

Manufacturing Hydraulic Excellence since 1972

TECHNICAL DATA SHEETS &

RECOMMENDATIONS

PTO ZF



## CONSTANT DRIVE 10 BOLT MOUNT POWER TAKE OFF RECOMMENDATIONS BEFORE START-UP



#### **Manufacturer's Declaration**

ABER ensures compliance of its products with the essential health and safety requirements of the Directive 2006/42/EC and harmonized standard EN ISO 12100:2010.

#### **General information**

The Power Take Offs are mechanical devices that transmit mechanical power. They are usually applied to transmissions from where the power is taken to be transmitted to the hydraulic pumps, intermediate shafts, etc. Normally applied in dumpers, cranes, cleaning systems, moving floors, compressors, etc. This device stands out do to the fact of almost non-existence noise and its high efficiency.

#### Safety information



- Do not attempt to work or install a Power Take-O ffwith the engine running.
- A PTO must be properly matched to the vehicle transmission and to the auxiliary equipment. An incorrect matched could cause several damage to the vehicle transmission and the auxiliary equipment.



- Do not exceed the limits of power and torque in the technical sheet.
- The decisions of install guards in the

PTO warning shall be the responsibility of the designers or installers.

#### **Maintenance**

itteriariet			
Monthly	Annually		
-Check the transmission oil level. We advise seeing the vehicle manufacturer recommendationsCheck for PTO leaks under and around the vehicle. Any leaks found should be stopped immediately -Check the tightness of the fixation studs and if necessary tighten more. Consult torque table to tight studs correctly.	-Check the transmission oil level. We advise seeing the vehicle manufacturer recommendationsCheck for PTO leaks under and around the vehicle. Any leaks found should be stopped immediately -Check the tightness of the fixation studs and if necessary tighten more. Consult torque table to tight studs correctlyVisual inspection of all the components and if necessary proceed with the repair.		

Torque Table			
Size (mm - inch)	M8	M10	M12
	3/8"	7/16"	1/2"
Screws and nuts Torque	25 N.m	60 N.m	80 N.m
	18 lbf.ft	45 lbf.ft	59 lbf.ft
Studs Torque	10 N.m	20 N.m	30 N.m
	7 lbf.ft	15 lbf.ft	22 lbf.ft

## Installation of a constant drive 10 bolt mount PTO

1 - Drain the oil from the gearbox, remove hatch cover and the respective gasket and verify if PTO and transmission gears are compatible;



2 - Clean the lip of the hatch with a wire brush or spatula, being careful not to let any foreign bodies into the transmission;



3 - In the PTO mounting Kit find the two alignment studs. Fit the studs in the respective holes (A) accord to the schematic image.



4 - Fit one or more gaskets as needed, between the inspection hatch and the PTO body. Ensure that the teeth of the gears in the transmission and those in the PTO are properly meshed.

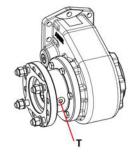


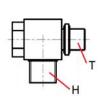
Do not use more than three gaskets.



5 - Fit the screws, and washers according to the schematic image. The 25 mm screws and washers are fitted in the (B) holes and the 30mm screws and washers are fitted in the (C) holes. Consult torque table to tighten screws correctly.

6 - Attach the  $90^\circ$  elbow fitting provided in the kit to the PTO threaded hole (T)



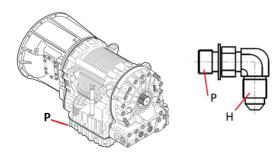


ABER is constantly engaged in improving its products and, therefore, reserves itself the right to modify without any further notice the characteristics shown



## CONSTANT DRIVE 10 BOLT MOUNT POWER TAKE OFF RECOMMENDATIONS BEFORE START-UP

7 - Attach the 90° elbow fitting provided in the kit to the threaded hole (P) on the transmission.



8 - Attach the hydraulic hose to the fittings (H). Check oil level and signs of oil leakage.



#### Faults, causes and remedies

Faults	Causes	Remedies	
Noise	Assembly clearance     Broken teeth	Check/adjust the looseness between the teeth and the thickness of the gaskets	
	3.Damaged roller- bearings	2-3.Repair or replace	
Over-heating	1.Lack of lubrication     2.Too tight between the wheel of the PTO and the wheel of the transmission	1.Refill the oil level     2.Adjust the gap between teeths with the thickness of the gaskets	
Leaks	1.Loose fixation nuts and studs     2.Damaged gasket	1.Tight according to recommendations     2.Replace gasket for another with the same thickness	
No transmission of movement	1.PTO blockage	1.Repair or replace control	



- A PTO should be mounted by qualified personnel. The correct mounting of the PTO is influenced by the ability of the operator
- Always read carefully all owner's manuals, or other instructions before installation of PTO and driven equipment.
- In case of difficulties please ask our service department for advice.
- To install a PTO, the vehicle must be parked on a flat surface with the engine o ffand parking brake applied.
- Use appropriated tools and safety equipment.
- Ensure that the system cannot boot involuntarily.
- Ensure that the levels and quality of the oil are as recommen ded, that there are no leaks and that everything is properly till ghtened before starting.
- When the PTO is working, never touch or pull hoses or intermediate shaft when applied. When intermediate shaft is applied take into account that parts can be ejected.
- -The application of the ABER's PTO must follow all the instructions hereby mentioned in order to assure the safety of all personal working with the equipment including its surroundings, assure a long life to the product and preserve the warranty of the brand. All applications that do not follow the hereby instruction are solely the users responsibili ty. If there should happen any malfunctioning, it is strictly forbidden the disassembly of the product except if it is being made by a qualified technician of the brand or if there is a special authorization to do that. If this specification should not be followed, all warranties might be lost.



# POWER TAKE OFF RECOMMENDATIONS BEFORE START-UP



#### **Manufacturer's Declaration**

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#### General information

The Power Take Offs are mechanical devices that transmit mechanical power. They are usually applied to gearboxes from where the power is taken to be transmitted to the hydraulic pumps, intermediate shafts, etc. Normally applied in dumpers, cranes, cleaning systems, moving floors, compressors, power generators, etc. This device stands out do to the fact of almost non-existence noise and its high efficiency.

#### How to use

The following procedure is not valid for automatic gearboxes. The procedure to operate the PTO should always be made with the vehicle parked, parking brake actuated, engine running and in neutral.

- 1.press the clutch for 5/10 seconds;
- 2.turn on PTO control (pneumatic, vacuum, electric or mechanic);
- 3.release the clutch slowly;
- To disconnect the PTO:
- 1.press the clutch for 5/10 seconds;
- 2.turn o ffPTO control;
- 3.release the clutch;

ATTENTION

PTO must be turned off, before the vehicle starts moving again. Do not exceed the limits of power and torque

in the technical sheet. The incorrect engagement and disengagement, may cause premature equipment damage.

#### Maintenance

tightness of the pneumatic system and the light switches. pneumatic system and the light switches. pneumatic system and teflil if necessary. The light switches. the pneumatic system pneumatic s	
-Check the tightness of the fixation studs and if necessary tighten more. Consult torque table to tight studs correctlyVisual inspection of all the components and if necessary proceed with the repair.	neck the tightness of the but switches neck the oil level and ll if necessary. We vise seeing the gearbox nufacturer ommendations. neck the tightness of tightness of the tightness of the tightness of tightne

#### General information to mount a PTO

- -The general instructions contained in this document do not replace specific information of any component involved in the assembly.
- -To install the PTO, the vehicle must be parked on a flat surface with the engine offand parking brake applied.
- -Use only the components supplied with PTO.
- -Before final tightening, we recommend that you tighten the lock-nuts to the minimum torque and operate the PTO for 10/15 seconds. This allows the gears in the gearbox to self-align and also to check for any excessive noise.
- -Before re-filling the gear-box with oil it is advisable to che ck the noise level of the PTO. If the PTO produces a hissing noise, this means that there is ins ufficient backlash in which case another gasket must be added. If the Power Take-o ff rattles, this indicates that there is too much backlash and the number of gaskets must be reduced. Once the gearbox has been re-filled with oil, make sure there are no leaks. Make sure that the power required from the unit is effectively obtainable from the gearbox. If the Power Take-off becomes noisy after the additional assembly of a universal joint, make sure that the joint is not damaged nor the are the edges of the gearbox and PTO.

Torque Table				
Size (mm - inch) M8 M10 7/16" M12				
Screws and nuts Torque (Nm)	25	50	80	
Studs Torque (Nm)	10	20	30	

#### Installation of a side mount PTO

1 - Drain the oil from the gearbox, remove hatch cover and the respective gasket and verify if PTO and gearbox gears are compatible;



2 - Clean the lip of the hatch with a wire brush or spatula, being careful not to let any foreign bodies into the gearbox;



3 - If the PTO uses studs, fit them on the gearbox. Consult torque table to tighten studs correctly. In the case of through-threading, make sure that the studs do not interfere with the gears inside the gearbox. Apply a sealing glue to the thread of the studs;



4 - Fit one or more gaskets as needed, between the inspection hatch and the PTO body. Ensure that between the teeth of the gears in the gearbox and those in the PTO there is a backlash of 0,15/0,3 mm.

ATTENTION

Do not use more than three gaskets.



