prices in effect on the date when shipment is made or service performed.
- (b) For all other products, Buyer shall pay a purchase price equal to the smaller of: (a) Seller's published prices in effect on the date when shipment is made or (b) the prices set forth in Seller's acknowledgment increased by 1% for each month or fraction thereof that elapses between the date when the acknowledgment is mailed from Seller's factory to Buyer (designated as the "Issue Date" on the acknowledgment) and the date when shipment is made or the date for which shipment was originally scheduled (as stated on the acknowledgment) by Seller, whichever occurs sooner. However, in the event that shipment is originally scheduled to occur in excess of 12 months after Issue Date, Buyer shall pay Seller's published prices in effect on the date when shipment is made; and in any case where shipment is delayed beyond Seller's originally scheduled date for shipment by Buyer's actions or at Buyer's request,

Buyer shall pay escalation charges based on the revised delivery schedule.

### 5. MINIMUM BILLING

The minimum billing for each purchase order shall be \$100.00 net.

### 6. TAXES

Any and all sales, use, personal property or other excise taxes which the Seller may be required to pay or collect, including first destination taxes, will be added to each invoice and shall be payable by Buyer on the same terms as the purchase price unless the Buyer has furnished the Seller a tax exemption certificate acceptable to the taxing authority.

### 7. PAYMENT TERMS

Payment terms shall be net 30 days except for International orders, which will be cash in advance. However, on orders of \$100,000.00 or more and having delivery schedule 6 months or longer from date of order, the payment terms shall be as specified by Seller at time of quotation.

### 8. SHIPPING TERMS

Except as otherwise agreed, Seller shall be entitled to select carrier and make delivery in more than one shipment, in which event Buyer shall pay separately for each partial shipment.

All shipments shall be made F.O.B. point of shipment. Seller shall prepay freight (UPS shipments only), which shall be billed to Buyer as a separate item on the product invoice at Seller's standard rates applicable to the destination, or at Buyer's option, shipment shall be made freight collect. All truck shipments shall be made freight collect, unless otherwise agreed.

### 9. PACKAGING

At no additional charge, all products shall be packaged for domestic shipment in accordance with Seller's standard specifications. Additional charge shall be made if Buyer specifies special domestic packaging, packaging in accordance with government or military standards, overseas packaging or other special packaging. Refer to Seller's plant, nearest sales office or representative for further information.

### 10. TITLE AND RISK OF LOSS

Risk of loss in transit shall be borne entirely by Buyer at all times after the products are delivered to the carrier for shipment. However, title to the products and right to stop delivery in transit shall remain with Seller until Seller receives payment in full.

### 11. DELAYS OR DEFAULT IN DELIVERY

Seller shall have no liability to Buyer, and Buyer shall not be entitled to cancel any purchase order, for Seller's delay or default in delivery due to strikes, secondary boycotts, riots,



wars, accidents, fires, floods, explosions, vandalism, government embargoes, priorities or regulations, shortages of labor, fuel, materials, supplies, power or transportation facilities, or other similar or dissimilar causes beyond Seller's reasonable control. Under no circumstances shall Seller have any liability for penalties or consequential damages of any kind resulting in whole or in part from Seller's delay in delivering, or failure to deliver, any products ordered by Buyer.

#### **12. CHANGES TO ORDERS IN PROCESS**

There shall be a charge for any and all changes in specification after an order is in process, based on the status of the order at the time the change is made. The additional charge shall be a minimum of \$50 net per item when engineering has not been started or is not required and a minimum of \$100 net per item when re-engineering is required. The additional charge shall be in addition to any change in the price of the product resulting from the change in specification. The order "Issue Date" will be moved forward to the date of the change and shipment will be rescheduled in accordance with the then current lead times. Buyer shall pay escalation charges based on the new "Issue Date" and scheduled shipping date as defined in paragraph B.

