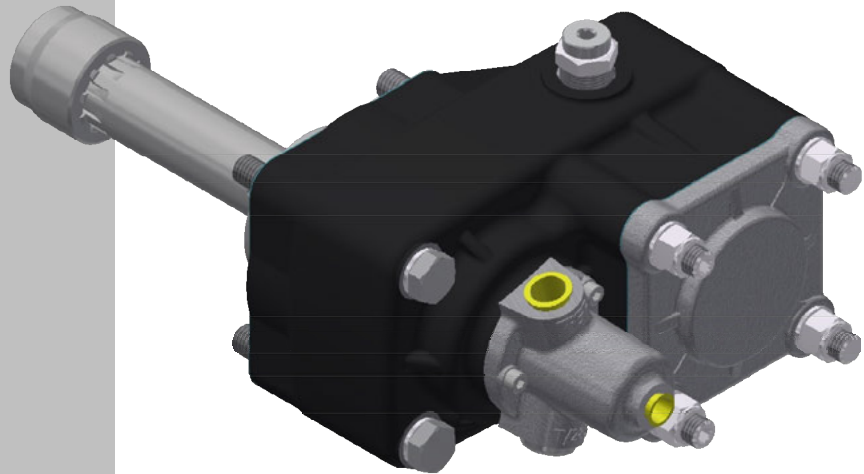


# ES(0)-1XX09

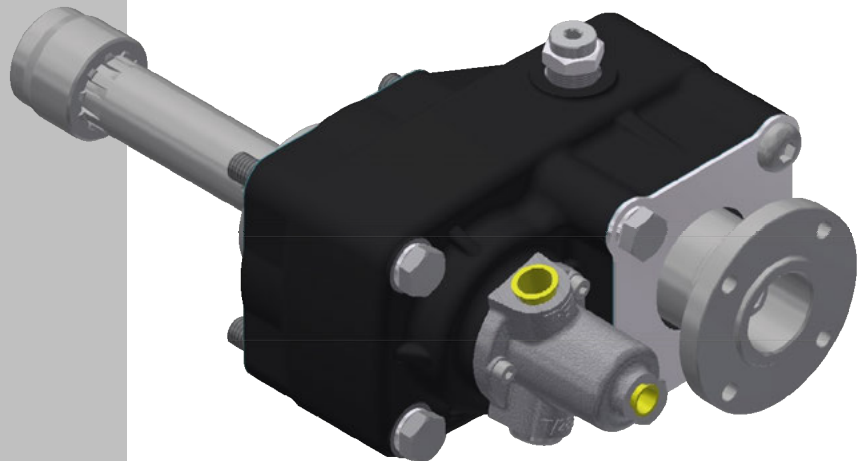
Ratio 1:1,04

## POWER TAKE OFF

Bz PTO P/N X8883541



Bz PTO P/N X8883923



bezares.com ◉ +34 91 818 82 97  
bezares@bezares.com

Original Manual



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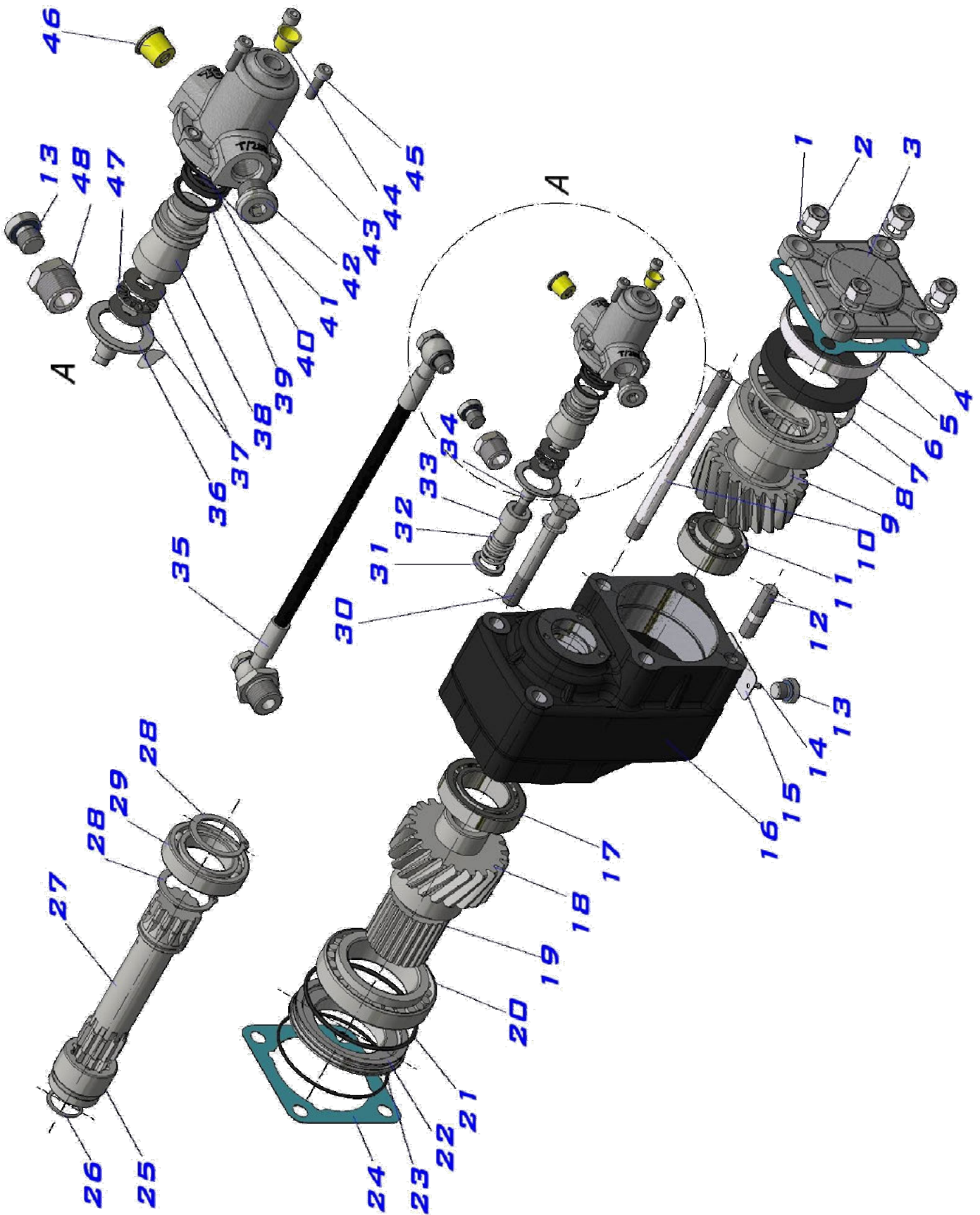
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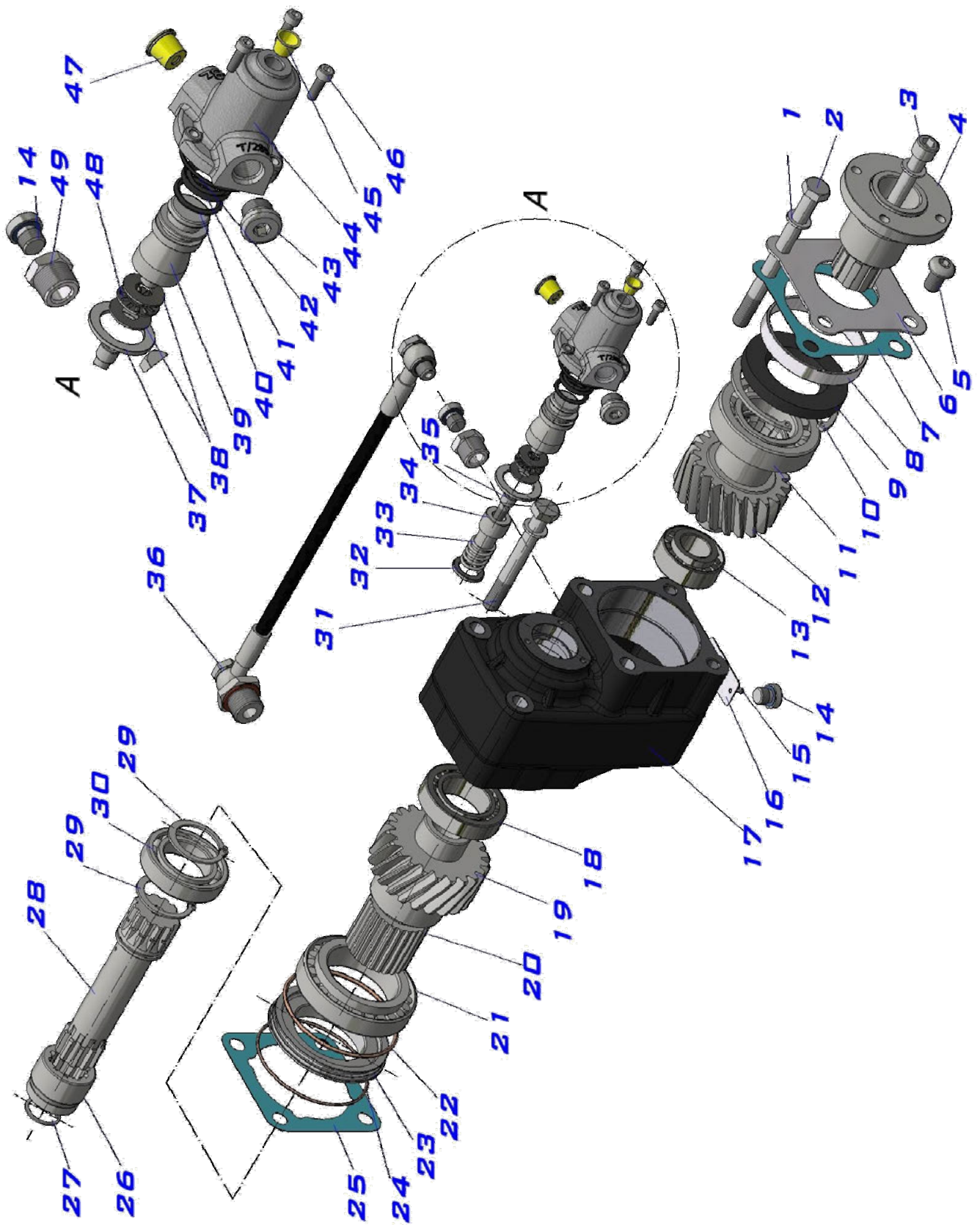
1.1 Exploded View X8883541



## 1.2 List of materials X8883541

ITEM	QT.	DESCRIPTION	DIMENSIONS	PART NUMBER
1	6	WASHER (TYPE DIN 125). ZINC PLATED	12.5x19.8x2	102090009
2	4	SELF LOCKING NUT M12 DIN 985 8.8 ZINC PLATED	M12 -1.75	119020003
3	1	BLANK COVER		208010711
4	1	GASKET		108010038
5	1	GUIDE FOR PUMP		211133091
6	1	SEAL BA SL VITON	45X85X10	112090025
7	1	CIRCLIP DIN 472	Ø 85	101020016
8	1	TAPER ROLLER BEARING 32209A.	45X85X24.75	113300015
9	1	BOTTOM GEAR 1:1.04		201029112
10	2	STUD ZINC PLATED & SEALED	M12-1.75 L=175	117020133
11	1	TAPER ROLLER BEARING 33205.	25X52X22	113300027
12	2	STUD ZINC PLATED L=49	M12-175 (16/25)	117020026
13	2	ALLEN HEAD PLUG 1/4" BSP WITH O-RING		118020033
14	2	RIVET DIN 7337		100050003
15	1	IDENTIFICATION PLATE SPECIAL FOR EATON		126020021