5 - Fit the PTO to the gearbox. On the PTO body there is a plug, if unscrewed, it's large enough to allow manual checking of backlash between the PTO and the gears of the gearbox. The upper wheel of the PTO should move manually and not be too loose, that is, not hitting anything.



This should be checked with the engine o ffand the truck blocked with the parking brake.

ABER is constantly engaged in improving its products and, therefore, reserves itself the right to modify without any further notice the characteristics shown



#### **POWER TAKE OFF RECOMMENDATIONS BEFORE START-UP**



6 - Fit the PTO tightly onto the gearbox. Consult torque table to tighten studs correctly. This operation is more secure when using a dynamometric spanner. Check the oil quality and level recommended by the manufacturer of the vehicle and refill the oil of the gearbox.

7 - Place fittings and accessories for control.

#### Installation of a rear mount PTO

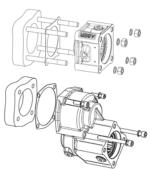
1-Drain the oil from the gearbox (in some gearboxes this step is no needed because the oil level does not reach the rear door), find the rear open and remove its cover and the respective gasket.

2-Clean the surface of the hatch with a wire brush or spatula, being careful not to let any foreign bodies in the gearbox;

3-If the PTO uses studs, fit them on the gearbox. Consult torque table to tighten studs correctly. In the case of through threading, make sure that the studs do not interfere with the gears inside the gearbox. Apply a sealing glue to the thread

4-Fit one gasket between the inspection hatch and the PTO

5- Install the PTO on the gearbox (install pump in PTO when studs are used to fix both components) and tighten the screws using the tightening torque indicated in the torque



6-Check the oil and the level given by the manufacturer of the vehicle and refill the oil of the gearbox taking into account the presence of the PTO.

7-Place the fitting and the air pipe.

**ATTENTION** 

For multi axis PTO it is recommend that you assemble the PTO according to the positions indicated in the

following diagram, which ensure a good lubrication of the internal components.

Vertical assembly Low outlet	
Horizontal assembly  Use lubrication kit	
Vertical assembly High outlet  Use lubrication kit	

#### Faults, causes and remedies

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Faults	Causes	Remedies	
	1.Vehicles clutch is	<ol> <li>Fully press the</li> </ol>	
	not working properly	clutch or wait more	
		time for the gearbox	
	<ol><li>Assembly</li></ol>	gearing to stop	
Noise	clearance	<ol><li>Check/adjust the</li></ol>	
Noise		looseness between	
	<ol><li>Broken teeth</li></ol>	the teeth and the	
		thickness of the	
	<ol><li>Damaged roller-</li></ol>	gaskets	
	bearings	3-4.Repair or replace	
		1.Refill the oil level	
	1-2.Lack of	2.Use a PTO with a	
	lubrication	lubrication hose	
		connected directly to	
Over-heating	<ol><li>Too tight between</li></ol>	the gearbox	
	the wheel of the PTO	<ol><li>Adjust the gap</li></ol>	
	and the wheel of the	between tooths with	
	gearbox	the thickness of the	
		gaskets	
		1.Tight according to	
	1.Loose fixation nuts	recommendations	
Leaks	and studs	<ol><li>Replace gasket for</li></ol>	
	<ol><li>Damaged gasket</li></ol>	another with the	
		same thickness	
	1.Obstructed air hose	1.Clean or replace	
	1.Obstructed all 1103c	hose	
PTO doesn't	2.Low air pressure	2.Check for leak	
engage	2.Low all pressure	source and fix it	
	3.Control failure	<ol><li>Repair or replace</li></ol>	
		control	
PTO doesn't	<ol> <li>Internal PTO</li> </ol>	<ol> <li>Repair or replace</li> </ol>	
disengage	problem	control	
No		1.Repair or replace	
transmission of	1.PTO blockage	control	
movement		30	



- A PTO should be mounted by qualified personnel. The correct mounting of the PTO is influenced by the ability of the operator. In case of difficulties please ask our service department for advice.
- To install a PTO, the vehicle must be parked on a flat surface with the engine off and parking brake applied.
- Use appropriated tools.
- Ensure that the system cannot boot involuntarily.
- Ensure that the levels and quality of the oil are as recommended, that there are no leaks and that everything is properly tightened before starting.

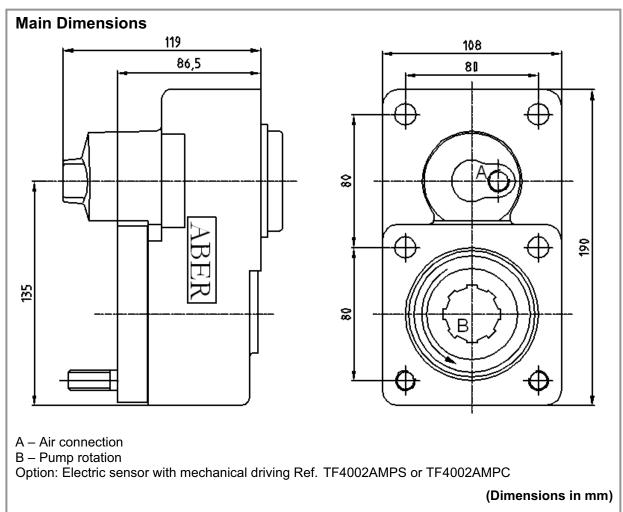
  When the PTO is working, never touch or pull hoses or interme diate shaft when applied. When intermediate shaft is applied take into account that

The application of the ABER's PTO must follow all the instructions hereby mentioned in order to assure the safety of all personal working with the equipment including. its surroundings, assure a long life to the product and preserv e the warranty of the brand. All applications that do not follo w the hereby instruction are solely the users responsibility. If there should happen any malfunctioning, it is strictly forbidden the disassembly of the product except if it is being made by a qualified technician of the brand or if there is a special authorization to do that. If this specification should not be followed, all warranties might be lost.

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Power Take Offs Relation 1:1,32		Ref. TF4001AMP
ZF	<b>S5-35</b>	



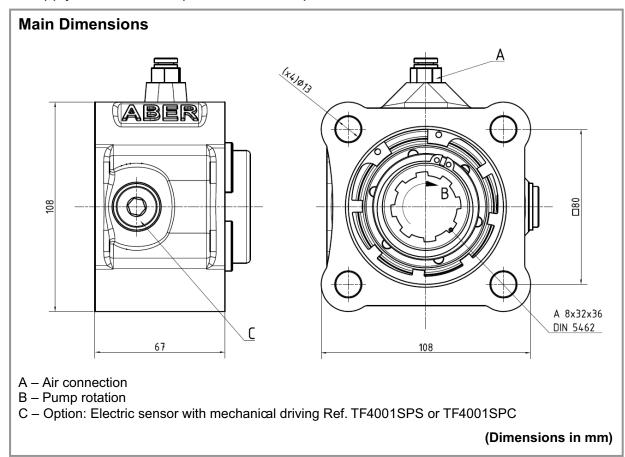
Main Da	nta
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Rear
Pump Rotation	Right Hand
Weight (kg)	7,5
PTO internal ratio	1:1,32
Indicative ratio from motor to PTO's output	
S5-35 / 5.64 1 : 0.828	
/ 6.45 1 : 0.726	
/ 6.75 1 : 0.693	
/ 6.79 1 : 0.879	
/ 7.65 1 : 0.609	
/ 8.02 1 : 0.580	

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Power Take Offs Relation 1:1		Ref. TF4001SP
ZF	S5-35	



Main Data		
Continuous Torque (Nm)	400	
Intermittent Torque (Nm)	520	
Power (at 1000 rpm)	57 cv / 42 kW	
Mounting Position	Rear	
Pump Rotation	Left Hand	
Weight (kg)	2.4	
PTO internal ratio	1:1	
Indicative ratio from motor to PTO's output		
S5-35 / 5.64 1 : 0.628		
/ 6.45 1 : 0.550		
/ 6.75 1 : 0.525		
/ 6.79 1 : 0.666		
/ 7.65 1 : 0.462		
/ 8.02 1 : 0.440		

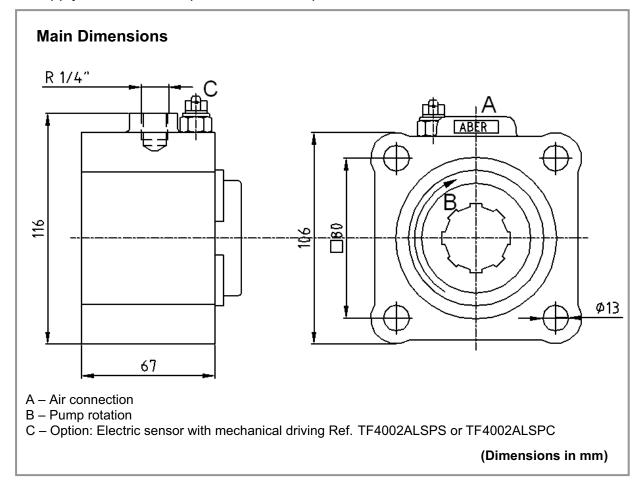


Relation 1:1

Ref. TF4002ALSP

 $$55-50\ ; \ S5-90\ ; \ S6-65\ ; \ S6-66\ ; \ S6-70\ ; \ S6-75\ ; \ S6-80\ ; \ S6-90\ ; \\ 6S-800\ ; \ 6S-1000$ ZF

#### To apply with Gear Pumps or Piston Pumps



Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 rpm)	42 cv / 32 kW	
Mounting Position	Rear	
Pump Rotation	Left Hand	
Weight (kg)	4	
PTO internal ratio	1:1	
Indicative ratio from motor to PTO's output		
S5-50 / 5.30 1 : 0.653 / 5.50 1 : 0.615 / 6.20 1 : 0.545 / 6.61 1 : 0.510 / 6.61+GV80 / 5.30 High: 1 : 0.637 Normal: 1 : 0.510 / 8.02 1 : 0.422 / 8.02+GV80 / 6.20 High:1 : 0.545 Normal: 1 : 0.421		

