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# Complete Mobile Power Solutions



Eaton is the North American master distributor for Bezares USA, a global manufacturer of Power Takeoffs (PTOs), hydraulic pumps, fittings, tanks, valves, and other related mobile power hydraulic components. In addition to distribution services, Eaton provides post-sale service and support through its extensive Roadranger field team.



**PTOs**



**Tanks**



**Valves**



**Pumps**

✓ **Expertise**

Decades of experience in heavy duty power management

✓ **Complete solutions**

Configurations for vocational and specialty applications

✓ **Peace of mind**

Backed by the Roadranger field team

**Eaton's decades of experience and leadership in the development of commercial vehicle transmissions allows us to help customers develop highly customized systems and configurations for vocational needs and specialty applications.**

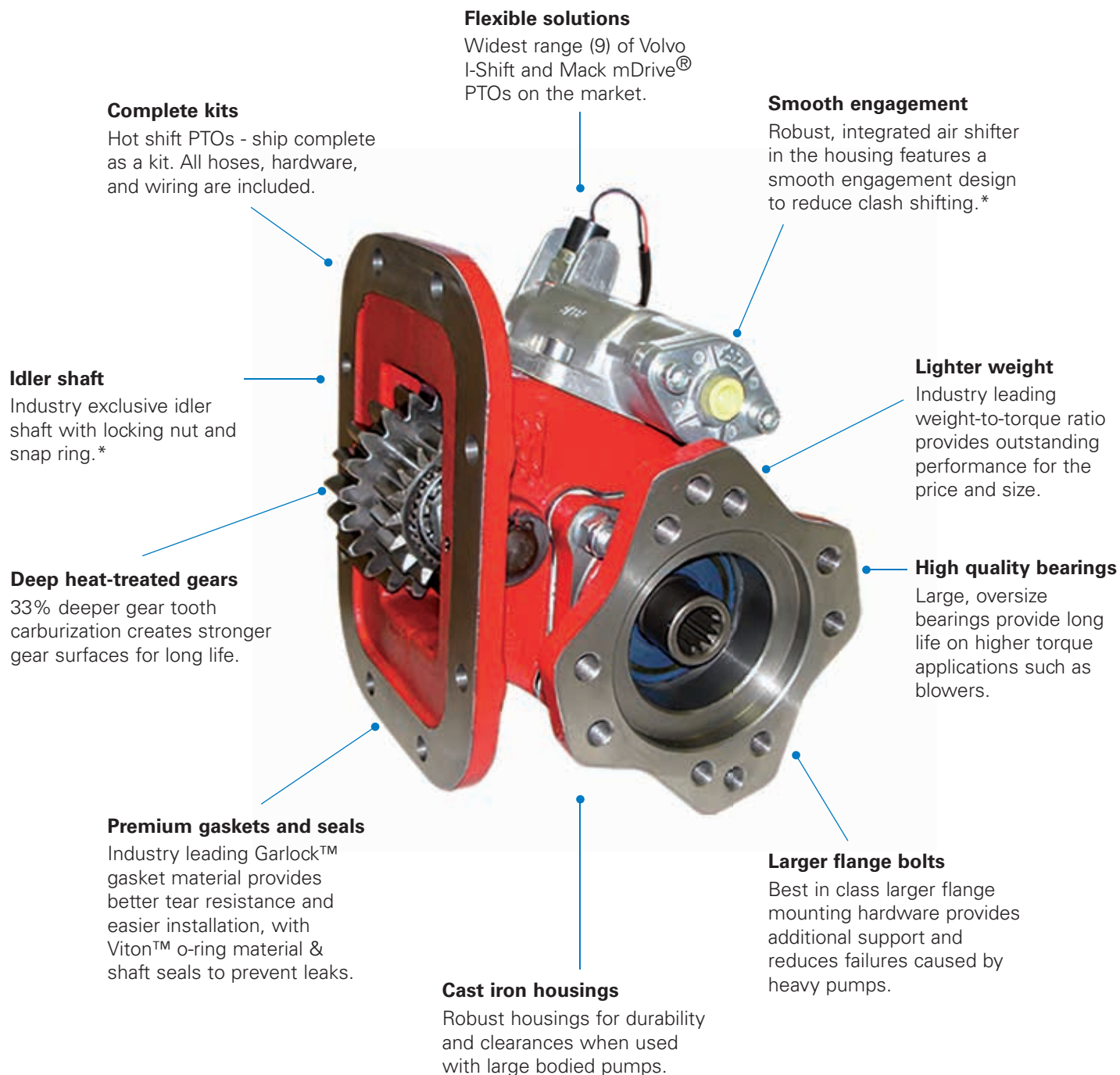


*Powering Business Worldwide*

BACKED BY  
**Roadranger**  
SUPPORT



# Eaton and Bezares: the best value and support



\*Some models

# Bezares PTO Quick Guide

## Manual PTOs: Eaton-Fuller/Rockwell-Meritor/Spicer/Mack

- Six bolt models: 1000/1010
- Six bolt model reversible: 6000
- Eight bolt models: 2000 Standard/Heavy Duty 4100/8500
- Eight bolt model reversible: 6800/8000
- Eight bolt model dual output: 4200/4250

## "Hot shift" PTO for Manuals: Eaton-Fuller/Rockwell-Meritor/Spicer/Mack

- Six bolt model: 3200
- Eight bolt model: 3200 with AD68248 adapter
- Eight bolt model: 3800/3810