16	1	HOUSING PTO EATON		202112534
17	1	TAPER ROLLER BEARING 32008 -XA	40X68X19	113300012
18	1	UPPER GEAR 1:1.04		201029122
19	1	SLIDING COUPLING		207010952
20	1	TAPER ROLLER BEARING 32012X	60X95X23	113300049
21	1	O-RING VITON	90X3	107100066
22	1	GUIDE BUSH		211133082
23	1	O-RING VITON	90X2	107100068
24	1	GASKET		108010176
25	1	ENGAGING HUB		207011041
26	1	CIRCLIP DIN 472	Ø 28	101020028
27	1	ADAPTER SHAFT		203055201
28	2	CIRCLIP DIN 471	Ø 40	101010006
29	1	BALL BEARING 6008	40X68X15	113040003
30	2	SCREW DIN 931 8.8 ZINC PLATED & SEALED	M12X100	116020027
31	1	WASHER		211026433
32	1	SPRING SHORT CENTRAL PISTON		109010030
33	1	GUIDE FOR SCREW		211132251
34	1	SCREW FOR CENTRAL PISTON		214122211
35	1	LUBRICATION HOSE		9085999
36	1	LOCK WASHER		209110461
37	2	AXIAL DISC AS 1024		114010011
38	1	PISTON		204010881
39	1	O-RING VITON	22X3	107100002
40	1	PNEUMATIC COLLAR VITON	20X28X4	105010018
41	1	O-RING	40X2	107010061
42	1	ALLEN HEAD PLUG WITH O-RING	M16X1.5	118020056
43	1	COVER FOR CENTRAL PISTON		208012851
44	1	PLASTIC PLUG	M12	118010005
45	3	SCREW DIN 912 8.8	M5X15	116010045
46	1	PLASTIC PLUG	½"	118010002
47	1	AXIAL BEARING AXK1024		114050002
48	1	LUBRICATION CONNECTOR	M22-1.5	202028103