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Relation 1:1

Ref. TF4002ALSP

ZF

 $$S5-50\ ; \ S5-90\ ; \ S6-65\ ; \ S6-66\ ; \ S6-70\ ; \ S6-75\ ; \ S6-80\ ; \ S6-90\ ; \\ 6S-800\ ; \ 6S-1000$ 

S5-90 GPA	
S6-65 / 6.37 1 : 0.650	
S6-65 / 6.37 1 : 0.650	
/ 6.70 1 : 0.620	
/ 7.00+GV70 / 7.67 High: 1 : 0.456 Normal: 1 : 0.365	
/ 7.40 1 : 0.562	
/ 7.52	
/ 9.00 1 : 0.462	
/7.97+GV80 / 6.70 High: - 1 : 0.620 Normal: - 1 : 0.525	
/ 9.00+GV80 / 6.70 High: - 1 : 0.620 Normal: - 1 : 0.462	
/ 9.00+GV80 / 7.52 High:1 : 0.554 Normal: 1 : 0.462	
S6-66 / 7.36-1.0 1 : 0.522	
/ 9.06-1.0 1 : 0.416	
75.50	
S6-70 / 6.80 1 : 0.514	
/ 6.80+GV70 / 5.71 High: 1 : 0.612 Normal: 1 : 0.514	
/ 7.36 1 : 0.478	
/ 7.92 1 : 0.441	
/ 9.03 1 : 0.387	
/ 9.59 1 : 0.365	
S6-75 / 6.70+GV80 / 7.52 Normal: 1 : 0.620 Low: 1 : 0.554	
00-10 / 0.70 / 0.00 / 7.02   Normal. :- 1 . 0.020   Edw. :- 1 . 0.004	
S6-80 / 5.03 1 : 0.780	
/ 5.66 1 : 0.740	
/ 5.66+GV80 / 7.52 High: 1 : 0.738 Normal: 1 : 0.556	
/ 6.10 1 : 0.688	
/ 6.70 1 : 0.620	
/ 6.70+GV80 / 5.30 High: - 1 : 0.787 Normal: - 1 : 0.620	
/ 6.90 1 : 0.515	
/ 7.35 1 : 0.552 / 7.41 1 : 0.563	
/ 7.41 1: 0.563 / 7.53 1: 0.555	
/ 7.67 1 : 0.540	
/ 7.67+GV80 / 6.70 High: 1 : 0.622 Normal: 1 : 0.543	
/7.90 1 : 0.525	
/ 9.00 1 : 0.460	
/ 9.00+GV80 / 5.30 High:1: 0.787 Normal: 1: 0.462	
/ 9.00+GV80 / 7.48 High:1: 0.562 Normal: 1: 0.462	
/ 9.00+GV80 / 7.52 High:1 : 0.554 Normal: 1 : 0.462	
S6-90 / 5.67 1 : 0.750	
/ 5.74	
/ 6.37 1 : 0.740 / 6.98 1 : 0.612	
/ <del>1.96                                    </del>	
/ 7.03 + GV90 / 5.67 High: 1 : 0.750 Normal: 1 : 0.603	
/7.03+GV90/5.67 High: -1: 0.735 Normal: -1: 0.600	
/7.401:0.575	
/ 9.01 1 : 0.470	
/ 9.01+GV90 / 7.40 High:1 : 0.573 Normal: 1 : 0.471	
•	



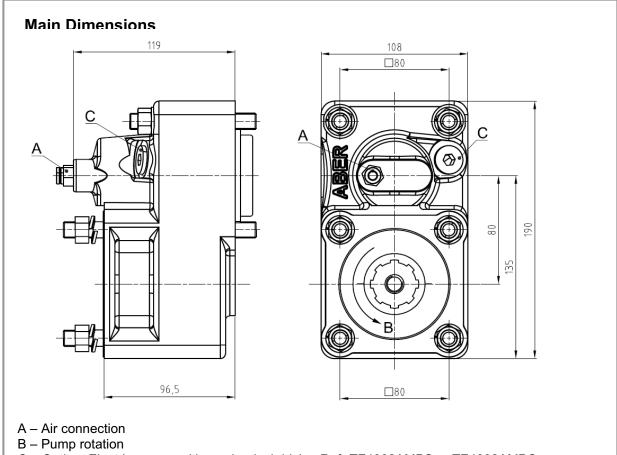
**Relation 1:1,32** 

Ref. TF4002AMP

ΖF

\$5-50; \$5-90; \$6-65; \$6-66; \$6-70; \$6-75; \$6-80; \$6-90; 68-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO

#### To apply with Gear Pumps or with Piston Pumps



C – Option: Electric sensor with mechanical driving Ref. TF4002AMPS or TF4002AMPC

(Dimensions in mm)

Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Rear
Pump Rotation	Right Hand
Weight (kg)	7,5
PTO internal ratio 1:1,32	
Indicative ratio from motor to PTO's output	· · ·
S5-50 / 5.30 1 : 0.861	
/ 5.50 1 : 0.811	
/ 6.20 1 : 0.719	
/ 6.61 1 : 0.674	
/ 6.61+GV80 / 5.30 High: 1 : 0.842 Normal: 1 : 0.674	
/ 8.02 1 : 0.557	
/ 8.02+GV80 / 6.20 High:1 : 0.719 Normal: 1 : 0.557	

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# Power Take Offs Relation 1:1,32

Ref. TF4002AMP

ZF

\$5-50; \$5-90; \$6-65; \$6-66; \$6-70; \$6-75; \$6-80; \$6-90; 68-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO

Engine to PTO ratio	
S5-90 GPA 1 : 1.174	
S6-65 / 6.37 1 : 0.860	
S6-65 / 6.37	
/ 7.00+GV70 / 7.67 High: 1 : 0.602	Normal: 1:0.482
/ 7.40 1 : 0.741	Normal 1 . 0.402
/ 7.52 1 : 0.732	
/ 9.00 1 : 0.610	
/ 7.97+GV80 / 6.70 High: 1 : 0.819	Normal: - 1:0 694
/ 9.00+GV80 / 6.70 High: 1 : 0.819	
/ 9.00+GV80 / 7.52 High:1 : 0.732	
S6-66 / 7.36-1.0 1 : 0.690	
/ 9.06-1.0 1 : 0.550	
S6-70 / 6.80 1 : 0.679	
/ 6.80+GV70 / 5.71 High: 1 : 0.808	Normal: 1 : 0.679
/ 7.36 1 : 0.630	
/ 7.92	
/ 9.03 1 : 0.511	
/ 9.59 1 : 0.482	
S6-75 / 6.70+GV80 / 7.52 Normal: 1 : 0.81	19 Low: 1 : 0.732
00.00 / 5.00	
S6-80 / 5.03 1 : 1.029 / 5.66 1 : 0.980	
/ 5.66+GV80 / 7.52 High: 1 : 0.974	Normal: - 1 : 0 733
/ 6.10 1 : 0.908	110111Idi 1 . 0.700
/ 6.70 1 : 0.820	
/ 6.70+GV80 / 5.30 High: 1 : 1.039	Normal: - 1:0819
/ 6.90 1 : 0.679	TIO. TIO. TIO. TIO. TIO. TIO. TIO. TIO.
/ 7.35 1 : 0.728	
/ 7.41 1 : 0.743	
/ 7.53 1 : 0.732	
/ 7.67 1 : 0.710	
/ 7.67+GV80 / 6.70 High: 1 : 0.821	Normal: 1 : 0.716
/ 7.90 1 : 0.693	
/ 9.00 1 : 0.610	
/ 9.00+GV80 / 5.30 High:1 : 1.039	
/ 9.00+GV80 / 7.48 High:1 : 0.743	
/ 9.00+GV80 / 7.52 High:1 : 0.732	Normal: 1 : 0.611
S6-90 / 5.67 1 : 0.990	
/ 5.74 1 : 0.980	
/ 6.37 1 : 0.980	
/ 6.98 1 : 0.807	
/ 7.03 1 : 0.796	
/ 7.03+GV90 / 5.67 High: 1 : 0.989	Normal: 1 : 0.796
/ 7.03+GV90 / 5.74 High: 1 : 0.970	Normal: 1 : 0.790
/ 7.40 1 : 0.759	
/ 9.01 1 : 0.620	Normal 4 : 0.000
/ 9.01+GV90 / 7.40 High:1 : 0.757	Normal: 1 : 0.622
6S-800 TO /6.58-0.781 : 0.700	
6AS-800 TO /6.58-0.781 : 0.700	
6S-1000 TO /6.75-0.781 : 0.700	
6AS-1000 TO /6.75-0.781 : 0.700	
CC 4000 TD /7 70 4 00	
6S-1200 TD /7.72-1.001:0.713 6S-1200 TO /6.75-0.831:0.818	
1.0.010	