## Aisin Transmission (Dodge):

- Hot shift 3300

## Allison Automatic: AT/MT/HT/CLT (SAE 6 bolt)

- Manual PTO: 1000

## Allison Automatic: 1000-2000 Series (SAE 6 Bolt)

- Manual PTO: 1000
- Hot shift PTO: 3300

## Allison World Transmission: MD/HD/3000/4000 series (SAE 10 Bolt)

- 3131 Heavy Duty
- 3151 Constant mesh: HD
- 3252 Low Profile-High Torque
- 3131 with rear pump mounting (3131RP) + bracket and 3190

## Ford Automatic:

- 5R110 (5 Speed) use 3900
- 6R140 (6 Speed) use 3920
- 10R140 (10 Speed) use 3940

## PTOs for Automated Manual Transmissions

### Endurant™ HD & XD

- Bottom (8 bolt) models: 2000, 4100, 8500 series
- Rear (4 bolt) models: 95X Series

### Detroit® DT12®

- C and D Box adapter: SAE 8 bolt
  - Fits DT12-OC, -OHD, -OV, -OD, -OVX
- 120X Series
  - DT12-DA / 14.93-1.0
  - DT12-OA / 14.96-1.0

### PACCAR Automated Transmission

- Bottom (8 bolt) models: 2000, 4100, 8500 series
- Rear (4 bolt) models: 95X Series

### Volvo® I-Shift/Mack® mDRIVE™:

- 1198K03 Single output
- 11106K03 Single output heavy-duty – high speed
- 11107K\*\*\* Dual output heavy-duty – low / high speed
- 1196K03 Driveline only – slow speed
- 11109K52 Dual 1310 – low speed shafts

(\*\*\* = output choices)

# Turnkey Solutions for End Dump Applications

## ► Easier ordering

One part number for a complete installation

## ► Save time

No need to waste time specking a system

## ► Avoid mistakes

All components sized for a seamless installation

## ► Manage inventory

Drop ship direct to install site

## Bezares Wet Kits: The simple solution to a complex problem.

Bezares wet kits provide you with everything for a complete end dump installation, in one part number. Designed for the most popular Eaton Fuller and Eaton Cummins Endurant HD™ applications, our wet kits feature a PTO with Viton™ seals and Garlock™ gaskets for easier installation and fewer leaks, a high-quality roller bearing dump pump for reliability, and an aluminum tank for lighter weight.



# Turnkey Solutions for End Dump Applications

## Eaton Fuller part numbers and contents:

Part Number	Description
<b>K-PTFWKC2U</b>	<b>Standard Fuller End Dump Wet Kit 2-Line Upright Tank</b>
PT2000XCNO11RA	(1) Bottom mount Fuller, air shift, direct mount 110-130% of engine
PTTA-50-UA	(1) 50 Gal upright (behind cab) aluminum tank
PTPBK1000	(1) Dump pump support bracket kit
PTBZ102LAS25	(1) Direct mount air shift dump pump (equal to a C102 or E3X127)
PTHSK2L-16-8	(1) Complete 2 line hose kit (pressure & suction hose plus all fittings)
PTTO126C-10	(1) 10" Console for the in cab control
PTBV125	(1) 1.25" NPT ball valve
PTAK126C	(1) PTO/pump combo control with kick out option
PTM2	(1) Metric stud kit (see note)
<b>K-PTFWKC3U</b>	<b>Standard Fuller End Dump Wet Kit 3-Line Upright Tank</b>
PT2000XCNO11RA	(1) Bottom mount Fuller, air shift, direct mount 110-130% of engine
PTTA-50-UA	(1) 50 Gal upright (behind cab) aluminum tank
PTPBK1000	(1) Dump pump support bracket kit
PTBZ102LAS25	(1) Direct mount air shift dump pump (equal to a C102 or E3X127)
PTHSK3L-12-12	(1) Complete 3 line hose kit (pressure & suction hose plus all fittings)
PTTO126C-10	(1) 10" Console for the in cab control
PTAK126C	(1) PTO/pump combo control with kick out option
PTF6FE	(2) 25 Micron spin-on filter element
PTF415	(1) Dual filter head
PTBV125	(1) 1.25" NPT ball valve
PTM2	(1) Metric stud kit (see note)
<b>K-PTFWKC2S</b>	<b>Standard Fuller End Dump Wet Kit 2-Line Saddle Tank</b>
PT2000XCNO11RA	(1) Bottom mount Fuller, air shift, direct mount 110-130% of engine
PTTA-50-SA	(1) 50 Gal saddle (round frame mount) aluminum tank
PTPBK1000	(1) Dump pump support bracket kit
PTBZ102LAS25	(1) Direct mount air shift dump pump (equal to a C102 or E3X127)
PTHSK2L-16-8	(1) Complete 2 line hose kit (pressure & suction hose plus all fittings)
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PTTO126C-10	(1) 10" Console for the in cab control
PTAK126C	(1) PTO/pump combo control with kick out option
PTF6FE	(2) 25 Micron spin-on filter element
PTF415	(1) Dual filter head
PTBV125	(1) 1.25" NPT ball valve
PTM2	(1) Metric stud kit (see note)

Note: All wet kits will include an SAE stud kit in the PTO box as well as a metric stud kit for FR/FRO/FRF/FROF Series Fuller transmissions.