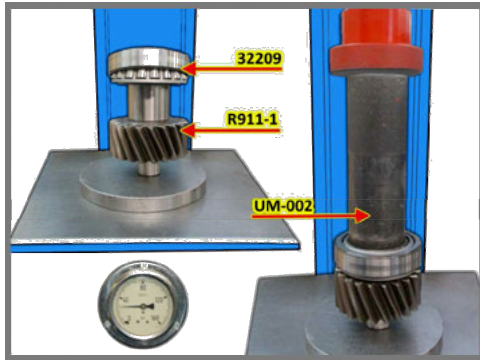
1.3 Exploded View X8883923



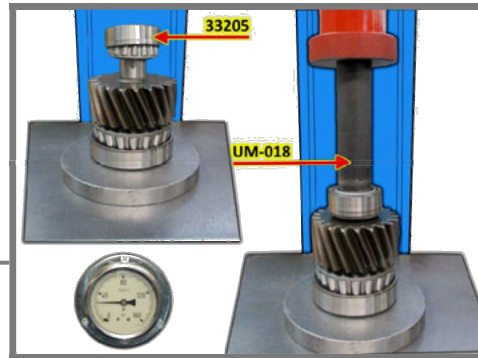
## 1.4 List of materials X8883923

ITEM	QT.	DESCRIPTION	DIMENSIONS	PART NUMBER
1	5	WASHER (TYPE DIN 125). ZINC PLATED	12.5x19.8x2	102090009
2	2	SCREW DIN 931 8.8 ZINC PLATED & SEALED	M12X140	116020068
3	1	SCREW DIN 912 8.8 ZINC PLATED	M12X90	116010249
4	1	TRANSMISSION FLANGE	DIN 90	206110651
5	2	SCREW DIN 7380	M12X20	116130001
6	1	SEAL STOP PLATE		209102611
7	1	GASKET		108010038
8	1	GUIDE FOR PUMP PTO		211133091
9	1	SEAL BA SL VITON	45X85X10	112090025
10	1	CIRCLIP DIN 472	Ø 85	101020016
11	1	TAPER ROLLER BEARING 32209A.	45X85X24.75	113300015
12	1	BOTTOM GEAR 1:1.04		201029112
13	1	TAPER ROLLER BEARING 33205.	25X52X22	113300027
14	2	ALLEN HEAD PLUG 1/4" BSP WITH O-RING		118020033
15	2	RIVET DIN 7337		100050003
16	1	IDENTIFICATION PLATE SPECIAL FOR EATON		126020021
17	1	HOUSING PTO		202112534
18	1	TAPER ROLLER BEARING 32008 -XA	40X68X19	113300012
19	1	UPPER GEAR 1:1.04		201029122
20	1	SLIDING COUPLING		207010952
21	1	TAPER ROLLER BEARING 32012X	60X95X23	113300049
22	1	O-RING VITON	90X3	107100066
23	1	GUIDE BUSH		211133082
24	1	O-RING VITON	90X2	107100068
25	1	GASKET		108010176
26	1	ENGAGING HUB		207011041
27	1	CIRCLIP DIN 472	Ø 28	101020028
28	1	ADAPTER SHAFT		203055201
29	2	CIRCLIP DIN 471	Ø 40	101010006
30	1	BALL BEARING 6008	40X68X15	113040003
31	2	SCREW DIN 931 8.8 ZINC PLATED & SEALED	M12X100	116020027
32	1	WASHER		211026433
33	1	SPRING SHORT CENTRAL PISTON		109010030
34	1	GUIDE FOR SCREW		211132251
35	1	SCREW FOR CENTRAL PISTON		214122211
36	1	LUBRICATION HOSE		9085999
37	1	LOCK WASHER		209110461
38	2	AXIAL DISC AS 1024	10X24X1	114010011
39	1	PISTON PTO EATON C.P.		204010881
40	1	O-RING VITON	22X3	107100002
41	1	PNEUMATIC COLLAR VITON	20X28X4	105010018
42	1	O-RING	40X2	107010061
43	1	ALLEN HEAD PLUG WITH O-RING	M16X1.5	118020056
44	1	COVER FOR CENTRAL PISTON		208012851
45	1	PLASTIC PLUG	M12	118010005
46	3	SCREW DIN 912 8.8	M5X15	116010045
47	1	PLASTIC PLUG	½"	118010002
48	1	AXIAL BEARING AXK1024		114050002
49	1	LUBRICATION CONNECTOR	M22-1.5	202028103

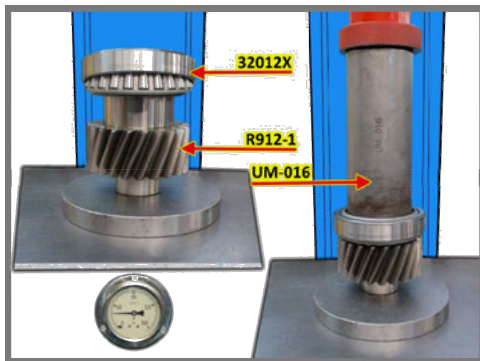
## 2.1 Assembly



**1.-**Put the Taper Roller Bearing 32209 in R911-1 bottom gear. Press with tool UM-002 at 30 ±5bar.



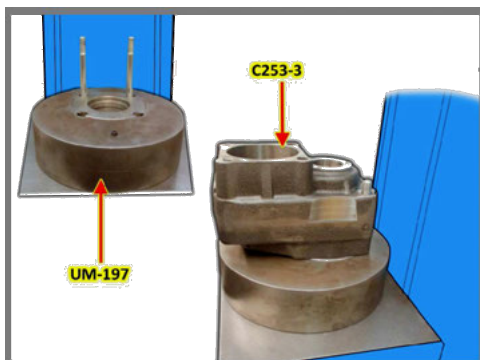
**2.-**Turn around the bottom Gear and collocate the Taper Roller Bearing 33205. Press with tool UM-018 at 30 ±5bar.