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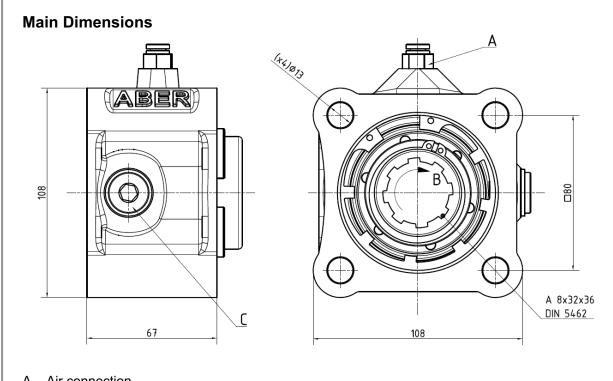
Relation 1:1

Ref. TF4002SP

ZF

\$5-50; \$5-90; \$6-65; \$6-66; \$6-70; \$6-75; \$6-80; \$6-90; \$6-80 TO; \$6AS-800 TO; \$6S-1000 TO; \$6AS-1000 TO; \$6S-1200 TD/TO

#### To apply with Gear Pumps or Piston Pumps



A - Air connection

B – Pump rotation

C - Option: Electric sensor with mechanical driving Ref.TF4002SPS or TF4002SPC

(Dimensions in mm)

Main Data		
Continuous Torque (Nm)	1000	
Intermittent Torque (Nm)	1200	
Power (at 1000 rpm)	142 cv / 105 kW	
Mounting Position	Rear	
Pump Rotation	Left Hand	
Weight (kg)	2.4	
PTO internal ratio 1:1		
Indicative ratio from motor to PTO's output		
S5-50 / 5.30		
/ 8.02+GV80 / 6.20 High:1 : 0.545 Normal: 1 : 0.421		



Relation 1:1

Ref. TF4002SP

ZF

\$5-50; \$5-90; \$6-65; \$6-66; \$6-70; \$6-75; \$6-80; \$6-90; \$6-800 TO; \$6AS-800 TO; \$6S-1000 TO; \$6AS-1000 TO; \$6S-1200 TD/TO

Engine to P	ΓO ratio
S5-90 GPA	1 : 0.890
S6-65 / 6.37	- 1 : 0 650
/ 6.70	1 : 0.620
	0 / 7.67 High: 1 : 0.456 Normal: 1 : 0.365
/ 7.40	
/ 7.52	1 : 0.555
	1:0.462
	0 / 6.70 High:1: 0.620 Normal:1: 0.525
	0 / 6.70 High: 1 : 0.620 Normal: 1 : 0.462 0 / 7.52 High:1 : 0.554 Normal: 1 : 0.462
/ 9.00+000	0/7.32 High1 . 0.334 Normal 1 . 0.402
S6-66 / 7.36-1.0	- 1 : 0.522
	1: 0.416
S6-70 / 6.80	1 : 0.514
	0 / 5.71 High: 1 : 0.612 Normal: 1 : 0.514
/ 7.36	1 : 0.478
/ 7.92	1:0.441
/ 9.03	1 : 0.387 1 : 0.365
/ 9.59	- 1: 0.365
S6-75 / 6.70+GV8	30 / 7.52 Normal: 1 : 0.620 Low: 1 : 0.554
00.00 / 5.00	4.0700
S6-80 / 5.03 / 5.66	1 : 0.780 1 : 0.740
	0 / 7.52 High: 1 : 0.738 Normal: 1 : 0.556
/ 6.10	1 : 0.688
	1 : 0.620
/ 6.70+GV8	0 / 5.30 High: 1 : 0.787 Normal: 1 : 0.620
/ 6.90	1 : 0.515
/ 7.35	1 : 0.552
/ 7.41	1 : 0.563
	1 : 0.555
/ 7.67	1:0.540
/ 7.67+GV8 / 7.90	0 / 6.70 High: 1 : 0.622 Normal: 1 : 0.543 1 : 0.525
/ 9.00	1 : 0.460
	0 / 5.30 High:1 : 0.787 Normal: 1 : 0.462
	0 / 7.48 High:1 : 0.562 Normal: 1 : 0.462
	0 / 7.52 High:1 : 0.554 Normal: 1 : 0.462
	·
S6-90 / 5.67	1 : 0.750
/ 5.74	1:0.740
/ 6.37	1:0.740
/ 6.98 / 7.03	1 : 0.612 1 : 0.603
	0 / 5.67 High: 1 : 0.750 Normal: 1 : 0.603
	0 / 5.74 High: 1 : 0.735 Normal: 1 : 0.600
/ 7.40	1:0.575
/ 9.01	1 : 0.470
/ 9.01+GV9	0 / 7.40 High:1 : 0.573 Normal: 1 : 0.471
6S-800 TO /6.5	8-0.781: 0.530
6AS-800 TO /6.5	
6S-1000 TO /6.7	5-0.781:0.530
6AS-1000 TO /6.7	
00 4000 TD /7 =	24.00
6S-1200 TD /7.72 6S-1200 TO /6.79	
03-1200 10 /0.73	U-0.001 . U.UZU

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ZF

## **Power Take Offs**

**Relation 1:1,32** 

Ref. TF4002UNI

 $$55-50\ ; \ S5-90\ ; \ S6-65\ ; \ S6-66\ ; \ S6-70\ ; \ S6-75\ ; \ S6-80\ ; \ S6-90\ ; \\ 6S-800\ ; \ 6S-1000$ 

# **Main Dimensions** 119 108 68 80 80 90 D 80 Ø72 80 101

- A Air connection
- B Sense of rotation
- C Option: Electric sensor with mechanical driving Ref. TF4002UNIS or TF4002UNIC
- D It can be positioned on 4 different ways

(Dimensions in mm)

Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	380	
Power (at 1000 rpm)	40 cv / 30 kW	
Mounting Position	Rear	
Pump Rotation	Right Hand	
Weight (kg)	11	
PTO internal ratio	1:1,32	
Indicative ratio from motor to PTO's output		
\$5-50 / 5.30		
/ 6.20 1 : 0.719		
/6.61 1:0.674		
/ 6.61+GV80 / 5.30 High: 1 : 0.842 Normal: 1 : 0.674 / 8.02 1 : 0.557		
/ 8.02+GV80 / 6.20 High:1 : 0.719 Normal: 1 : 0.557		

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**Relation 1:1,32** 

Ref. TF4002UNI

ZF

 $$55-50\ ; \ S5-90\ ; \ S6-65\ ; \ S6-66\ ; \ S6-70\ ; \ S6-75\ ; \ S6-80\ ; \ S6-90\ ; \\ 6S-800\ ; \ 6S-1000$ 

C:	4. DT	'Oti
Engi	ine to PT	O ratio
S5-90	GDA	1 : 1.174
33-90	GFA	1.1.1/4
S6-65	/ 6.37	1 : 0.860
	/ 6.70	1 : 0.820
	/ 7.00+GV7	0 / 7.67 High: 1 : 0.602 Normal: 1 : 0.482
	/ 7.40	1 : 0.741
		1 : 0.732
	/ 9.00	1 : 0.610
		0 / 6.70 High: 1 : 0.819 Normal: 1 : 0.694
		0 / 6.70 High: - 1 : 0.819 Normal: - 1 : 0.611
	/ 9.00+GV8	0 / 7.52 High:1 : 0.732 Normal: 1 : 0.611
S6-66	/ 7 36-1 0	1 : 0.690
		1 : 0.550
	7 0.00 1.0	. 1.000
S6-70	/ 6.80	1:0.679
		0 / 5.71 High: - 1 : 0.808 Normal: - 1 : 0.679
	/ 7.36	1:0.630
	/ 7.92	
	/ 9.03	1 : 0.511
	/ 9.59	1 : 0.482
S6-75	/ 6.70+GV8	30 / 7.52 Normal: 1 : 0.819 Low: 1 : 0.732
SE 90	/ 5.03	1 : 1.029
	/ 5.66	1 : 0.980
		0 / 7.52 High: - 1 : 0.974 Normal: - 1 : 0.733
	/ 6.10	1: 0.908
	/ 6.70	-1:0.820
		0 / 5.30 High: - 1 : 1.039 Normal: - 1 : 0.819
	/ 6.90	1 : 0.679
	/ 7.35	1 : 0.728
	/ 7.41	1 : 0.743
	/ 7.53	1 : 0.732
	/ 7.67	1 : 0.710
		0 / 6.70 High: 1 : 0.821 Normal: 1 : 0.716
	/ 7.90	
	/ 9.00	. 1.0.010
		0 / 5.30 High:1 : 1.039 Normal: 1 : 0.611
		0 / 7.48 High:1: 0.743 Normal:1: 0.611
	/ 9.00+GV8	0 / 7.52 High:1 : 0.732 Normal: 1 : 0.611
S6-90	/ 5.67	1 : 0.990
	/ 5.74	1 : 0.980
	/ 6.37	1 : 0.980
	/ 6.98	1 : 0.807
	/ 7.03	1 : 0.796
		0 / 5.67 High: - 1 : 0.989 Normal: - 1 : 0.796
		0 / 5.74 High: - 1 : 0.970 Normal: - 1 : 0.790
	/ 7.40	1:0.759
	/ 9.01	1 : 0.620
	/ 9.01+GV9	0 / 7.40 High:1 : 0.757 Normal: 1 : 0.622