## Endurant part numbers and contents:

Part Number	Description
<b>K-PTEWKB2U</b>	<b>Endurant HD End Dump Wet Kit 2 Line Upright Tank</b>
PT2010XBN751RA	(1) Bottom mount, air shift, direct mount 110-130% of engine
PTTA-50-UA	(1) 50 Gal upright (behind cab) aluminum tank
PTPBK1000	(1) Dump pump support bracket kit
PTBZ102LAS25	(1) Direct mount air shift dump pump (equal to a C102 or E3X127)
PTHSK2L-16-8	(1) Complete 2 line hose kit (pressure & suction hose plus all fittings)
PTTO126C-10	(1) 10" Console for the in cab control
PTBV125	(1) 1.25" NPT ball valve
PTAK126C	(1) PTO/pump combo control with kick out option
<b>K-PTEWKB3U</b>	<b>Endurant HD End Dump Wet Kit 3 Line Upright Tank</b>
PT2010XBN751RA	(1) Bottom mount, air shift, direct mount 110-130% of engine
PTTA-50-UA	(1) 50 Gal upright (behind cab) aluminum tank
PTPBK1000	(1) Dump pump support bracket kit
PTBZ102LAS25	(1) Direct mount air shift dump pump (equal to a C102 or E3X127)
PTHSK3L-12-12	(1) Complete 3 line hose kit (pressure & suction hose plus all fittings)
PTTO126C-10	(1) 10" Console for the in cab control
PTAK126C	(1) PTO/pump combo control with kick out option
PTF6FE	(2) 25 Micron spin-on filter element
PTF415	(1) Dual filter head
PTBV125	(1) 1.25" NPT ball valve
<b>K-PTEWKB2S</b>	<b>Endurant HD End Dump Wet Kit 2 Line Saddle Tank</b>
PT2010XBN751RA	(1) Bottom mount, air shift, direct mount 110-130% of engine
PTTA-50-SA	(1) 50 Gal saddle (round frame mount) aluminum tank
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PTAK126C	(1) PTO/pump combo control with kick out option
PTF6FE	(2) 25 Micron spin-on filter element
PTF415	(1) Dual filter head
PTBV125	(1) 1.25" NPT ball valve

Note: All wet kits will include a metric stud kit for Endurant HD PTOs

# Mechanical PTOs



### 1000/2000 Series

Compatible with the most common transmissions in the market. The 1000 / 2000 series PTOs feature a wide range of input gear, ratio, output, and shifter options. All cast iron construction with large 12mm flange bolts to support some of the larger pumps in the market. Also available in a deep mount 1010 and 2010 series.



### 4100 Series

A heavy-duty PTO with a 475 ft./lb. torque rating, in a lightweight and compact package. It's able to fit applications that require high torque demands and is smaller and lighter than competitive products for nearly all applications.



### 4200/4250 Series

A dual output, eight bolt, heavy-duty PTO. Featuring two independently air operated outputs, with a variety of ratio and output combinations. The 4250 is a highly versatile PTO for many applications where two PTOs would otherwise be required. Exclusively for Eaton Fuller transmissions.



### 6000/6800/8000 Series

Medium-duty 6 bolt (6000), 8 bolt (6800), and heavy-duty 8 bolt (8000) forward and reversible PTOs. Factory air shift only, with 1.25" round keyed shaft output. A wide variety of input gears are available.



### 8500 Series

Super heavy-duty PTO with a variety of output and ratio options to fit almost any application. Compared to competitive models, the 8500 is 10-20% lighter for equivalent performance. It's the perfect PTO for applications requiring maximum torque and horsepower capabilities.

PTO Series	Intermittent Service		Continuous Service*		Weight (Lb)
	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	
1000	250	49	178	35	32
2000	250	49	178	35	34
4100	470	90	340	65	46
4200 4250	420	80	300	57	75
6000	210	30	150	30	37
6800	210	30	150	30	40
8000	500	500	400	95	88
8500	500	95	400	76	64

\*Continuous service is defined as more than 5 minutes of operation every 15 minutes.



# Hotshift PTOs (Allison)



### 3131

The 3131 series is the newest heavy-duty PTO from Bezares, designed and developed for the most grueling applications on the market today. This PTO has maximum torque ratings of 500 ft./lbs. and 97 HP @ 1000 RPM. The 3131 features a single pressure hose, with internal lubrication to decrease install time. A wide range of gear ratios and output options are available, including a rear pump option (model 3131RP).



### 3131RP

Same characteristics as 3131, but for rear pump installations.

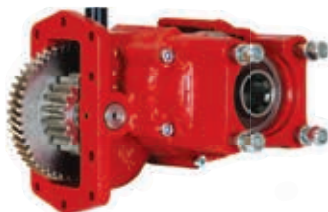
### 3190

The 3190 output adapter for the rear pump option gives you the versatility of being able to change your output from a SAE B, SAE BB, SAE C, or even DIN 5462 in a very short time. This will also lessen your need to stock dozens of PTO models.



### 3151 Series

Constant mesh 10 bolt PTO models for Allison and Caterpillar series transmissions. These PTOs have a wide range of ratios and outputs.



### 3252

A new, medium-duty, low-profile PTO, engineered to assist with the space constraints that are faced in modern trucks. An internal lubrication design eliminates one hose and reduces install time, saving unnecessary cost. A wide range of output and gear ratio options allows the 3252 to fit many applications.

