



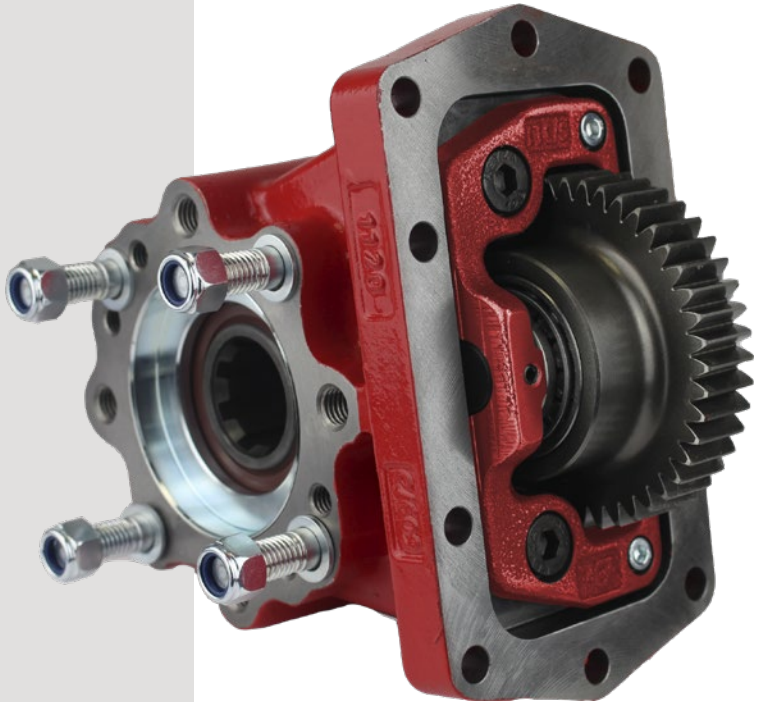
Hydraulic Systems

3940

Power Take-off

Bezares PTO P/N 3940POE783DA

For 2020/2021 F250-600



User Manual

27634, Commerce Oaks Drive
Oak Ridge North, Texas 77385
Phone: +1 888 663 1786
pto@bezares.com

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Warning	Follow all local, state and federal safety precautions. Also adhere to all company safety procedures before, during and after PTO installation.
Caution	Protect wiring for more severe environmental and corrosive conditions. It is recommended the installer ensures all wired connections are sealed to help prevent moisture intrusion and reduce possibility of corrosion. We recommend using heat shrink butt connectors. Following this recommendation may ensure better performance in severe environmental and/or corrosive conditions.
Note	Read the truck manufacture operation's manual before starting the install.

Safety Information

CAUTION

TO PREVENT POSSIBLE INJURY:

DO NOT go underneath the vehicle with the engine running.

DO NOT attempt to work on an installed Power Take-Off with the engine running.

DO NOT operate the controls of the Power Take-Off or other driven equipment from underneath the vehicle with the engine running.




DO NOT operate the controls of the Power Take-Off or other driven equipment in any position that could result in getting caught in the moving machinery.

Make sure to block any moving or raised device that may injure a person working on or under the truck. A lever or its linkage may be accidentally moved causing movement of the device which could cause injury to a person near the device.