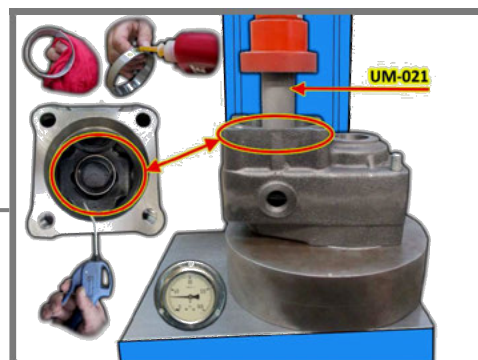
**3.-**Put the Taper Roller Bearing 32012X in R912-1 upper gear. Press with tool UM-016 at 30 ±5bar.



**4.-**Turn around the upper Gear and collocate the Taper Roller Bearing 33008. Press with tool UM-017 at 30 ±5bar.



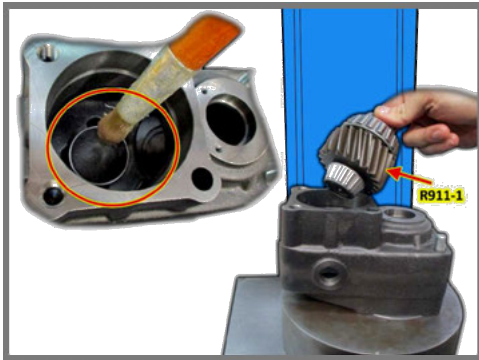
**5.-**Introduce the housing on UM-197 as shown.



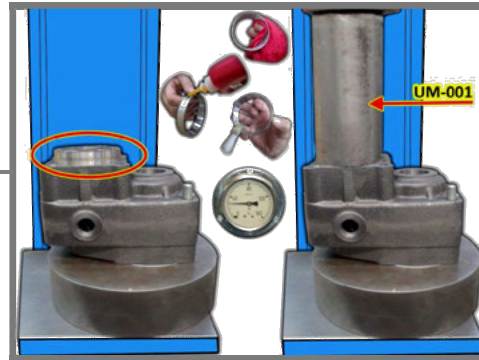
**6.-**Blow off on Housing interior. Clean the 32007 bearing race interior and apply a line of Loctite glue 641 or similar on exterior. Position it inside housing and press with tool UM-021 at 30 ±5 bar.



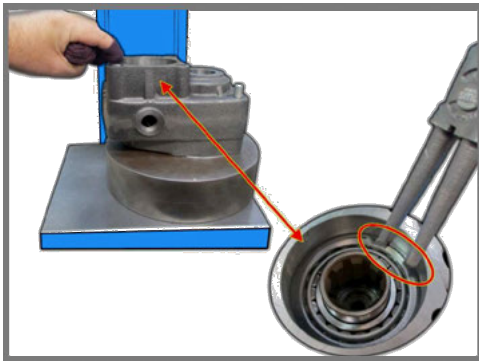
## 2. DISASSEMBLY / ASSEMBLY



**7.-**Apply grease on 32007 bearing race interior. Introduce the bottom Gear R911-1 on PTO Housing as it's shown on image.



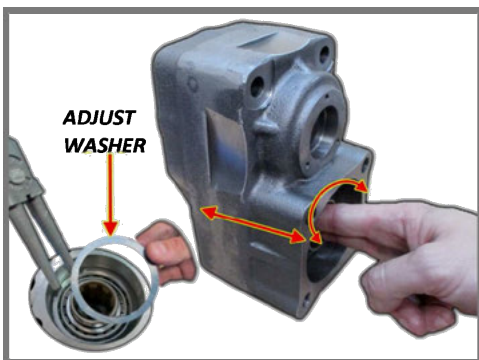
**8.-**Clean the 32209 bearing race interior and apply a line of Loctite glue 641 or similar on exterior. Position it inside housing and press with tool UM-001 at  $30 \pm 5$  bar.



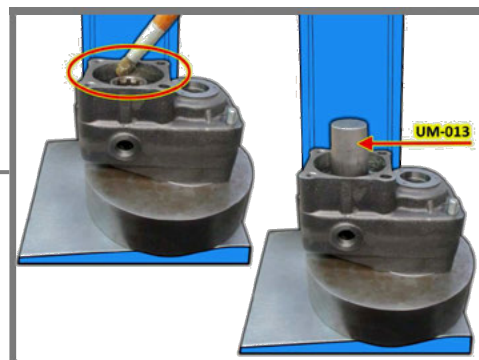
**9.-**Clean up glue residue. Then mount the circlip  $\varnothing 85$ .



**10.-**Once the Bearings are adjusted, hit the housing with a soft hammer to loosen them.

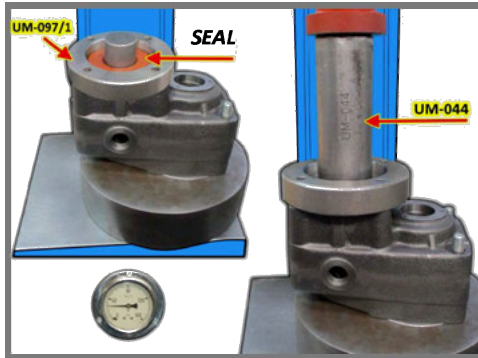


**11.-**Introduce under accommodation circlip and above it a gauge. If the gap of the two is equal or greater than 0.1mm then you must put an adjust washer.

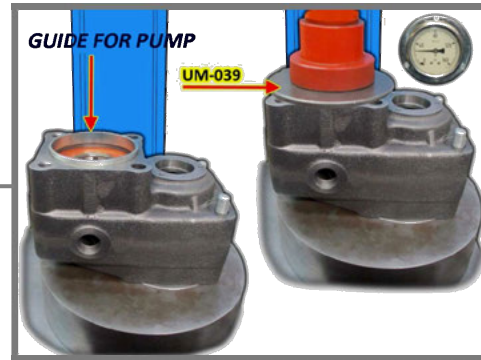


**12.-**Apply grease on selected zone. Put the tool UM-013 as shown on image.

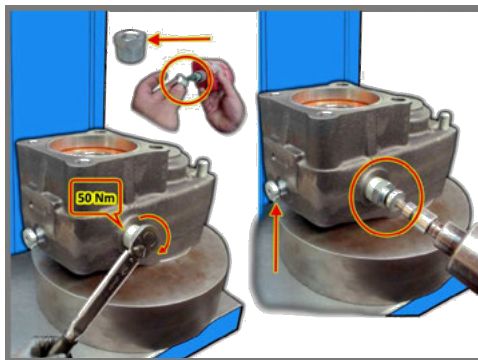
## 2. DISASSEMBLY / ASSEMB



**13.-**Position the tool UM-097/1 and collocate the Seal (45x85x10) with lips looking down. Centre in its place and press with tool UM-044 at  $8 \pm 2$ bar.