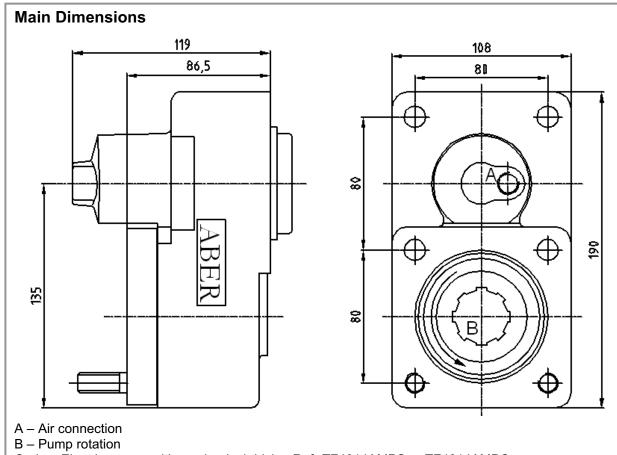
**Relation 1:1,32** 

Ref. TF4014AMP

ZF

S6-36; 6S-850; 6S-700

#### To apply with Gear Pumps or with Piston Pumps



Option: Electric sensor with mechanical driving Ref. TF4014AMPS or TF4014AMPC

(Dimensions in mm)

		Main Data		
<b>Continuous Torqu</b>	ue (Nm)			300
Intermittent Torqu	ue (Nm)			420
Power (at 1000 rp	m)			42 cv / 32 kW
<b>Mounting Positio</b>	n			Rear
Pump Rotation				Right Hand
Weight (kg)				7,5
PTO internal ratio				1:1,32
Indicative ratio from	om motor to PTO	s output		
		•		
6-S-850 / 6.72-0.79	1 : 0.700	S6-36 / 6.06	1 : 0.77	70
/ 6.93-0.80	1 : 0.673	/ 6.93 - 0.80	1 : 0.67	73
/ 7.43-1.00	1 : 0.634	/ 7.43 - 1.00	1 : 0.63	34
/ 8.97-1.00	1 : 0.530	/ 8.97 - 1.00	1 : 0.53	30
		/ 7.43 - 0.85+GV36	High: 1:0	0.740 Normal: 1 : 0.630
		/ 8.97 - 0.83+GV36		0.630 Normal: 1 : 0.520

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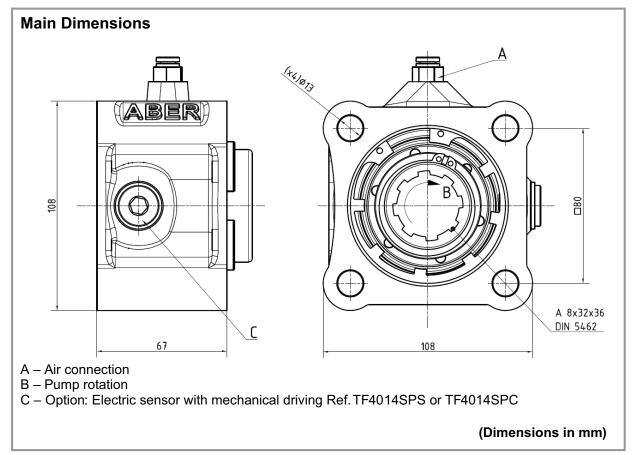
Relation 1:1

Ref. TF4014SP

ZF

\$6-36; 6\$-700; 6A\$-700; 6\$-850

#### To apply with Gear Pumps or Piston Pumps

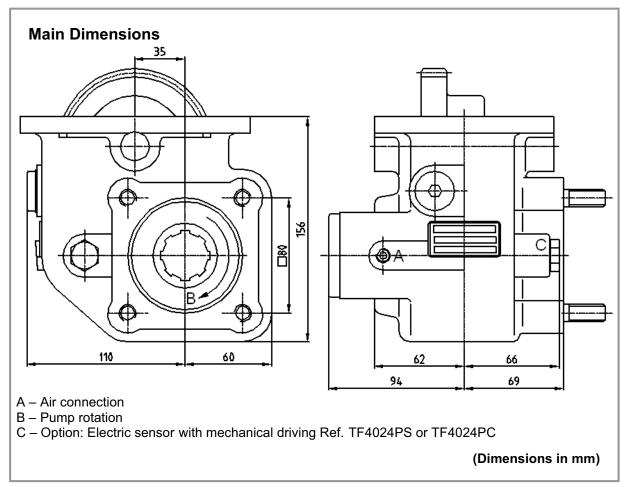


		Main Data		
<b>Continuous Torc</b>	jue (Nm)			600
Intermittent Toro	ue (Nm)			720
Power (at 1000 r	pm)			85 cv / 63 kW
<b>Mounting Position</b>	on			Rear
Pump Rotation				Left Hand
Weight (kg)				2.4
PTO internal rati	0			1:1
Indicative ratio f	rom motor to PTO	's output		
6S-850 / 6.72-0.79	1 : 0.530	S6-36 / 6.06	1 : 0.583	
/ 6.93-0.80	1 : 0.510	/ 6.93 - 0.80	1 : 0.510	
/ 7.43-1.00	1 : 0.480	/ 7.43 - 1.00	1 : 0.480	
/ 8.51-1.00	1 : 0.420	/ 8.97 - 1.00	1 : 0.401	
/ 8.97-1.00	1 : 0.401	/ 7.43 - 0.85+GV36	High: 1: 0.56	60 Normal: 1 : 0.477
		/ 8.97 - 0.83+GV36	High: 1: 0.47	77 Normal: 1 : 0.393
6S-700 / 6.02-0.79	1 : 0.570	6AS-700 TO/ 6.02-0.79	1 : 0.570	

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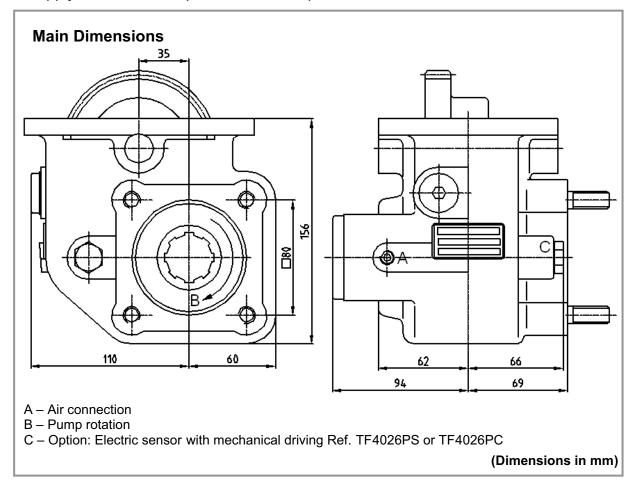
POWER TAKE OFFS		Ref. TF4024P
ZF	S5-42/5.72	



Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 rpm)	42 cv / 32 kW	
Mounting Position	Left	
Pump Rotation	Left Hand	
Weight (kg)	12	
PTO internal ratio	1:1,59	
Indicative ratio from motor to PTO's output	1:1,20	



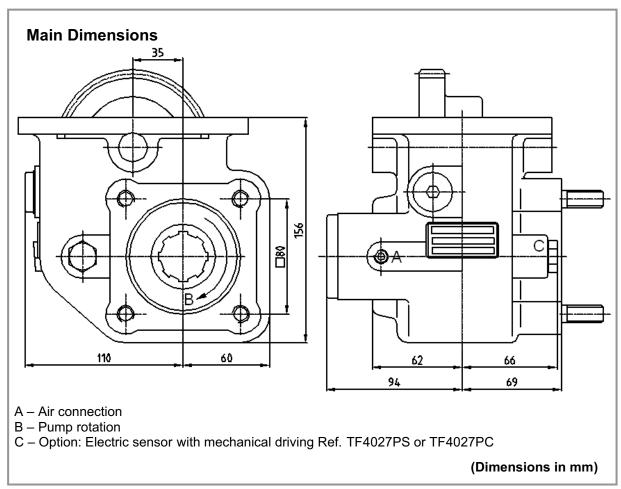
	POWER TAKE OFFS	Ref. TF4026P
ZF	S5-42/4.65	



Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,59
Indicative ratio from motor to PTO's output	1:1,66