#### **13. CANCELLATION**

After Seller accepts Buyer's purchase order by faxing Seller's written acknowledgment, Buyer's cancellation of any order or portion thereof may be accomplished only upon (i) Seller's receipt of written cancellation notice at Seller's plant (cancellation notice by telephone will be deemed only as authorization for Seller temporarily to suspend performance on Buyer's order pending written confirmation of cancellation) and ii) Buyer's payment of the following cancellation charges:

Notwithstanding anything to the contrary contained herein, the minimum cancellation charges for products shall be 50% per line item or 50% per complete order.

With respect to all costs and expenses described above, Seller shall provide such substantiating documentation as Buyer may reasonably request, and Seller's computations, thus documented, and shall be conclusive and binding between the parties. With respect to all canceled products, materials and supplies described above, Seller shall, upon payment of the applicable cancellation charges, make such disposition as Buyer may specify in writing within 30 calendar days after Seller notifies Buyer of the applicable cancellation charges. Buyer's failure to so specify within said 30-day period shall constitute Buyer's authorization for Seller to make such disposition as Seller chooses with no further obligation to Buyer.

#### **14. PATENT INFRINGEMENT**

With respect to all products manufactured to Buyer's design, Buyer shall indemnify and hold Seller harmless from and against any and all loss, cost, expense, claims, demands, suits and judgments resulting from actual or alleged patent infringements. With respect to all other products sold by Seller, Seller shall defend any suit or proceeding brought against Buyer on a claim that such a product, or any part thereof when employed in the manner intended by Seller, infringes any U.S. patent, provided that Seller is notified promptly in writing and given all necessary information, assistance and authority to defend same. Seller shall pay all damages and costs awarded against Buyer as a result thereof. If the court finds such an infringement, and the use

of any product, in the manner intended by Seller is enjoined, Seller shall at its sole expense, at Buyer's option (a) procure for Buyer the right to continue using said product, (b) replace said product with a non-infringing product, (c) modify said product so that it becomes non-infringing or (d) remove said product and refund its purchase price and transportation and installation costs. Seller shall have no further liability for actual or alleged patent infringement except as provided herein.

#### **15. PRODUCT WARRANTY AND DISCLAIMER**

Seller warrants to Buyer, subject to the limitations, conditions and disclaimers stated herein, that all new products manufactured by Seller shall be free from defect in material and workmanship and shall deliver their rated output as indicated on the nameplates for a period of one (1) year from the date of shipment to the Buyer. Buyer must notify Seller in writing of defect or failure to deliver rated output within the applicable warranty period and give Seller the opportunity to determine that the defect or failure exists. Buyer shall, at Buyer's expense, make each allegedly defective product available for Seller's inspection at Buyer's place of business or, at Seller's option, return each such product to Sellers plant or service center as designated by Seller, freight both ways to be paid by Buyer. No products shall be returned to Seller's plant or service center except in accordance with Seller's prior written instructions. Determination of any defect is made at Seller's sole discretion and Seller's decision is final. To remedy any defect, the Seller may at its option, repair, rebuild or replace the defective component or complete product, using new or re-manufactured components or complete product. In any case the repaired, rebuilt or replaced product shall be warranted hereunder for the then non-expired portion of the original warranty period. Seller's sole obligation to Buyer, and Buyer's sole remedy against Seller, for any breach of this warranty shall be Seller's obligation to repair or replace the product as provided herein or, at Seller's option, to repay, upon return of the defective product, the price paid for such product by Buyer.

Any tampering, misuse, mis-application, and/or improper installation of the product by Buyer or Buyer's representatives may void warranty. Additionally, any service/repair work performed by any personnel not pre-authorized by Seller to perform the service/repair work will void warranty. Products sold by Seller, but not manufactured by Seller, shall be warranted as to defects in material and workmanship consistent with the warranty policy of the original manufacturer of the products. In no event shall Seller have any liability for incidental or consequential damages of any kind resulting from a breach of this warranty. THIS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY FOR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

#### **16. RETURNS**

No products shall be returned to Seller, whether for inspection, repair, replacement or any other reason, without prior written consent from Seller's plant, sales office or representative

*Revised April 12, 2018*