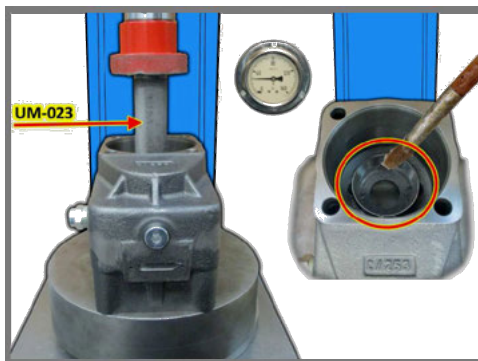
**14.-**Mount the X309 Guide for Pump. If were necessary use the tool UM-039 and press at  $8 \pm 2$  bar.



**15.-**Apply Loctite glue 270 or similar to A/810-2 Plug. Tighten up to 50 Nm. Mount the G 1/4" Plugs and tighten them with pneumatic screwdriver tool.

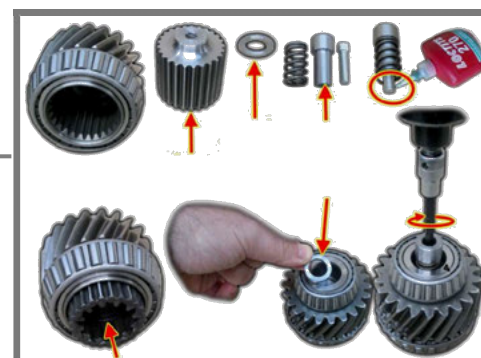


**16.-**Turn around the PTO housing and position it on tool as shown on image. Clean the bearing race interior and apply a line of Loctite glue 641 or similar on exterior. Place it in position as it's shown on image.



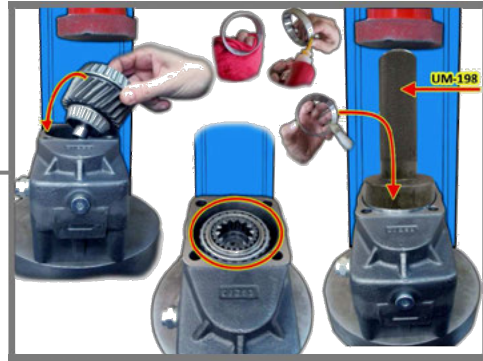
**17.-**Apply grease on bearing race interior centre in its place and press with tool UM-023 at  $25 \pm 5$ bar.

**18.-**Introduce the Q096 Engaging Coupling in R912-1 Upper Gear as shown. Collocate the S046 Lock Washer for Braced Central Piston. Apply Loctite 270 or similar to Screw for Central Piston and tighten with pneumatic screwdriver tool, selector n.5.

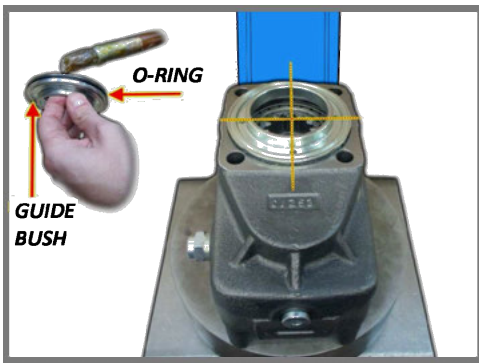




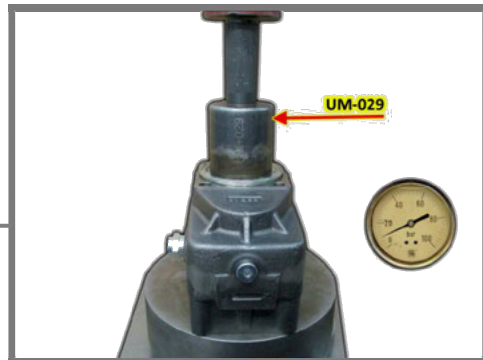
**19.-**Verify that measurement shown on image is the correct one (17,6 ±0,3 mm).



**20.-**Position the Gear. Clean the bearing race interior and apply a line of Loctite glue 641 or similar on exterior. Apply grease on bearing race interior, centre in its place and press with tool UM-198.



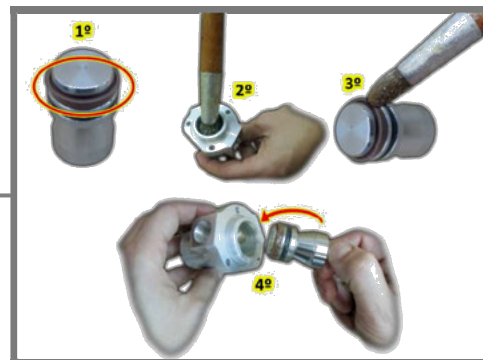
**21.-**Put O-Ring (90x3) on X308-2 Guide Bush and apply grease. Position it on PTO Housing with the holes in cross sense as shown on image.



**22.-**Introduce with the press using the tool UM-029, be careful to do it at 8 ±2 bar.

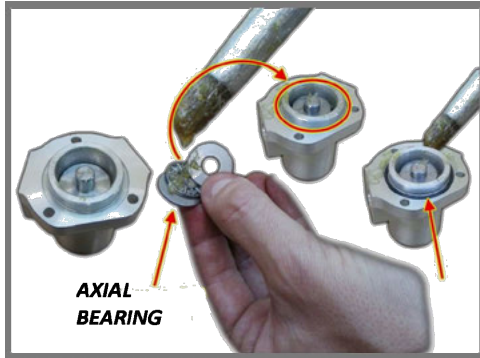


**23.-**Next step: Assembly of the pneumatic Piston.

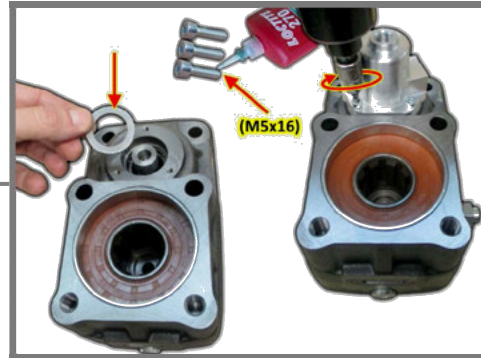


**24.-** 1st: Mount the O-Ring and Pneumatic Collar in the indicated position. 2<sup>nd</sup>: Apply grease on Piston Carrier Cover interior. 3<sup>rd</sup>: Apply grease on Joints and 4<sup>th</sup>: Introduce the Piston on Carrier Cover as it's shown in the image.