IMPORTANT

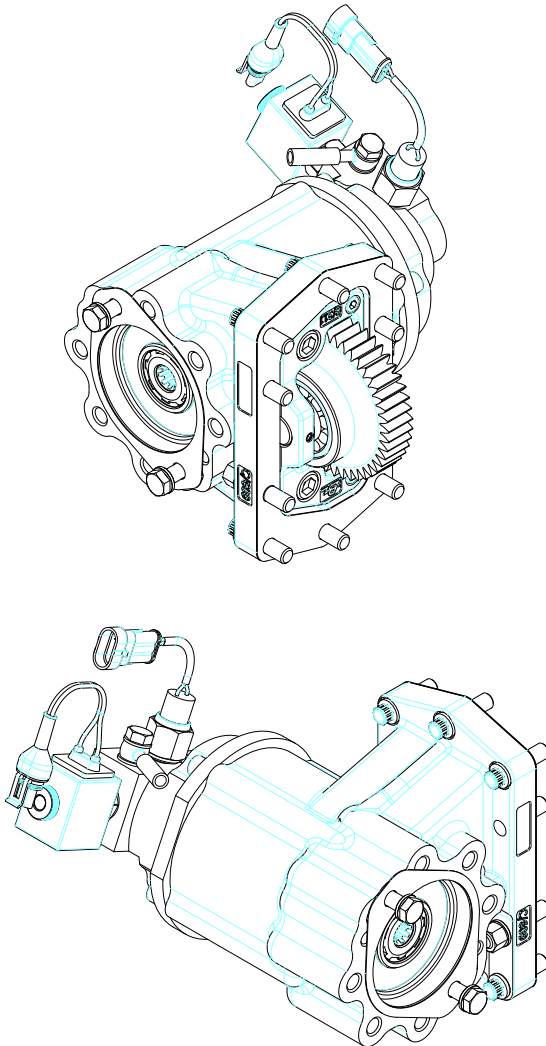
Because most of our Bezares Power Take-Offs and P.T.O. drive lines are sold through distributors, the product applications and the resulting degree of exposure to danger of the operators are beyond the knowledge and controls of BZ U.S.A.

Therefore, the proper installation of the P.T.O. and its associated equipment, and the decisions of whether to install guards and/or warning signs shall be the responsibility of the designers or installers.

	DANGER		PELIGRO
NEVER GET UNDER THE TRUCK IF THE ENGINE IS RUNNING!		¡NUNCA SE META DEBAJO DEL CAMIÓN CUANDO EL MOTOR ESTÉ EN MARCHA!	
	You may be hurt or killed.		

Since it is our major objective to show you how to get additional and more profitable miles from truck, tractor and trailer components, we want to provide you with information on the installation of 3940 Series.

We all realize that an inadequate transmission will overwork any Power Take-Off in a very short period of time. In addition, a mismatched transmission/P.T.O. combination can result in unsatisfactory performance of the equipment right from the start.



Application Questions

Here are some of the questions that are relevant to the Proper Selections of Transmission mounted Power Take-Offs.

1. What is the make and model of your transmission?
2. Which P.T.O. opening will be used?
3. What accessory is to be driven?
4. How much horsepower is required to drive the accessory?
5. What is the required rotation of the P.T.O.?
6. What is the required P.T.O. output shaft speed as a percent of engine speed?.
7. What is the required method of shifting the P.T.O., mechanical or pneumatic?

Once all of these answers have been determined, a transmission mounted P.T.O. can be selected to meet the horsepower, speed and rotation that you require.

Having made the selection of a P.T.O., you are ready to start the installation.

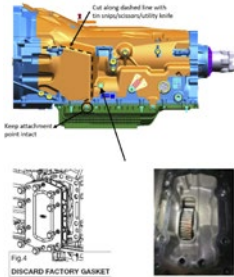
step 1

With Park brake set, place truck in neutral and start engine. Listen to engine and transmission, gear noise may be more noticeable after PTO is installed which is caused by Torsional vibrations. STOP ENGINE-Never go under truck with engine running!

step 2

If chassis is 4X4 remove or disconnect driveshaft for clearance

step 3



Find PTO opening on transmission. If applicable remove NVH (Noise-Vibration-Heat) material from area around PTO aperture. The NVH will need to be cut from shaded area shown or compress for PTO clearance. See Ford SVE Service Bulletin Q-300 available at (www.fordbbs.com)

step 4

Remove the ten bolt aperture cover, placing a drain pan below for any drainage. Discard factory gasket. Note! transmission PTO drive gear must be present

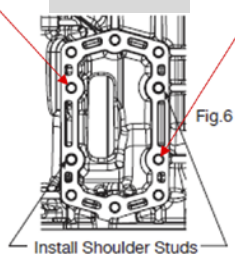


step 5

Note! Mounting kit contains 2 guide pins-6 cap screws and 2 step studs with washers and nuts

Install guide pins in location shown hole position 4 & 10. Install step studs in location 2 & 8

step 6



step 7

CAUTION! If installing on a Gas Engine powered chassis: Prior to PTO installation, wrap exhaust down pipe with heat reflective material. Exhaust header pipe wrap may be used or an aftermarket heat shield. It is also necessary to install reflective loom or heat protection sleeve on pressure switch wires as well as wiring to coil.