	POWER TAKE OFFS	Ref. TF4027P
ZF	S5-42/7.55	

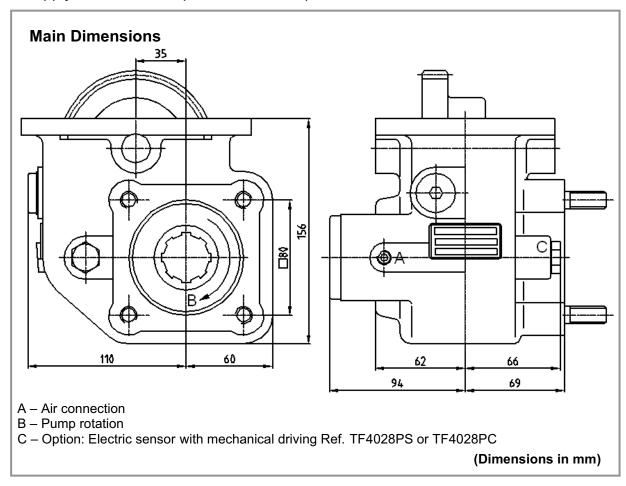


Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 rpm)	42 cv / 32 kW	
Mounting Position	Left	
Pump Rotation	Left Hand	
Weight (kg)	12	
PTO internal ratio	1:1,33	
Indicative ratio from motor to PTO's output	1:1	



POWER TAKE OFFS	Ref. TF4028P

**ZF** \$5-42/6.56



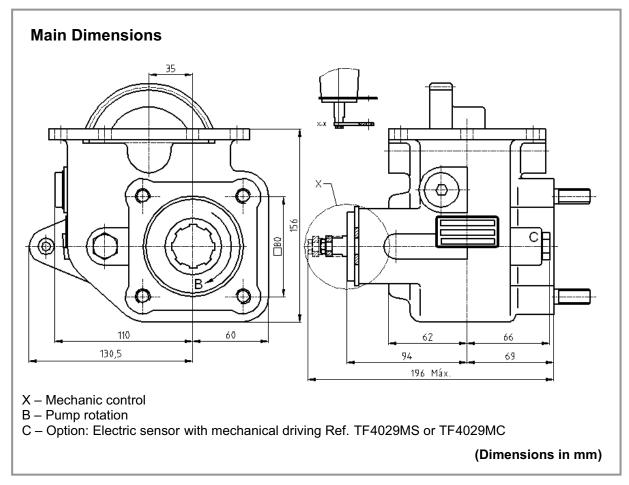
Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,36
Indicative ratio from motor to PTO's output	



Ref. TF4029M

ZF

5S-200; 5S-300; 2830.5 Mechanic Control



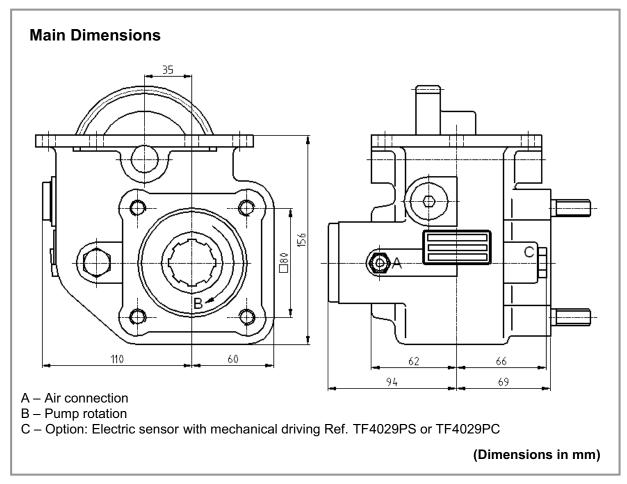
Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,65
Indicative ratio from motor to PTO's output	1:1,24



Ref. TF4029P

ZF

5S-200; 5S-300; 2830.5 Pneumatic Control



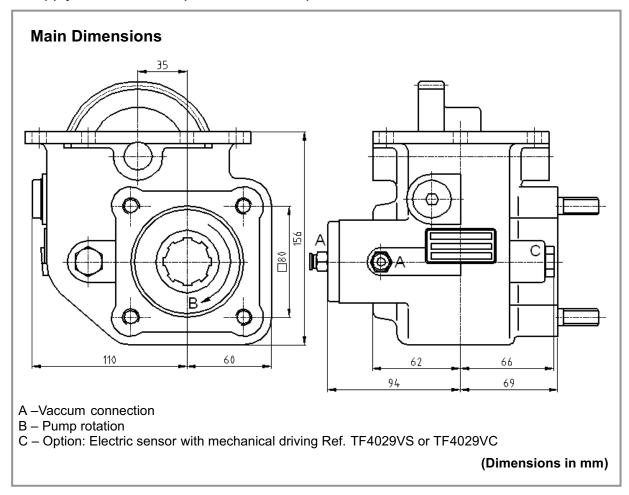
Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,65
Indicative ratio from motor to PTO's output	1:1,24



Ref. TF4029V

ZF

5S-200; 5S-300; 2830.5 Vacuum Control



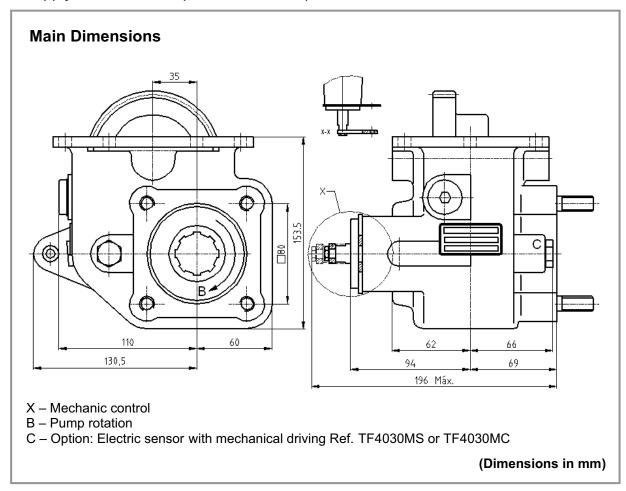
Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 rpm)	42 cv / 32 kW	
Mounting Position	Left	
Pump Rotation	Left Hand	
Weight (kg)	12	
PTO internal ratio	1:1,65	
Indicative ratio from motor to PTO's output	1:1,24	



Ref. TF4030M

ZF

6S-300; 6S-350 Mechanic Control



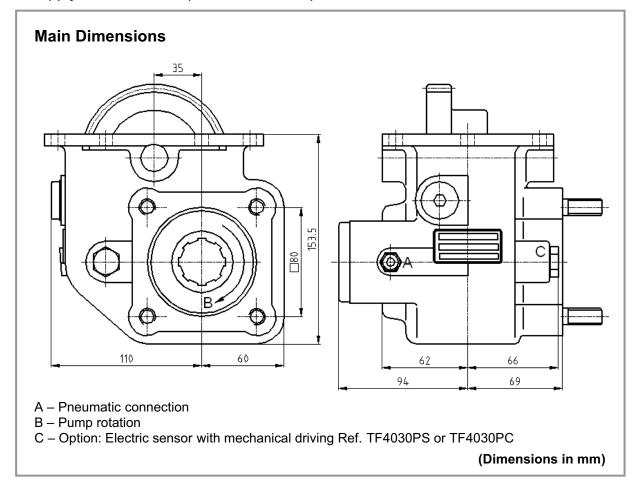
Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,58
Indicative ratio from motor to PTO's output	1:1,05



Ref. TF4030P

ZF

6S-300; 6S-350 Pneumatic Control

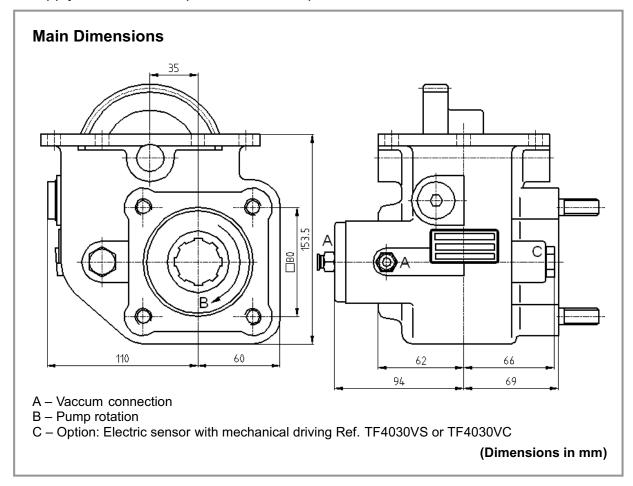


Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (Kg)	12
PTO internal ratio	1.1,58
Indicative ratio from motor to PTO's output	1:1,05



Ref. TF4030V

**ZF** 6S-300 ; 6S-350 Vacuum Control



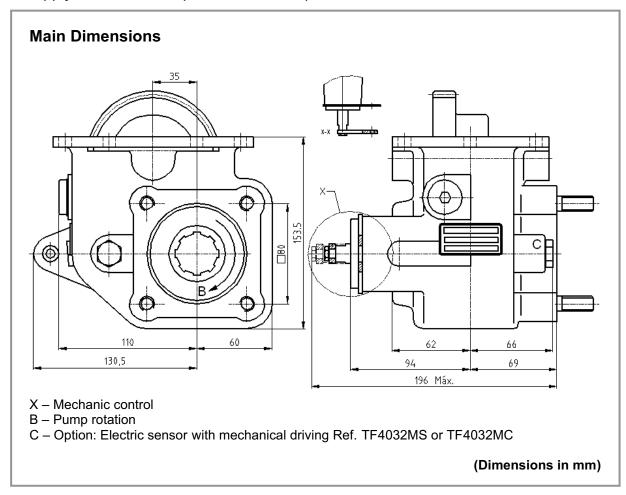
Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,58
Indicative ratio from motor to PTO's output	1:1,05