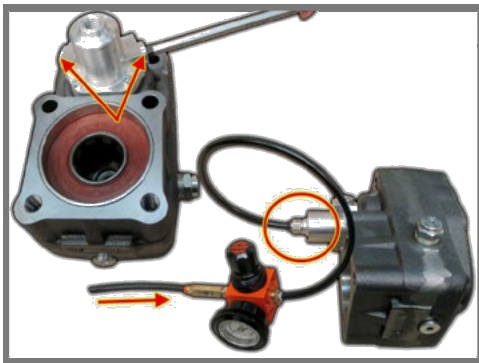
## 2. DISASSEMBLY / ASSEMBLY



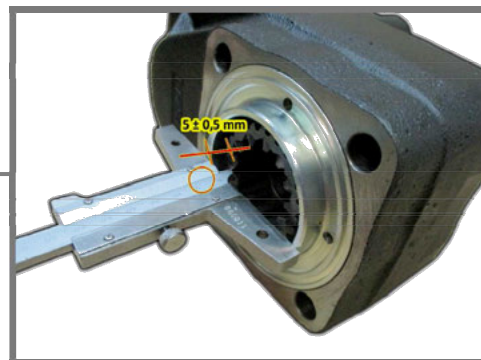
**25.-**Put grease on the Axial Bearing and mount it. Collocate the O-Ring on Piston Carrier Cover and put grease on it.



**26.-**Mount the stop Washer. Apply Loctite 270 or similar to M5x15 Screws. Approximate the screws with pneumatic 3/8" tool and end with dynamometer wrench at (6-7) Nm.



**27.-**Thread two metallic Plugs in both lateral holes of piston Cover. Connect the air flow regulator and inject air (5.7 bar approx.).



**28.-**Verify that measurement from Guide Bush to sliding Coupling is between a range of  $5 \pm 0,5$  mm.



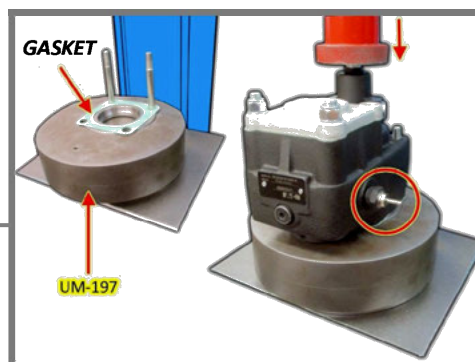
**29.-**Remove inlet air pressure and wait for about 20"-30", verify that pressure gauge needle doesn't move. Ensure that the displacement is the correct one.



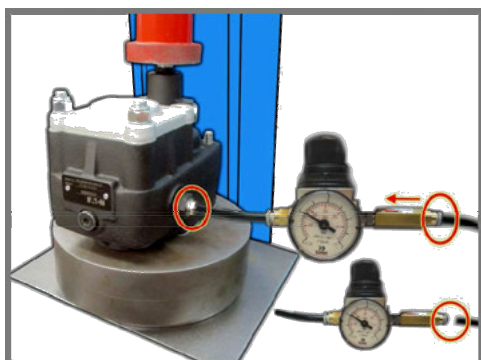
**30.-**Mount the Gasket and thread the M12x49 Studs. Tighten them with 3/8" Pneumatic screwdriver tool, selector no.5.



**31.-**Mount the washers and the M12 Nuts. Tighten with pneumatic screwdriver tool.



**32.-**Collocate a Gasket on tool UM-197 and position the PTO. Hold it under the press at  $50 \pm 5$  bar. Thread the pneumatic Connector indicated in the image.



**33.-**Connect the air flow regulator and inject air maximum 2 bar. Remove inlet air pressure and ensure pressure gauge needle doesn't move.

**34.-**Mount the plugs indicated in the image.

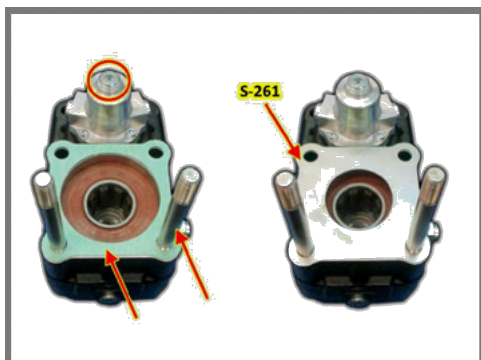


*Congratulations, the PTO is already assembled and ready to be mounted on the gearbox.*

*At this point, the assembly instructions are common for both PTO.*

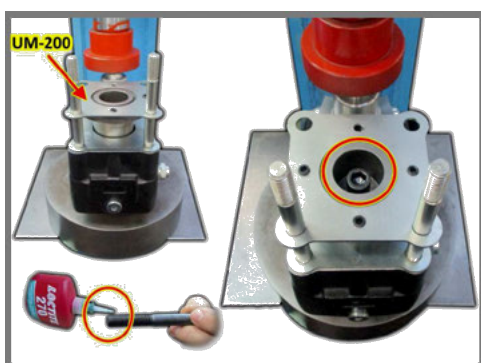
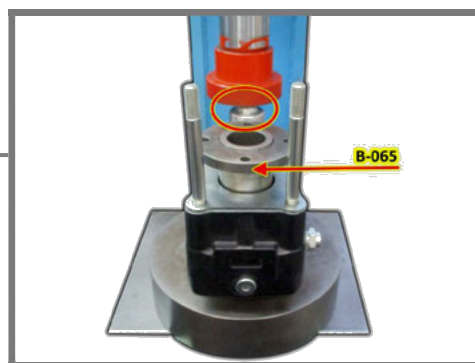
*The following images are corresponding to X8883923 PTO assembly:  
(continue from the point 33).*

## 2. DISASSEMBLY / ASSEMBLY



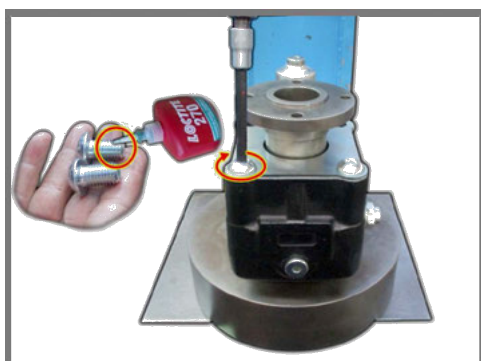
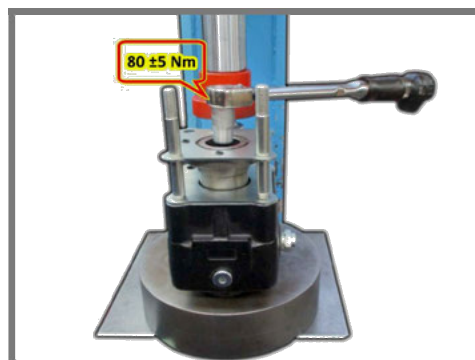
**35.-** Put a A/547 Gasket, a M12x1.5 thread Plug and two provisional M12x170 Studs. Position the Seal Protection Sheet.