Mount PTO using the six cap screws plus 2 washers and nuts on step studs. Torque to 28 lb. ft.

step 8

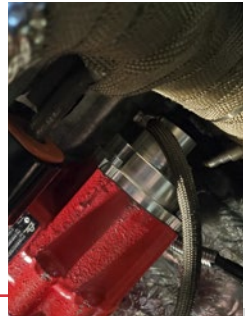


step 9



Install pressure switch inside port and solenoid valve on end port per picture. Place a dab of Loctite Blue on valve nut. Make sure that the O'ring is installed prior to attaching nut

Install pressure hose in pressure activation port as shown above. Caution! If chassis has a gas engine, Install heat resistant loom over pressure supply hose. See picture below.

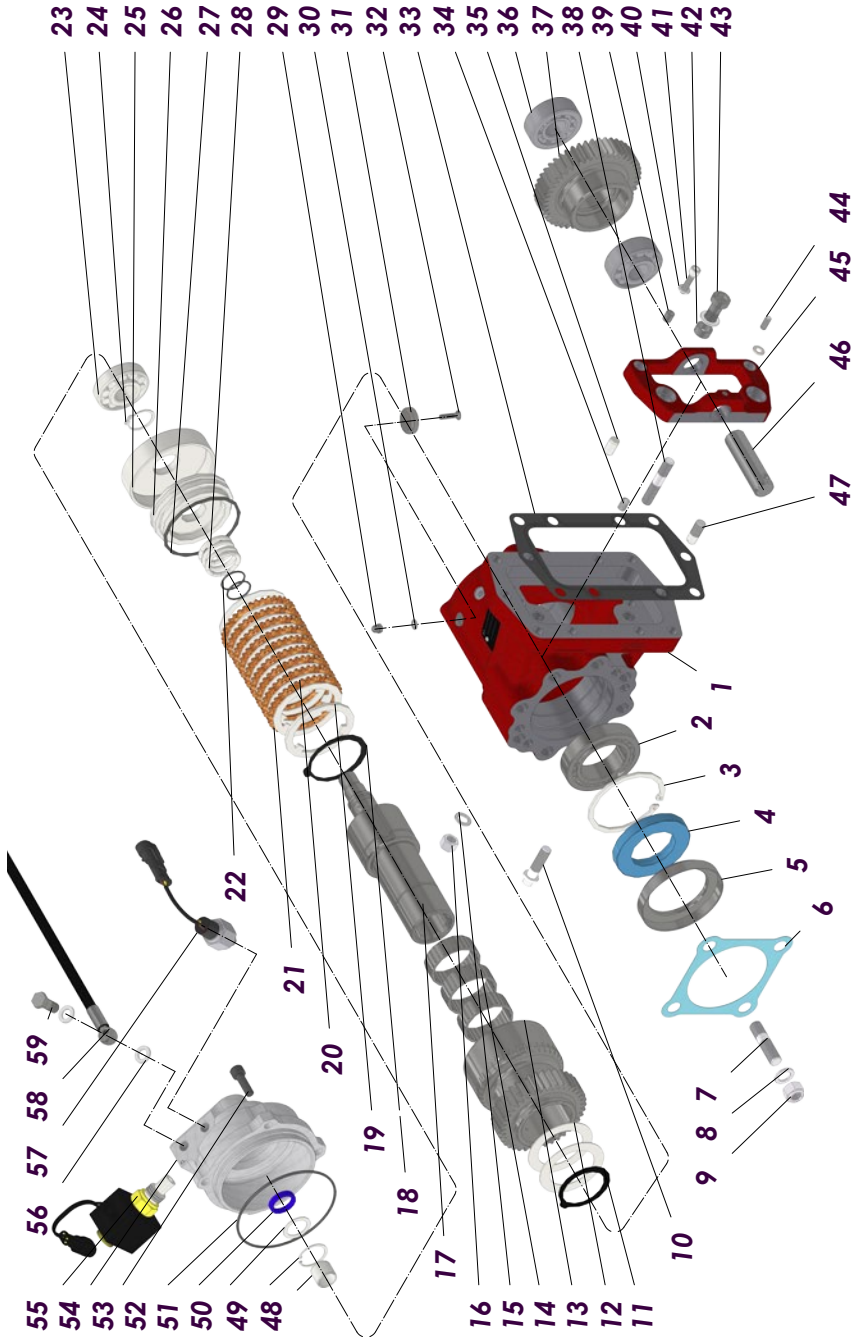


Heat resistant header pipe wrap- with clamps.

step 10



step 11



PTO Installation

Operation

1. Read and follow the truck's manual before attempting to run PTO
2. Verify tranny has adequate fluid and extra fluid to compensate for PTO (DO NOT OVER FILL)
3. Follow all company, federal, state and local safety procedures and guidelines.