PTO Series	Intermittent Service		Continuous Service*		Weight (Lb)
	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	
3131	500	97	400	78	60
3151	500	97	400	78	42
3252	410	78	310	59	53

\*Continuous service is defined as more than 5 minutes of operation every 15 minutes.

# Hotshift PTOs



### 3300 Series Allison / Aisin

This versatile, 6 bolt, hotshift PTO is designed for the 1000/2000 Allison transmission family, and Aisin automatic transmissions. The 3200 (manual transmission) and 3300 series are offered with multiple ratios and outputs, as well as electric over hydraulic controls.

### 3200 / 3800 Series Eaton Fuller and more...

The 3800 series PTO was developed based on the 3200 series, which has been proven in the market for over a decade. This 8 bolt PTO meets the demands of the market for a hot shift PTO for the 8 bolt aperture. This PTO features air shifting, and a wide range of ratios and outputs.

### 3900/3920 Series Ford

Our 3900 and 3920 series PTO's have been designed for the Ford F-Series Torqshift® transmissions. Both PTO's have both a direct and a remote mount output option.

### 3940 Series Ford

The 3940 series PTO fits the Ford F-Series 10-speed Torqshift automatic transmission. A DIN 5462 output shaft and special adapters provide versatility and allow for direct mounting of high pressure pumps, such as a bent axis piston pump, directly to the PTO. Unique profile saves up to an hour of installation time.

PTO Series	Intermittent Service		Continuous Service*		Weight (Lb)
	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	
3200 3300 3800	250	49	178	35	30
3920	200	27	140	27	
3900	120	16	86	16	
3940	230	44	160	30	36

\*Continuous service is defined as more than 5 minutes of operation every 15 minutes.



**Easily convert standard DIN output with additional bolt-on adapters:**

Description	Part Number
Ford 3940 PTO with DIN output	PT3940POE783DA
3/4" 11T Adapter	PT806635
5/8" 9T Adapter	PT806735
7/8" 13T Adapter	PT806835

# Rear Mount PTOs

## Endurant™ HD

95X Series is the lightest and most compact rear counter shaft PTO for Endurant in the heavy-duty segment. Offset design improves position of attached pumps.



## Detroit® DT12®

120X Series is a two-gear PTO for the DT12. Aluminum housing marries heavy-duty strength with light weight and is designed to improve clearance and ease of installation.



PTO Series	Intermittent Service		Continuous Service*		Weight (Lb)
	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	Max. Torque (Lb. FT)	Max. Power (HP @ 1000rpm)	
95X10	382	95	305	85	23.6
95X13	293		235	66	
95X15	254		205	58	
120X DIN	406	120	305	85	24.2
120X SAE BB	325	92	290	80	
1198K03	309	60	221	42	32
1196K03	609	118	435	84	17
11111K03	361	70	258	50	26.4
11112K03	464	90	331	64	26.4
11113K03					
11109K52	361/310	70/60	258/221	50/43	72
11107K***	413/442	80/85	332/369	64/71	88
11106K03	413	80	295	57	40
7022904	405	78	331	64	27.5

\*Continuous service is defined as more than 5 minutes of operation every 15 minutes.

## Volvo® I-Shift Mack® mDRIVE™

Bezares features the largest variety of rear mount PTOs to fit Volvo I-Shift and Mack mDRIVE transmissions on the market. With 9 models, we can help you match the perfect PTO for the application required.



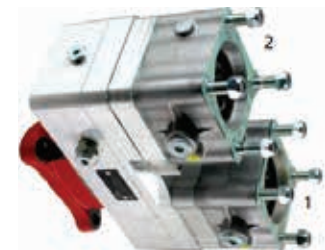
1198K03



1196K03



11111K03 / 11112K03 / 11113K03



11109K52



11107K\*\*\*  
(\*\*\* = output choices)



11106K03



7022904

# European Style PTOs Worldwide PTO offering



Hino



Nissan



Isuzu



Toyota



Mercedes



Mitsubishi



Scania



ZF

## Adapters

### DIN to SAE Adapters

Convert easily from DIN output to any SAE output needed.



### Geared Adapters

Clear mounting obstacles or switch PTO output rotation with Bezares' six bolt geared adapters. Offered in a 45 degree angle or straight option, these can be used with any spur cut input gear that Bezares has available. A 22 degree offset adapter is also available, which has more flexibility for some helical cut gears.





# Piston Pumps and Motors



## FR Bent Axis Piston Pump

Fixed displacement pumps and motors with a compact design that enables installation in almost all applications. Available in ISO 4 and SAE B / BB versions.

Motors with the same flow rates also available.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed RPM
5	1.16	5800	2800
8	1.85		2600
11*	2.44		2600
13	3.05		2300
16*	3.65		2300
21*	4.88		2000
29*	6.71		1900

\* Standard models



## MR Bent Axis Piston Pump

Fixed displacement piston pump designed for use in medium/high pressure applications. Its small body allows installation in reduced spaces. Available in ISO 4.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed RPM
11	2.4	5076	2400
12	2.7	4350	1600
16	3.65	5076	2200
21	4.8	4350	1900
29	6.68	5076	1800
33	7.54	4350	1700



## FRV Variable Displacement Pump

Ideal for truck cranes with load-sensing systems, it provides the required flow at the right time. It incorporates a manual flow control, reducing the number of control valves necessary. Available in ISO 4.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed RPM
22	5.13	5076	2500



## FR2 Twin Flow Piston Pump

The FR2 is an axial piston, twin flow piston pump which provides a variety of solutions for different job applications. This high performance, long life pump is designed to have a smaller footprint for better on-vehicle fit, with fewer rotating parts for long life and durability under continuous duty cycles.