**36.-** Collocate the PTO on tool UM-197 and hold it with the press. Press it at 50 bar approx. Mount the B-065 Drive Flange.



**37.-** Place the tool UM-200 as it's shown in the image. Use Loctite 270 on M12 Screw and thread it.

**38.-** Assemble the washer and bolt into transmission Flange and tighten it at  $80 \pm 5$  Nm.



**39.-** Take out the studs. Apply Loctite 270 or similar on M12x20 ISO-7380 bolts and thread them with a pneumatic 3/8" screwdriver tool with selector, n.5.

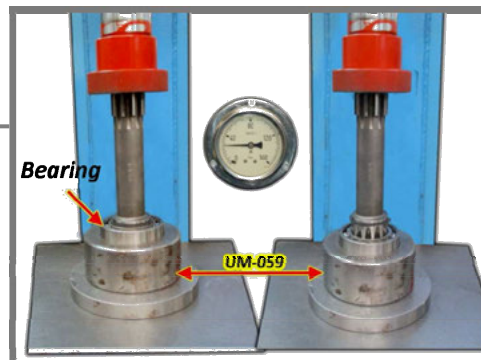
*Congratulations, the PTO is already assembled and ready to be mounted on the gearbox.*

*Kit Adapter Shaft: assembly instruction its common for both PTO.*



**40.-**Mount the corresponding Circlip on Q-104 and on Shaft E-520.

**41.-** Collocate the ball bearing 6008 on UM-059 tool, positioning the shaft as shown in the image and press until Circlip gets to the end ( $30 \pm 5$  bar).



**42.-** Assembly the engaging hub Q-104 in the Shaft E-520 as shown in the image. Hit it with a soft hammer until the stop of the Circlip.

**43.-** Twist the shaft and put the Circlip.



*Congratulations, the Kit Adapter is already assembled and ready to be mounted together with the PTO on the gearbox.*

## 2.2 Disassembly



**1.-**Disassembling the X8883541 PTO starts with dismantling the Blank cover.



**2.-**Extract the M12 nuts and corresponding washers.



**3.-** Remove the Blank Cover and the Gasket.

**4.-**If the case of X8883923 PTO, we need to start removing the flange. To remove the transmission flange from output shaft PTO use the impact gun to loosen the screw M12x90 DIN 912 zinc plated.