4. Apply parking brake.
5. Truck must be in neutral.
6. Insert key in ignition.
7. Verify no one is under vehicle or near any rotating parts – ALL CLEAR!
8. Start engine, the PTO is not engaged, and the output shaft is not turning.
9. Depress the in-dash PTO #1 rocker switch, it will illuminate, the engine rpm slightly increases.
10. The PTO now shifts, and the output shaft is rotating.
11. Depress the PTO rocker switch to disengage PTO and discontinue output shaft rotation

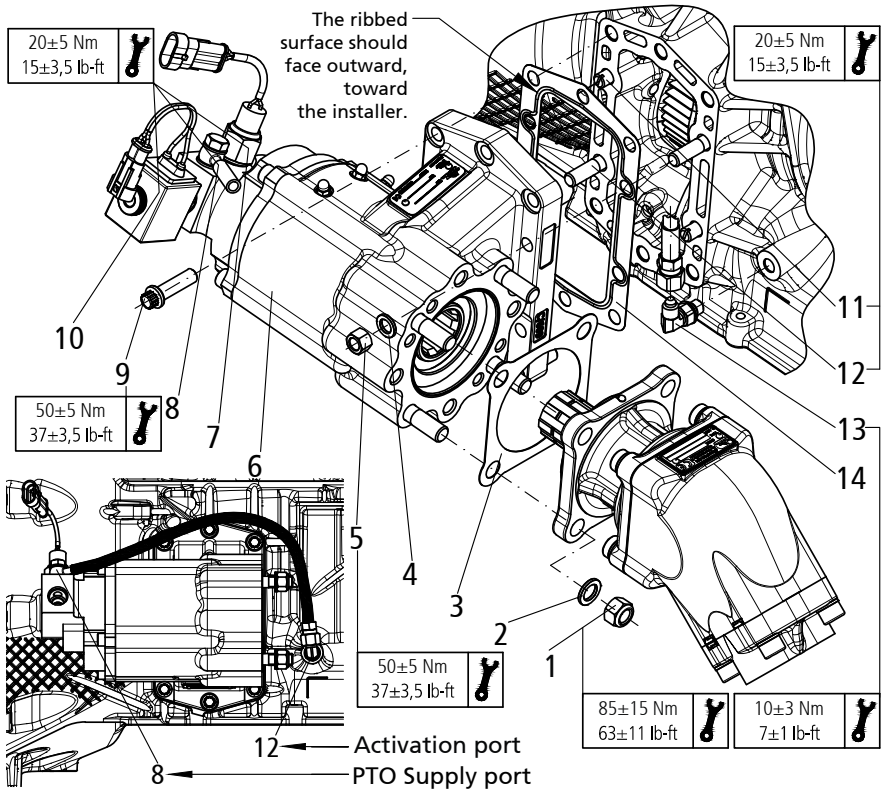
Verification

1. Check for leaks, fix any if found.
2. After truck warms up check all hardware for proper torque, tighten as needed.
3. Check all wire connections, ensure they are correctly installed and away from heat and rotating parts, fix and repair as needed.
4. Check the airline, ensure it is correctly installed and away from heat and rotating parts, fix and repair as needed.