Rotation		Clockwise
Displacement (cu in/rev)	Connection A	3.38
	Connection B	3.17
Max. selfpriming speed RPM	2-1/2" Hose ø	1400
Pressure PSI	Max continuous	4350 (300)
	Max peak (5 sec.)	5075 (350)
Power HP	Cont. (A + B)	80
	Max. int (A + B)	106
Weight Lb		42 [19 Kg]

# Bushing Pumps



## BES Series

Lightweight aluminum body design gear pump with left hand rotation for those low to medium flow systems. Compact design size makes it ideal for direct mounting to PTO's in small envelopes on today's chassis. 2 bolt SAE A flange, with either 3/4"-11 tooth or 5/8"-9 tooth shafts available. Rear SAE O-Ring ports standard.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed RPM
4	.98	4060	4000
7	1.71	2900	2500
9	1.95	3625	3000



## BEM Series

A birotational pump with a cast iron body. Rear and side ports provide greater versatility and simplify installation. Available with ISO 4-bolt and SAE 2/4-bolt flanges. UNI 3.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed RPM
6	1.4	4400	2000
8	1.77	4200	
11	2.5	3800	
12	2.8	3600	



## BEL Series

Birotational pump with a cast iron housing, giving it great resistance to high pressures and RPMs. Available with ISO 4-bolt and SAE 2/4-bolt flanges. Available in ISO 4 and UNI 3 versions.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed RPM
13	3.05	4300	2750
16	3.66	4200	
19	4.27	4000	
22	4.88	3600	2500
26	6.1	3200	
30	7.02	3200	



## BE XL Series

A larger model pump in cast iron for the highest working pressure performance. Available with ISO 4-bolt and SAE 2/4-bolt flanges.

GPM @ 1000 RPM	Displacement (cu In/rev)	Max. Pressure P3 (PSI)	Max. Speed (RPM)
23	5.4	4200	2500
27	6.3		
31	7.2		
35	8.1	3900	2000
39	9	3600	

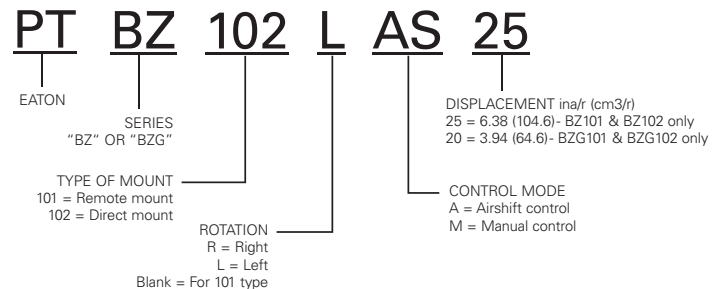
# Dump Pumps

A full range of high quality dump pumps in stock for quick shipping, including small to full size series; manual or air shift. Direct mount SAE B 4-Bolt, or twin shaft remote mount available on all models.



Eaton Part No.	Muncie Part No.	Parker Part No.	Permco Part No.	Metaris Part No.	Description
PTBZ102LAS25	E3XA1270BPRL or E2X	C102-D-25-1-AS	DMD-25-Z-L-AS-25	MH102-C-25-L-AS	SAE 4-Bolt 7/8" 13 Spline Shaft, Direct Mount, Air Shift, Rear Pipe Ports, CCW Rotation, 2 or 3 line (for most Eaton/Fuller manual transmissions)
PTBZ102RAS25	E3XA12702BPRR or E2X	C102-D-25-AS	DMD-25-Z-R-AS-25	MH102-C-25-R-AS	SAE 4-Bolt 7/8" 13 Spline Shaft, Direct Mount, Air Shift, Rear Pipe Ports, CW Rotation, 2 or 3 line (for most Allison and some Mack transmissions)
PTBZ101AS25	E3A12701RPRB or E2X	C101-D-25-AS	DM-640-25-ZR-M-AS	MH101-C-25-AS	1" Dual Shaft w-1/4" Key, Remote Mount, Air Shift, Rear Pipe Ports, 2 or 3 line (must have driveline from PTO to operate pump)
<b>Note: To order the Eaton/Bezares Dump Pump in a Manual Shift, replace "A" with "M" in part number. Above pumps are 27 GPM @ 1000 Pump RPMs</b>					
PTBZG102RMS20	S2LD11502BPRR	G102-1-2.0-R-4S	DMD-400-20-XR-200	MH102-G-2-R	SAE 4 Bolt 7/8" 13 Spline shaft, Direct Mount, Lever Shift, Rear Pipe Ports, CW Rotation, 2 or 3 line (for Allison transmissions with single axle dump body)
PTBZG102LMS20	S3LD11502BPRL	G102-1-2.0-L-4S	DMD-400-20-XL-200	MH102-G-2-L	SAE 4 Bolt 7/8" 13 Spline shaft, Direct Mount, Lever Shift, Rear Pipe Ports, CCW Rotation, 2 or 3 line (for manual transmissions with single axle dump body)
PTBZG10120	S3LD11501RPRB	G101-1-2.0	DMD-400-20-ZR-200	M101-G-2	1" Dual Shaft 1/4" key, Remote Mount, Lever Shift, Rear Pipe Ports, 2 or 3 line (must have drive line from PTO to operate pump)
<b>Note: Above pumps are 15 GPM @ 1000 Pump RPMs. Change "M" to "A" in part number to order with air shift.</b>					