Ref. TF4032M

ZF

6S-380; 6S-400; 2840.6 Mechanic Control



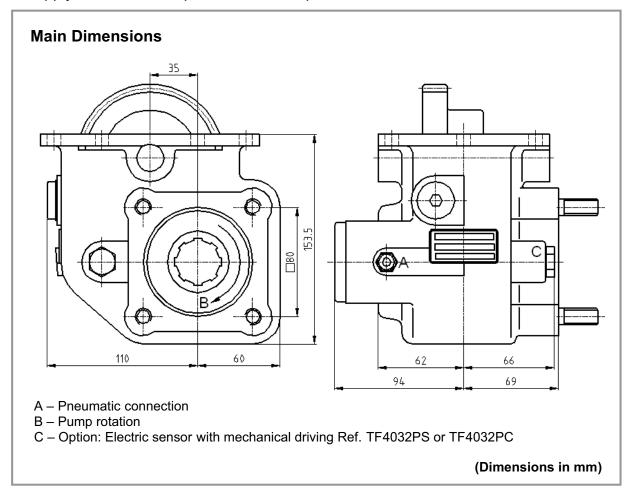
Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,55
Indicative ratio from motor to PTO's output	1:1



Ref. TF4032P

ZF

6S-380; 6S-400; 2840.6 Pneumatic Control



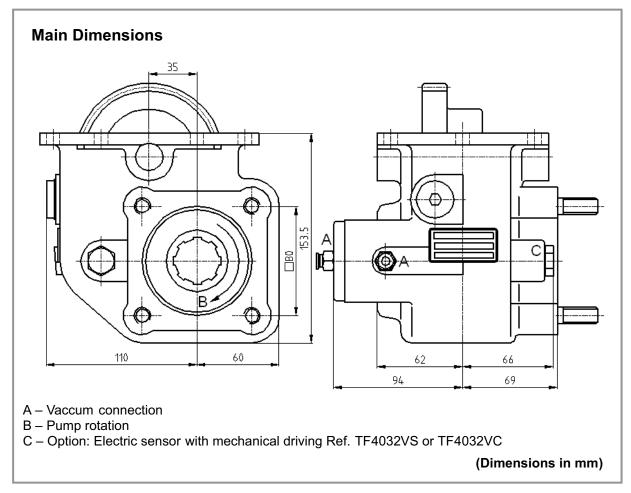
Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 rpm)	42 cv / 32 kW	
Mounting Position	Left	
Pump Rotation	Left Hand	
Weight (kg)	12	
PTO internal ratio	1:1,55	
Indicative ratio from motor to PTO's output	1:1	



Ref. TF4032V

ZF

6S-380; 6S-400; 2840.6 Vacuum Control



Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Left
Pump Rotation	Left Hand
Weight (kg)	12
PTO internal ratio	1:1,55
Indicative ratio from motor to PTO's output	1:1



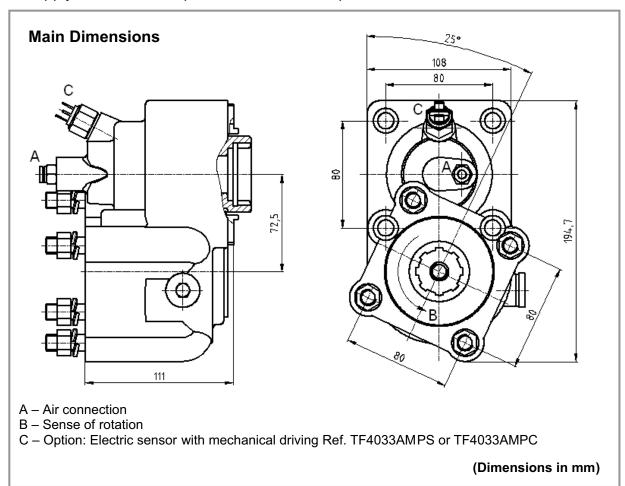
Relation 1:1

Ref. TF4033AMP

S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

#### To apply with Gear Pumps or with Piston Pumps

ZF



Main Data		
Continuous Torque (Nm)	500	
Intermittent Torque (Nm)	550	
Power (at 1000 rpm) 69 cv / 5		
Mounting Position Rear		
Pump Rotation Right Hand		
Weight (kg) 11		
PTO internal ratio 1:1		
Indicative ratio from motor to PTO's output		
S5-50 / 5.30		

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Relation 1:1

Ref. TF4033AMP

**ZF** 6S-8

S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

Engine to PTO ratio		
S5-90 GPA 1: 0.890		
S6-65 / 6.37 1 : 0.650		
/ 6.70 1 : 0.620		
/ 7.00+GV70 / 7.67 High: 1 : 0.456 Normal: 1 : 0.365		
/7.40 1: 0.562		
/ 7.52 1 : 0.555		
/ 9.00 1 : 0.462		
/ 7.97+GV80 / 6.70 High: 1 : 0.620 Normal: 1 : 0.525		
/ 9.00+GV80 / 6.70 High: 1 : 0.620 Normal: 1 : 0.462		
/ 9.00+GV80 / 7.52 High:1 : 0.554 Normal: 1 : 0.462		
00.00 17.00 4.0 4.0 500		
S6-66		
/ 9.06-1.0 1:0.416		
\$6-70 / 6.80 1 : 0.514		
/ 6.80+GV70 / 5.71 High: - 1 : 0.612 Normal: - 1 : 0.514		
/ 7.36 1 : 0.478		
/7.921:0.441		
/ 9.03 1 : 0.387		
/ 9.59 1 : 0.365		
S6-75 / 6.70+GV80 / 7.52 Normal: 1 : 0.620 Low: 1 : 0.554		
S6-80 / 5.03 1 : 0.780		
/ 5.66 1:0.740		
/ 5.66+GV80 / 7.52 High: - 1 : 0.738 Normal: - 1 : 0.556		
/ 6.10 1 : 0.688		
/ 6.70 1 : 0.620 / 6.70+GV80 / 5.30 High: 1 : 0.787 Normal: 1 : 0.620		
/ 6.90 1 : 0.515		
/ 7.35 1 : 0.552		
/7.41 - 1:0.563		
/ 7.53 1 : 0.555		
/ 7.67 1 : 0.540		
/ 7.67+GV80 / 6.70 High: 1 : 0.622 Normal: 1 : 0.543		
/ 7.90 1 : 0.525		
/ 9.00 1 : 0.460		
/ 9.00+GV80 / 5.30 High:1 : 0.787 Normal: 1 : 0.462		
/ 9.00+GV80 / 7.48 High:1 : 0.562 Normal: 1 : 0.462		
/ 9.00+GV80 / 7.52 High:1 : 0.554 Normal: 1 : 0.462		
\$6-90 \ \ \ \ \ 5.67  \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
/ 5./4 1:0./40		
/ 6.37 1 : 0.740 / 6.98 1 : 0.612		
/ 7.03 1 : 0.603		
/ 7.03 - 1 : 0.603 / 7.03+GV90 / 5.67 High: 1 : 0.750 Normal: 1 : 0.603		
/7.03+GV90/5.07 High: -1: 0.735 Normal: -1: 0.600		
/ 7.40 1 : 0.575		
/ 9.01 1 : 0.470		
/ 9.01+GV90 / 7.40 High:1 : 0.573 Normal: 1 : 0.471		
, and the second		
6S-800 TO /6.58-0.781 : 0.530		
6AS-800 TO /6.58-0.781 : 0.530		
6S-1000 TO /6.75-0.781 : 0.530		
6AS-1000 TO /6.75-0.781 : 0.530		
00.4000 TD 17.70.4.00		
6S-1200 TD /7.72-1.001: 0.540		
6S-1200 TO /6.75-0.831 : 0.620		

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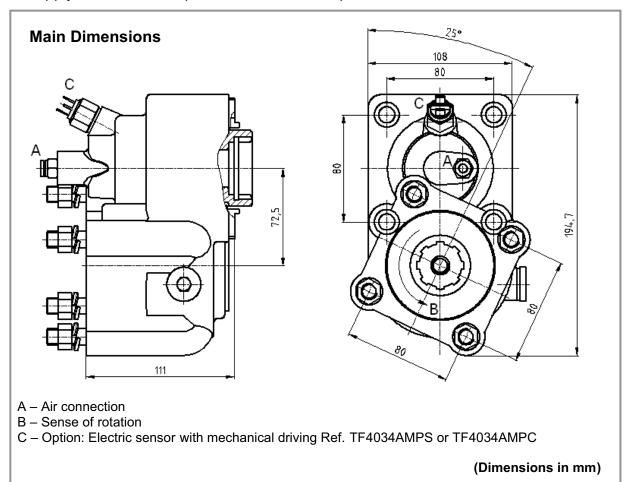
**Relation 1:1,73** 