Operation

The PTO is installed. Complete the rest of the associated equipment installation

Electric over hydraulic shifter installation drawing

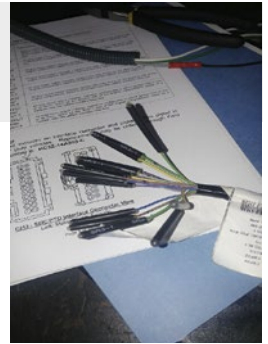


Before you order new trucks be sure that you're getting the right transmission/P.T.O. combination. It is of vital importance for efficient performance to have adequate power. To help you select the proper type, size and design of P.T.O. it is advisable to discuss your specific requirements with a Bezares P.T.O. specialist. They know their products and Power Take-Offs. They can inform you about everything you need to know about power, at the right time, before you specify components.



1- Locate the 2020 Ford wires bundled together at the Passenger Side located behind the kick panel at the passenger's feet.

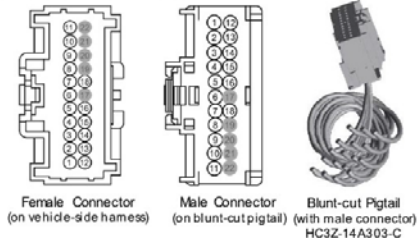
2- Remove the bundled wires from the two-sided connector (female pins)



3- Strip the selected wire ends and install butt connectors.

C213 SEIC / PTO Connector with Customer Access Circuits

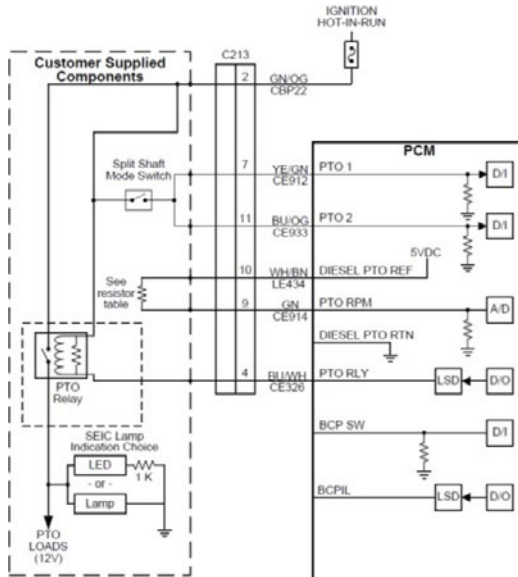
All Super-Duty trucks include a blunt-cut pigtail harness with a male SEIC interface connector located under the side kick-panel in the passenger footwell. This pigtail is included on all F-series Super-Duty vehicles. Replacements may be ordered through Ford Parts. Service Part #: HC3Z-14A303-C.



Bezares to ford (diesel) colored wiring

- GREEN ▶ Green- CE914-(PTO RPM)-Pin 9
- WHITE ▶ White/Brown LE434-(DIESEL PTO VREF)- Pin 10
- GRAY ▶ Gray/Violet- RE327-(DIESEL PTO RTN)-Pin 6
- BLUE ▶ Blue/White- CE326-(PTO RLY)-Pin 4
- YELLOW ▶ Yellow/Green- CE912 (STATIONARY) - Pin 7
▶ OR Blue/Orange- CE933 (MOBILE) - Pin 11
- RED ▶ 12V switched for customer supplied PTO indicator light.
- PURPLE ▶ Pressure switch ground loop for customer supplied PTO indicator light.
- BROWN ▶ Auxiliary Upfitter switch # 1-CB 117-Brown/Green
- BLACK ▶ BATTERY GROUND