Flow- Power @ 2500 PSI Speed (RPM)	BZG 101/102	BZ 101/102
	Flow GPM	
900	13.5	22
1200	18.5	30
1500	23.5	39
1800	29	47
2100	34	55
2400	39	51



Main Data	BZG 101/102	BZ 101/102
Gear Width	2"	2.5"
Displacement (In 3/rev)	3.94	6.38
Max. Continuous Pressure	2500	2500
Speed (RPM)	600-2400	600-2400

# Vane Pumps and Motors



## Vickers Design

A full range of TDZ models based on Vickers designs. Both complete units and all spare parts are 100% interchangeable with models manufactured by Vickers.



## Denison Design

A full range of TDZ models based on Denison designs. Both complete units and all spare parts are 100% interchangeable with models manufactured by Denison.



## Spare Parts

A full range of TDZ spare parts for Bezares/TDZ, Denison and Vickers vane pumps and motors.

Type	Series	Displacement (cu In/rev)	Max. RPM	Max. Pressure (PSI)
<b>DENISON DESIGN</b>				
Single Vane Pump (Very High pressure)	T7B, T7DSW	0.37 - 9.70	3600	4641
Single Vane Pump	T6C, T6D, T6E,	0.67 - 16.48	2800	3988
Double Vane Pump (Very High pressure)	T7BB, T67CB, T67DB, T67EB	0.55 - 16.48	2800	4641
Double Vane Pump	T6CC, T6DC, T6EC, T6ED	0.67 - 16.48	2800	3988
Triple Vane Pump (Very High pressure)	T67DBB, T67EDB	0.67 - 16.48	2800	3988
Triple Vane Pump	T6DCC, T6EDC	0.67 - 16.48	2800	3988
<b>VICKERS DESIGN</b>				
Single Vane Pump	V10, V20	0.06 - 0.79	4800	2538
Single Vane Pump	20V, 25V, 35V, 45V	0.12 - 4.39	2500	3045
Double Vane Pump	2520V, 3520V, 3525V	0.12 - 2.75	2500	3045
Double Vane Pump	4520V, 4525V, 4535V	0.12 - 4.39	2500	3045
Thru Drive Vane Pump	25VT, 35VT, 45VT	0.49 - 4.39	2500	3045
Single Vane Pump	V10F, V20F, VTM42	0.06 - 0.79	4800	2538



# Control and Tipper Valves



## 9030890

The 9030890 valve is an air operated dual pressure tipping valve with two independent operating pressures. This valve is a perfect fit for a walking floor and dump combination, at a fraction of the cost of other options.



## 9058090

Air operated single pressure tipper valve. Perfect fit for applications where a dump pump is not applicable due to clearance issues with certain transmissions, or most rear mount PTO applications where supporting the pump requires extensive fabrication and increased labor costs.



## 901211

The 901211 is a two position, two selector valve that offers a simple means of directing oil flow into two separate hydraulic circuits. It is air operated with an open center in neutral position.



# Cab Controls

Bezares offers a variety of in-cab controls for PTOs. Three different size tower consoles for combo control valves are also available. Controls include standard PTO on/off only PTAK101X air kit, PTAK126C with kick out option, PTAK127C without kick out, and PTAK128C with a feathering option.

LV series mechanical lever controls, which are a high quality lever shift option in three different lengths, are offered for applications where air shift is not an option.



Metering PTO/Dump Combo Valve



2/3 Ways Pneumatic Control



Pneumatic Controls

## Mounting Towers and Brackets

for 2- and 3-way Pneumatic Control



for Control Valve without PTO Switch and Metering PTO/Dump Combo Valve



# Oil Tanks

We offer a full line of tanks to fit all application needs. Our tanks are available in aluminum, steel, and poly ranging in capacities from 7 to 100 gallons. Styles include upright mount, saddle mount, and square side mount, with special order options including a sight gauge, two inch ports, and stainless steel straps.