**5.-**Once extracted the flange, we will proceed to loose the seal stop plate.



*From this step to the end, the disassembly is common for both PTO.*



**6.-**Extract the X308-2 Guide Bush as shown in the image.



**7.-**Poke a screwdriver into rubber part of the Seal and continue with disassembling by pulling out the seal.



**8.-**You must replace it when you assemble the PTO again.

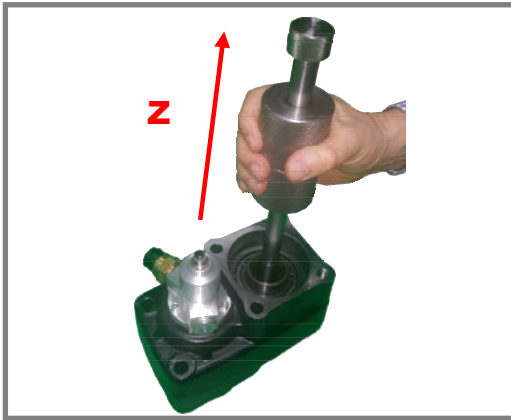


**9.-**We need to extract the circlip DIN472 Ø85 that is fixing the bearing.



**10.-**Once extracted the circlip, we will proceed to thread a special inertia extracting tool on the M12 shaft thread.

## 2. DISASSEMBLY / ASSEMBLY



**11.-** Pulling on Z direction we must be able to extract the shaft package.



**12.-** With the gear package extracted, we have to extract the rest of components that are on interior of the housing.



**13.-** Once the DIN 912 M5x16 three screws are loosen, extract the Piston Housing by hand.



**14.-** Remove the T285 Cover of the Central Piston.



**15.-** Remove the X221 Screw for Central Piston. Use an impact gun to do it easier.

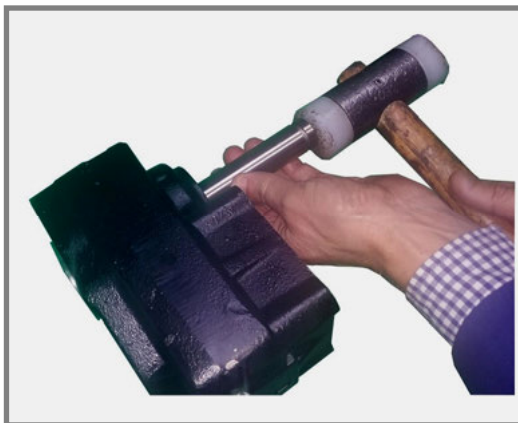
## 2. DISASSEMBLY / ASSEMBLY



**16.-**Extract by hand the Washer, Spring and Guide for screw.

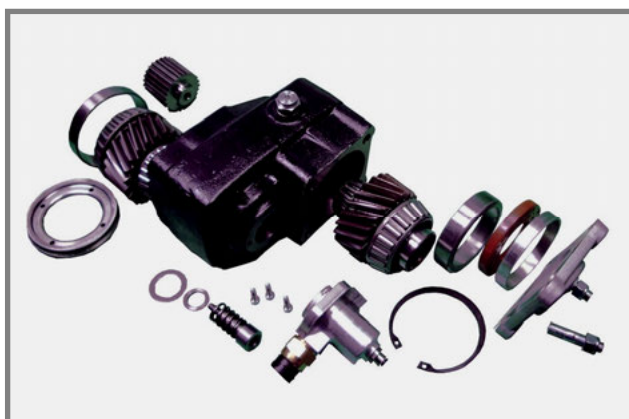


**17.-**Extract the Sliding Coupling by hand.



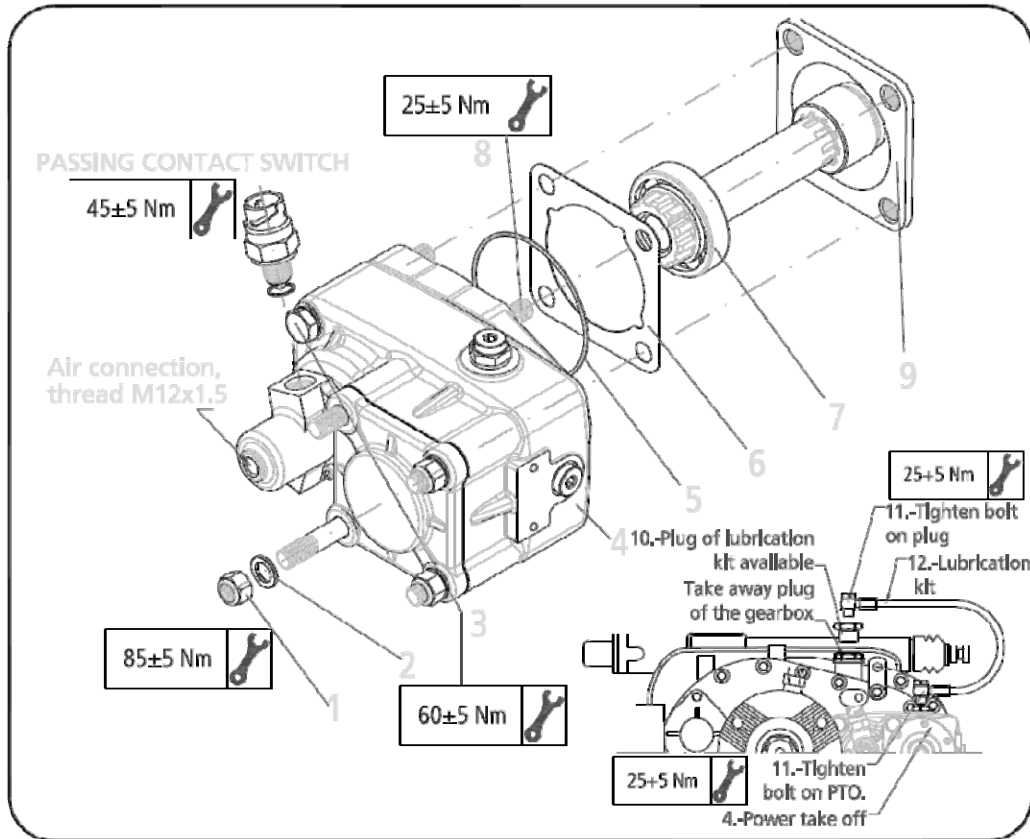
**18.-**Remove the Upper Gear package by a soft hammer if necessary.

**19.-**Once bearing race is out, extract the Upper Gear by hand.



*¡Congratulations! The PTO is already disassembled. You can check the components one by one and replace or change damaged components.*

### 3.1 Installation Instructions



#### General information

The following installation instruction for fitment of the PTO EATON ES(0)-1XX09 Ratio 1:1,04 (part no.-X8883541) should be followed in order to ensure good performance and long life.

If these instructions has not been followed, then warranty claims will not be accepted.

#### Mounting Instruction list

Items	Description
1	Nut (2x)
2	Washer(4x)
3	Screw (2x)
4	PTO Housing
5	O-ring
6	Gasket
7	Shaft kit
8	Stud (2x)
9	Gearbox
10	Plug
11	Banjo bolt (x2)
12	Lubrication kit

#### Installation method

Drain the gearbox and clean the cover plate and surrounding area to prevent ingress of dirt.

Fit the shaft kit (7) in the gearbox, till the shaft is perfectly engaged. If necessary, is possible to use a screw M10 length, this screw can be bolted for correct anchorage.

Fit a gasket (6) on the gearbox, and be sure that o-ring is in its housing.

Mount the PTO housing (4) to the gearbox, tighten the screws (3) and its washers (2) in accordance with the pattern shown.

Fit the studs (8), (with precote end to the gearbox) included in the kit mounting, to the gearbox (9) in accordance with the pattern shown. And thread the studs (1) and its washers (2) in accordance with the pattern shown.

For lubrication kit (12) mounting, tighten screw (13) on PTO housing (4). Stretch oil pipe and tighten screw (11) on adapter plug (10).

For switch mounting, thread it with its o-ring, tighten the switch in accordance with the pattern shown in the drawing.

**Do not forget to refill the gearbox with oil and up to level.**

## 4.1 Troubleshooting

Since it is our mayor 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 about the installation of the PTO P/N X8883541

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.

Here are some of the general questions that are relevant to the Proper selections of a transmission mounted Power Take-Off.

- 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 Kilowatt 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?

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

PROBLEM	REASON	SOLUTION
Noise.	Lubrication horse is obstructed.	Check it is clear inside and fitted also.
High temperature on the PTO.	R.P.M. & Torque are higher than specified.	Check parameters on data sheet.
Pitting of gears.	Contaminated oil.	Change oil.
	Excessive torque.	Change gear and check the torque rating and speed.
Premature damage on the synchrony teeth.	Not pressing the clutch when the PTO is engaged.	Always press the clutch when the PTO is engaged.
PTO doesn't engage.	Improper pneumatic pressure in the system.	Check a minimum pressure of 6 bar in the line to engage the PTO.
Leaks.	Gaskets or O-rings damaged Inadequate torque.	Replace gaskets or O-rings Tighten all bolts and screws.





## 4.2 Warranty and repair service centers

## HEADQUARTER

## Spain

**BEZARES S.A.**

Av. de las Retamas, 145  
 Polígono Industrial Monte Boyal • 45950  
 Casarrubios del Monte • Toledo  
 Tel:+34 91 818 82 97  
 bezares@bezares.com

**CATALUÑA**

C/. Mollet, 28  
 08120 La Llagosta (Barcelona)  
 Phone:+34 93 574 36 55  
 bezaresbarna@bezares.com

## SUBSIDIARIES

## Italy

**BEZARES ITALIA**

11, Via Dell'Artigianato  
 31034 Cavaso del Tomba • Treviso • Italia  
 Phone:+390 423 544 105  
 italia@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

## China

**BEZARES CHINA**

No. 8. Hongfu East Road, Yaozhuang Town  
 Zhejiang Province • China  
 Phone: +86 573 84777638  
 china@bezares.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

## USA

**BEZARES USA**

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

*Bezares has an extensive network of distributors at your service worldwide. Contact our Technical Support Department (+34 918 188 297) to find out which one is nearest to you.*