Split shaft mode • Diesel



SEIC • PTO enable/disable conditions

Vehicle Conditions to Enable SEIC (all are required)	Vehicle Conditions that Disable SEIC (any one required) SEE NOTE 1	SEIC	Split-Shaft (Diesel Only) SEE NOTE 3	Mobil Mode
Parking brake applied	Parking brake disengaged	✓	✓	✗
Foot off service brake	Service brake depressed	✓	✓ (SEE NOTE 2)	✗
Vehicle in PARK	Vehicle taken out of PARK	✓	✓ (SEE NOTE 2)	✗
Foot off accelerator pedal	Accelerator pedal depressed	✓	✓	✗
Vehicle speed is 0 MPH (stationary)	Vehicle speed is not 0 MPH	✓	✓	✗
Engine at a stable base idle speed	--	✓	✓	✗
Transmission oil temp above 20° F	Transmission oil temperature exceeds 240° F (Diesel) or 250° F (Gas)	✓	✓	✓
Engine coolant temperature at least 20° F (6.7l Diesel)	Engine coolant temperature exceeds 230° F	✓	✓	✓
Engine coolant temperature at least 20° F (6.2l or 7.3L Gas)	Engine coolant temperature exceeds 230° F	✓	N/A	✓
--	Catalyst temperature limit	✓	✓	✓

BEZARES to FORD SEIC Circuit Wiring- 2020/2021 10R140-6.2-7.3L-GAS- F250-600

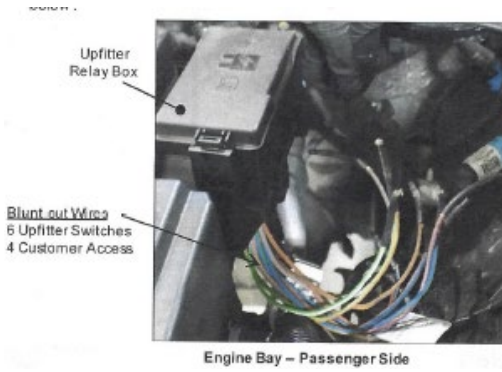
Bezares to Ford (gas) colored wiring

- GREEN ▶ Green-CE914-(PTO RPM)-Pin 9
- WHITE ▶ Yellow/Green-LE424-(PTO VREF)-Pin 18
- GRAY ▶ Yellow/Violet-RE407-(SIGNAL RETURN C)-Pin 16
- BLUE ▶ Blue/White-CE326-(PTO RLY)-Pin 4
- YELLOW ▶ Yellow/Green-CE912-(Stationary)- Pin 7
▶ OR Blue/Orange-CE933-(Mobile)-Pin 11
- RED ▶ 12 V Switched for customer supplied PTO indicator light.
- PURPLE ▶ Pressure switch ground loop for customer supplied PTO indicator light.
- BROWN ▶ Auxiliary Upfitter switch # 1-CB117-Brown/Green
- BLACK ▶ Battery Ground

Note! When using the Auxiliary Upfitter Switch # 1, the pressure switch port may be plugged. This will eliminate a PTO indicator light. If a true PTO indicator light is desired the upfitter can install their own indicator light. This requires the Pressure Switch to be installed in PTO rear cover. Connect the Pressure Switch ground loop (purple) wire and the 12 V switched (red) wire to customer supplied PTO indicator light.

Auxiliary pto switch # 1- 25amp fused.