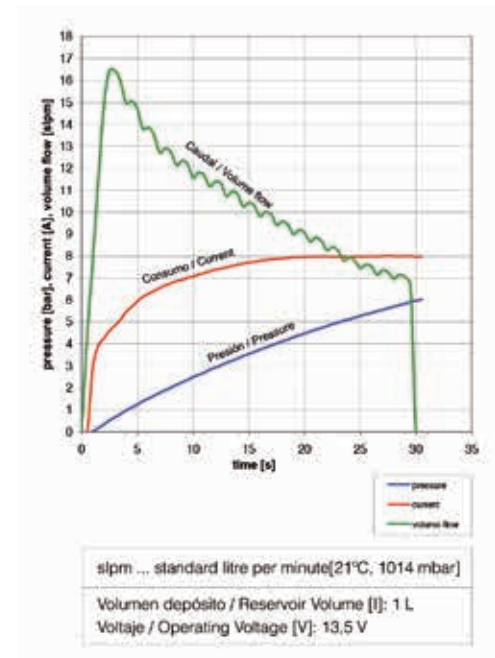
Upright



Saddle

# Pneumatic Compressors

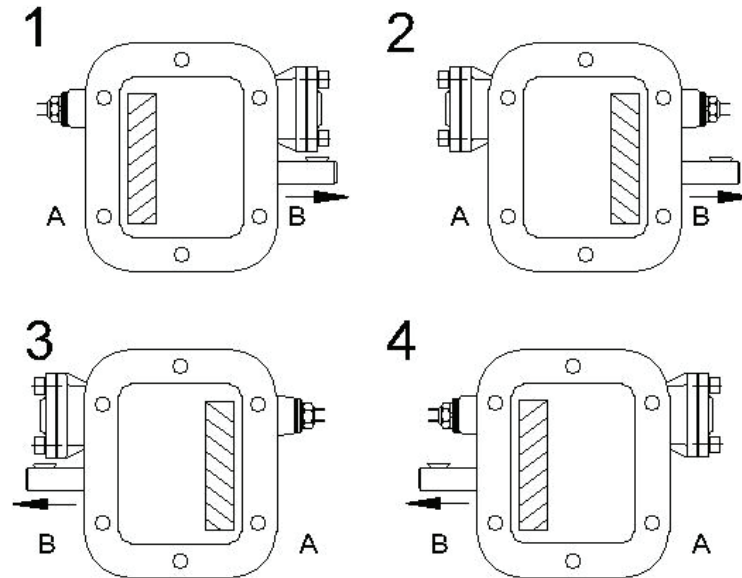
The Bezares mini air compressor is a 12 Volt, easy to install, completely self-contained, and very low maintenance model. Compact design allows for easy installation on most trucks, even inside the driver compartment. Excellent solution for small vehicles with no factory air option.



# Assembly Arrangement

## Assembly Arrangements

- 1 = Right, forward
- 2 = Right, rear
- 3 = Left, forward
- 4 = Left, rear



## Suggested PTO Percentages

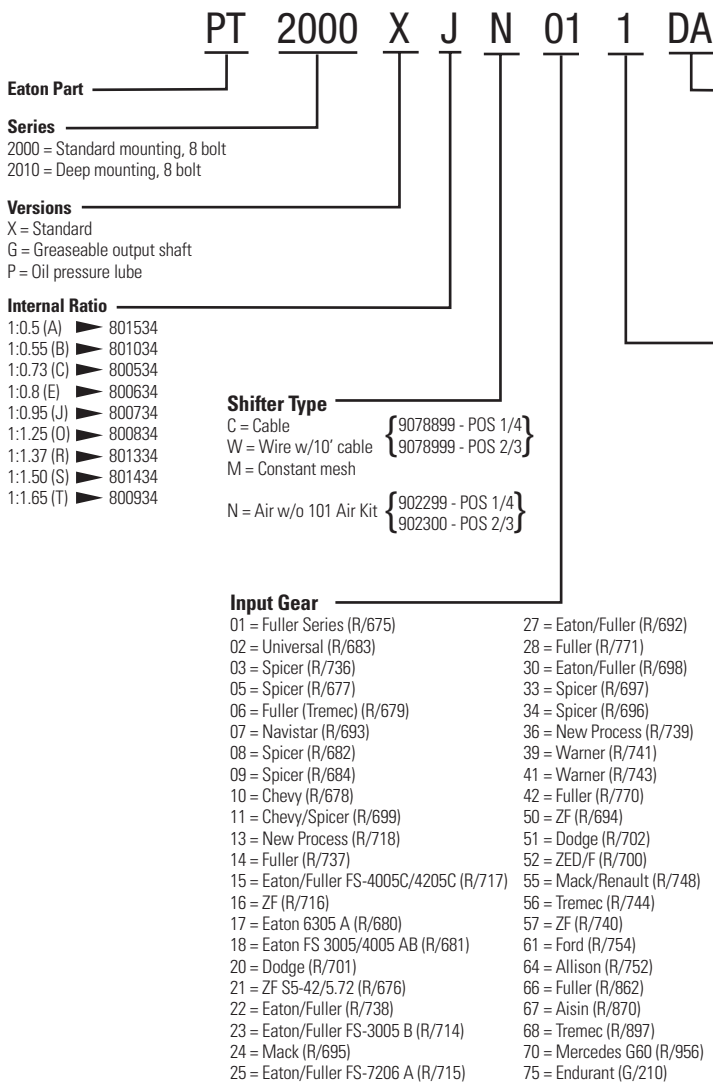
Type	Engine rpm	PTO %
Aerial ladder and platforms	800-1500	80-130
Aerial bucket man lifts	800-1200	80-130
Aerial cranes digger derricks	800-1200	80-130
Auto carriers	idle	125-210
Auto tow trucks	idle-1200	90-120
Heavy-Duty tow trucks	1000-1500	90-130
Air compressors		
85 ft per min capacity	1200-2000	100
125 ft per min capacity	1200-2000	100
180 ft per min capacity	1200-2000	100
Blowers Pneumatic	1500-3500	150-250
Dump Bodies		
small single axle	1000-2000	50-80
medium single-tandem	1000-2000	80-100
large tri-axle	1000-2000	60-130
dump trailers	1000-2000	80-130
dump trailers with moving floor	1000-1800	80-130
Hydraulic Pumps		
1-15 gpm	idle-3000	80-130
16-35 gpm	idle-3000	80-130
36 + gpm	idle-3000	80-130
Product pumps	See mfg for correct flow	
Refuse	1000-1800	80-130
Snow plows	1000-3000	60-90
Spreaders mechanical	1200-2500	45-60
Spreaders hydraulic	1200-2500	75-90
Tailgates	idle	60-75
Walking floors	1000-1500	125-175
Winches	(see hydraulic pumps)	

**Note: Always check manufacturer for correct specifications and flow requirements**



## Part Number Nomenclature

### Nomenclature Example (2000 Series):





Exclusively Sold  
& Serviced in  
North America by:



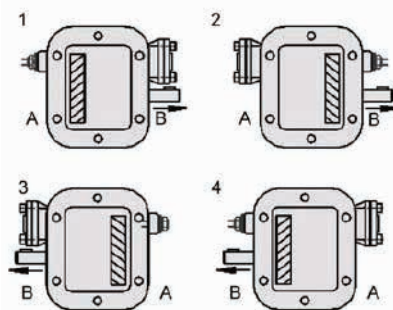
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# Authorized Builder Program



The Bezares Authorized Builder Program is a great opportunity to become a premier mobile power expert in your market.

By becoming an authorized builder, you will have the expertise and resources to provide customers fast, customized solutions supported by a factory warranty.

As an authorized builder you immediately become a member of our key partner network and start to enjoy the benefits of the program.

## Additional benefits:

- ✓ 1st choice referrals from Eaton
- ✓ More build flexibility = less inventory needed and faster turns
- ✓ Minimize customer downtime by offering quick solutions

FEATURES	Partner +	Partner	Associate
Hands-on training and certification	✓	✓	✓
Authorized builder promotional and marketing materials	✓	✓	✓
Co-op marketing funds	✓	✓	✓
Factory-approved warranty certification	✓	✓	✓
Automatic enrollment in Eaton's Gold incentive program	✓	✓	✓
Eaton social media posting	✓	✓	✓
Rebates	✓	✓	
In-store banner and POS display options	✓	✓	
Enhanced listing in Eaton distributor locator	✓		
Featured story on EatonPartsOnline.com	✓		

## How to Partner

You can qualify for one of three tiers of participation (based on your purchase levels) with increasing benefits and marketing support:

### Partner Plus Level

- Total annual product purchases of \$250k or more
- Receive 2.5% annualized purchase rebate
- Qualified for \$2,500 Co-op/Marketing Support and other benefits listed

### Partner Level

- Total annual product purchases of \$150k or more
- Receive 1.5% annualized purchase rebate
- Qualified for \$1,500 Co-op/Marketing support and other benefits listed

### Associate Level

- Total annual product purchases of \$50k or more
- Qualify for \$500 Co-op/Marketing support and other benefits listed

# PTO Application Worksheet



Distributor: \_\_\_\_\_  
 Sales Person: \_\_\_\_\_  
 Date: \_\_\_\_\_

Customer: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_

1: What is the make and model of the customers transmission?

\_\_\_\_\_

2: What are you going to drive with this PTO? (i.e. pump, blower, etc)

\_\_\_\_\_

3: What is the operating speed you need to run your driven equipment?

\_\_\_\_\_

4: What is the horsepower you need to run your driven equipment?

\_\_\_\_\_

5: What is the approximate engine speed you will be turning in RPMs when working the driven equipment?

Equipment speed needs to be expressed as a % of engine speed during duty cycle.

Driven equipment ÷ Engine speed = App. PTO %

\_\_\_\_\_

6: Shaft rotation of driven equipment in relation to engine rotation.

\_\_\_\_\_ Opp.  
 \_\_\_\_\_ Eng.

7: Type of connection for PTO to driven equipment.

\_\_\_\_\_ Driveshaft  
 \_\_\_\_\_ Direct Mount Pump  
 \_\_\_\_\_ Pulleys and/or belts

8: Mounting options:

\_\_\_\_\_ Left  
 \_\_\_\_\_ Right  
 \_\_\_\_\_ Bottom  
 \_\_\_\_\_ Top  
 \_\_\_\_\_ Countershaft

9: Duty Cycle

\_\_\_\_\_ Intermittent  
 \_\_\_\_\_ Continuous

10: PTO speeds or reverse requirements.

\_\_\_\_\_  
 \_\_\_\_\_

11: Using the information in items 3 & 4, determine the intermittent torque requirements of the driven equipment using this formula:

$$(HP \times 5252) \div RPM = lb. ft.$$

$$T = \text{_____} lb. ft. (Intermittent)$$

Note: Continuous duty is defined as more than 5 minutes of operation every 15 minutes.

12: If this is a continuous operation as defined above in item 11 divide your torque value by .7. This gives you the torque requirement for continuous operation.

$$\text{_____} lb. ft. \div .7 = \text{_____} (continuous torque)$$

**Use the information you have gathered and refer to your BZ Application Catalog.**

**Technical Service: 1-800-826-HELP (4357)**

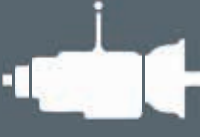
Insert Your Numbers From The Application Catalog

_____	_____	_____	_____	_____	_____	_____	_____
Eaton	PTO Series	Special Options	Gear Ratio	Shifter Type	Input Gear	Arrangement	Output
<b>PT</b>	<b>1000</b>	<b>X</b>	<b>J</b>	<b>A</b>	<b>01</b>	<b>1</b>	<b>RA</b>


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ELocker® ELocker4®

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BULK KITS  
value for the money  
REBUILD KITS

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ECA CLUTCH REMANUFACTURED  
ADVANTAGE AUTOMATED  
430mm ANGLE RING INSTALL KITS

TVS® Technology  
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**SUPERCHARGERS** R2300  
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