Connect the brown wire to the upfitter switch Green/Brown wire. The relay box is located on the the passenger side of the firewall



Six upfitter switch blunt-cuts (located underhood below upfitter relay box)

Upfitter Switch	Fuse #	Wire Color	Circuit	Rating	Configuration
AUX 1	F10	BN/GN	CB117	25A	IGNITION HOT ONLY
AUX 2	F9	VT/OG	CB114	25A	IGNITION HOT ONLY
AUX 3	F8	BU/BN	CB116	25A	IGNITION HOT ONLY
AUX 4	F7	GY/BN	CB113	25A	IGNITION HOT ONLY
AUX 5	F1	BN/BU	CB115	40A	IGNITION HOT OR HOT-AT-ALL-TIMES
AUX 6	F2	GY/OG	CB118	40A	IGNITION HOT OR HOT-AT-ALL-TIMES

Return and warranty terms

The items described in this document and other documents or descriptions provided by Bezares USA, Ltd. are hereby offered for sale by Bezares USA, Ltd. These terms and its acceptance by any customer shall be governed by all of the following Terms and Conditions. Customer's order for any such items, when communicated to Bezares USA, Ltd. verbally or in writing, shall constitute acceptance of these terms.

1. **Terms and Conditions:** Customer's acceptance of any offer to sale is limited to these terms and conditions. Customer accepts warranty terms policy once product(s) is/are purchased. All goods not returned under these conditions will automatically be rejected. Bezares USA, Ltd. accepts no warranty for any non-direct purchase or particular purpose, or the results to be obtained for their use by its distributors, purchasers, or others.
2. **Delivery:** Any product to be returned or claimed to be defective must be held for shipping instructions to Bezares USA, Ltd. Returned merchandise must be resalable as new to be considered for full credit (for any returns excluding claims to be defective). All OE (original equipment) parts must be returned, and any missing parts will be deducted from possible credit accordingly. Bezares USA, Ltd. holds responsibility for any product shipped from any Bezares USA, Ltd. subsidiary until the shipment is received and signed for by the customer (this condition does not apply if shipped according to customer's preferred carrier). Bezares USA, Ltd. does not hold any responsibility for returned product(s) until a Bezares USA, Ltd. employee receives and signs for shipment (Bezares USA, Ltd. holds no responsibility for any shipping inconveniences such as lost or damage in transit).
3. **Warranty:** Bezares USA, Ltd. warranties its manufactured product to be free of defects in materials and workmanship for a period of eighteen months on PTOs, and fifteen months on hydraulic pumps and any other hydraulic equipment from its date of invoice. If requested by Bezares USA, Ltd., products or parts for which a warranty claim is made are to be returned via transportation prepaid to Bezares USA, Ltd. Any installation or use not in accordance with catalogue or package instructions, other improper use, operation beyond capacity, substitution of parts not approved by Bezares USA, Ltd., use with equipment other than the equipment on which the product is first installed, any alteration, disassembly, or repair made to the product other than by Bezares USA, Ltd. shall void this warranty. No Bezares USA, Ltd. representative is authorized to change this warranty in any way.
 - **Stock Returns:** A 1:1 offsetting order will be required if the return value exceeds 2.5% of customer last year's purchase. Annual stock adjustments are limited to 5% of previous year's purchases. A 15% restocking fee will apply for all returns within the first year of original purchase, a 30% restocking fee will apply for all returns within the second year from original purchase, and a 50% restocking fee will apply for all returns after third year of purchase. No returns will be accepted after three years from original purchase. Returning merchandise must be listed in Bezares USA, Ltd.'s current price sheet, and must be returned within one year of becoming obsolete.
 - **Technical Warranties:** Bezares USA, Ltd. will not be responsible in case of wrong assembly of their units by another party, in the case of damage generated by external causes, in the case of overload, inadequate lubrication, or other problems related with a wrong assembly on a transmission from preowned trucks. Customer or its respective salesmen must complete a Customer RMA Form and submit it to Bezares USA, Ltd.'s Warranty Department in order to be considered for warranty investigation.
4. **Limitation of Remedy:** Bezares USA, Ltd. agrees to repair, credit (all merchandise credits will be on account, and must be used within a 12 month period from date of issue, otherwise credit will be forfeited – no cash refunds are permitted), or replace the product which has been proven to be defective in material or workmanship within the time period listed above. Bezares USA, Ltd. must be informed prior to any product repair that will be made at any location other than Bezares USA, Ltd. Bezares USA, Ltd. will only authorize a company to proceed with the repair after receiving and approving a repair quotation, or will inform the insurance company to cover the responsibility, otherwise, Bezares USA, Ltd. will decline any responsibility for any cost involved in such repair. Bezares USA, Ltd.'s obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, special, incidental, or consequential damages or delay.
5. **Special Orders:** Orders for all non-stock items in Bezares USA, Ltd. that must be shipped direct from factory, regardless of value of order, will be under prepaid and add terms. This includes all Air/Ocean freight charges and customs and duty. Special order returns/cancellations are subject to a 75% restock fee. Freight charges on Special Orders are Nonrefundable.
6. **Force Majeure:** Bezares USA, Ltd. shall not be liable for failure to perform, nor be deemed to be in default under this agreement for any delay or failure in performance resulting from causes beyond its reasonable control including but not limited to failure of performance by the other party, acts of state or governmental authorities, acts of terrorism, natural catastrophe, storm, flood, earthquake, riot, insurrection, civil disturbance, sabotage, embargo, blockade, acts of war, or power failure. In the event of such delay, the date of delivery or time of completion will be extended by a period of time reasonably necessary to overcome the effect of any such delay.
7. **Governing Law:** It is the intention of the Parties to this Agreement that this Agreement and the performance under this Agreement, and all suits and special proceedings under this Agreement, be construed in accordance with and governed, to the exclusion of the law of any other forum, by the laws of the United States of America without regard to the jurisdiction in which any action or special proceeding may be instituted.
8. **Indemnification:** The customer agrees to indemnify and hold harmless Bezares USA, Ltd. and its respective affiliates, officers, agents, employees, and permitted successors and assigns against any and all claims, losses, damages, liabilities, penalties, punitive damages, expenses, reasonable legal fees and costs of any kind or amount whatsoever, which result from or arise out of any act or omission of Bezares USA, Ltd. its respective affiliates, officers, agents, employees, and permitted successors and assigns that occurs in connection with this Agreement. This indemnification will survive the termination of this Agreement. In witness whereof the parties have executed this agreement on the date set forth first above with full knowledge of its content and significance and intending to be legally bound by the terms hereof.

SUBSIDIARIES



+1 888 663 1786
pto@bezares.com

Thailand

HIDROPOW CO., LTD

12/19 Moo 5, Kingkaew RD Rachateva,
Bangplee • Samutprakarn • 10540 • Thailand

Phone: +66-2-738-8899

thanaponglavaphan@gmail.com

France

BEZARES FRANCE

106, Avenue des Roses. Zac de la Butte Gayen
94440 Santeny • France

Phone: +33 01 45 10 15 40

bezaresfrance@bezares.com

Mexico

BEZARES MÉXICO

4ª Avenida N°. 980 Colonia. Zimix
Santa Catarina, N.L. México 66358 • Monterrey

Phone: +52 81 1287 0090

info@bezaresmexico.com

UK

BEZARES UK

Wharf Works, Main Building, Three Bridges
Rd, Long Buckby, Northampton NN6 7PP, UK

Phone: +44 1327 317557

help@bezares.com

27634, Commerce Oaks Drive
Oak Ridge North, Texas 77385

Italy

BEZARES ITALIA

11, Via Dell'Artigianato
31034 Cavaso del Tomba • Treviso • Italia

Phone: +390 423 544 105

italia@bezares.com

China

ZHEJIANG BEZARES POWER TRANSMISSION CO. LTD.

No. 8. Hongfu East Road, Yaozhuang Town
Zhejiang Province • China

Phone: +86 573 84777638

china@bezares.com

India

ALPHADRIVES INDIA

449/1B, PN Palayam Road, Kanuvai,
Coimbatore • 641108

Phone: +91 75388 74333 / +91 99945 88849 •

ptos@alphadrives.co.in

9910300/18/01/22

HEADQUARTER



Spain (Toledo)

BEZARES S.A

Av. de las Retamas, 145
Poligono Industrial Monte Boyal • 45950
Casarrubios del Monte • Toledo

Tel: +34 91 818 82 97

bezares@bezares.com