Ref. TF4034AMP

\$5-50; \$5-90; \$6-65; \$6-66; \$6-70; \$6-75; \$6-80; \$6-90; 6S-800 TO ; 6AS-800 TO ; 6S-1000 TO ; 6AS-1000 TO ; 6S-1200 TD/TO REINFORCED

#### To apply with Gear Pumps or with Piston Pumps

ZF



Main Data		
Continuous Torque (Nm)	350	
Intermittent Torque (Nm)	450	
Power (at 1000 rpm)	48 cv / 36 kW	
Mounting Position Rear		
Pump Rotation Right Hand		
Weight (kg) 11		
PTO internal ratio 1:1,73		
Indicative ratio from motor to PTO's output		
\$5-50 / 5.30		
/ 5.50 1 : 1.064		
/ 6.20 1 : 0.943		
/ 6.61 1 : 0.882		
/ 6.61+GV80 / 5.30 High: 1 : 1.102 Normal: 1 : 0.882		
/8.02 1:0.730		
/ 8.02+GV80 / 6.20 High:1 : 0.943 Normal: 1 : 0.728		

ABER is constantly engaged in improving its products and, therefore, reserves itself the right to modify without any further notice the characteristics shown The gear boxes are in constant change; therefore, ABER is not to be held responsible for any damage resulting from wrong application or application of outdated material



**Relation 1:1,73** 

Ref. TF4034AMP

ZF

S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

Engine to P	TO ratio
S5-90 GPA	1 : 1.540
00.05.10.07	4 . 4 405
S6-65 / 6.37 / 6.70	1 : 1.125 1 : 1.073
	70 / 7.67 High: 1 : 0.789 Normal: 1 : 0.631
/ 7.40	1 : 0.972
/ 7.52	1 : 0.960
/ 9.00	1 : 0.799
	80 / 6.70 High: - 1 : 1.073 Normal: - 1 : 0.908
	80 / 6.70 High: - 1 : 1.073 Normal: - 1 : 0.799
	80 / 7.52 High:1 : 0.958 Normal: 1 : 0.799
00.00.17.00.10	4.0000
/ 9.06-1.0	1 : 0.720
S6-70 / 6.80	1 : 0.889
	70 / 5.71 High: - 1 : 1.059 Normal: - 1 : 0.889
/ 7.36	1 : 0.827
/ 7.92	1 : 0.763
/ 9.03	1 : 0.670
/ 9.59	1 : 0.631
S6 75 / 6 70 ( O )	/80 / 7.52 Normal: 1 : 1.073 Low: 1 : 0.958
30-13 / 0./U+GV	700 / 1.32   NUIIIIal 1 . 1.073   LOW 1 . 0.930
S6-80 / 5.03	1 : 1.349
/ 5.66	1 : 1.280
	80 / 7.52 High: 1 : 1.277 Normal: 1 : 0.962
/ 6.10	1 : 1.190
/ 6.70	1:1.073
/ 6.70+GV	80 / 5.30 High: 1 : 1.362 Normal: 1 : 1.073
	1 : 0.891
/ 7.35	1 : 0.955
/ 7.41	1 : 0.974
/ 7.53	1 : 0.960
/ 7.67	1 : 0.934
	80 / 6.70 High: - 1 : 1.076 Normal: - 1 : 0.939
/ 7.90	1:0.908
/ 9.00	1:0.796
	80 / 5.30 High:1 : 1.362 Normal: 1 : 0.799 80 / 7.48 High:1 : 0.972 Normal: 1 : 0.799
	80 / 7.52 High:1 : 0.958 Normal: 1 : 0.799
7 9.001 0	00 / 1.32 Tilgh. : -1 : 0.330 Normal. :- 1 : 0.733
S6-90 / 5.67	1 : 1.298
/ 5.74	1 : 1.280
/ 6.37	1 : 1.280
/ 6.98	1 : 1.059
/ 7.03	1 : 1.043
	90 / 5.67 High: 1 : 1.298 Normal: 1 : 1.043
	90 / 5.74 High: - 1 : 1.272 Normal: - 1 : 1.038
/ 7.40	1 : 0.995
/ 9.01	1:0.813
/ 9.01+GV	90 / 7.40 High:1 : 0.991 Normal: 1 : 0.815
6S-800 TO /6.5	58.0.78 _ 1 · 0.017
	58-0.781 : 0.917 58-0.781 : 0.917
UAG-000 10 /0.	00-0.101.0.31 <i>t</i>
6S-1000 TO /6.7	75-0.781:0.917
6AS-1000 TO /6.	
6S-1200 TD /7.7	
6S-1200 TO /6.7	

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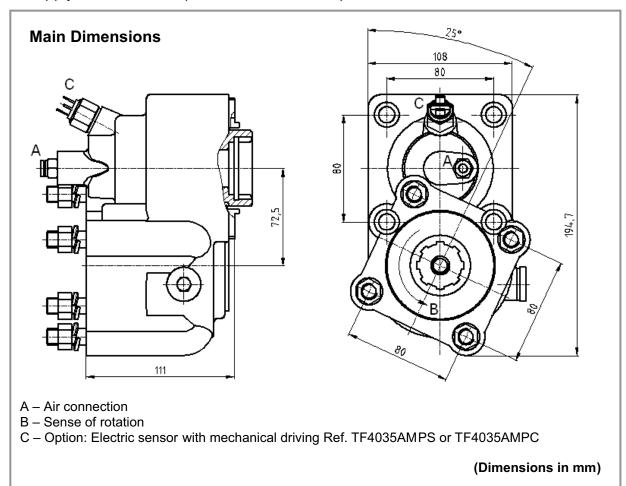
**Relation 1:1,56** 

Ref. TF4035AMP

S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

#### To apply with Gear Pumps or with Piston Pumps

ZF



Main Data		
Continuous Torque (Nm)	400	
Intermittent Torque (Nm) 500		
Power (at 1000 rpm) 55 cv / 40		
Mounting Position Rear		
Pump Rotation Right Hand		
Weight (kg)		
PTO internal ratio 1:1,56		
Indicative ratio from motor to PTO's output		
S5-50 / 5.30 1 : 1.019		
/ 5.50 1 : 0.959		
/ 6.20 1 : 0.850		
/ 6.61 1 : 0.796		
/ 6.61+GV80 / 5.30 High: 1 : 0.994 Normal: 1 : 0.796		
/ 8.02 1 : 0.658		
/ 8.02+GV80 / 6.20 High:1 : 0.850 Normal: 1 : 0.657		

ABER is constantly engaged in improving its products and, therefore, reserves itself the right to modify without any further notice the characteristics shown The gear boxes are in constant change; therefore, ABER is not to be held responsible for any damage resulting from wrong application or application of outdated material



ZF

## **Power Take Offs**

**Relation 1:1,56** 

Ref. TF4035AMP

S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

Engine to P	Engine to PTO ratio	
S5-90 GPA	1 : 1.388	
S6-65 / 6.37	1 : 1.014	
/ 6.70	1 : 0.967	
	/70 / 7.67 High: 1 : 0.711 Normal: 1 : 0.569	
/ 7.40	. <del>-</del> 1 : 0.877	
/ 7.52	1 : 0.866	
/ 9.00	1 : 0.721	
	/80 / 6.70 High: 1 : 0.967 Normal: 1 : 0.819	
/ 9.00+G\	/80 / 6.70 High: 1 : 0.967 Normal: 1 : 0.721	
/ 9.00+G\	/80 / 7.52 High:1 : 0.864 Normal: 1 : 0.721	
00.00.17.00.4.0	4.0044	
S6-66 / 7.36-1.0 / 9.06-1.0		
/ 9.00-1.0	1 . 0.049	
S6-70 / 6.80	1 : 0.802	
	/70 / 5.71 High: 1 : 0.955 Normal: 1 : 0.802	
/ 7.36	1 : 0.746	
/ 7.92	1 : 0.688	
/ 9.03	1 : 0.604	
/ 9.59	1 : 0.569	
S6-75 / 6.70+G\	√80 / 7.52 Normal: 1 : 0.967 Low: 1 : 0.864	
S6-80 / 5.03	1:1.217	
/ 5.66	1 : 1.154	
	/80 / 7.52 High: - 1 : 1.151 Normal: - 1 : 0.867 1 : 1.073	
/ 6.10	1 : 1.073 1 : 0.967	
	/80 / 5.30 High: 1 : 1.228 Normal: 1 : 0.967	
/ 6.90	1 : 0.803	
/ 7.35	1 : 0.861	
/ 7.41	1 : 0.878	
/ 7.53	1 : 0.866	
/ 7.67	1 : 0.842	
/ 7.67+G\	/80 / 6.70 High: 1 : 0.970 Normal: 1 : 0.847	
/ 7.90	1 : 0.819	
/ 9.00	1 : 0.718	
	/80 / 5.30 High:1 : 1.228 Normal: 1 : 0.721	
	/80 / 7.48 High:1: 0.877 Normal:1: 0.721	
/ 9.00+G\	/80 / 7.52 High:1 : 0.864 Normal: 1 : 0.721	
S6-90 / 5.67	1 : 1.170	
/ 5.74	1 : 1.176	
/ 6.37	1 : 1.154	
/ 6.98	1 : 0.955	
/ 7.03	1 : 0.941	
	/90 / 5.67 High: 1 : 1.170 Normal: 1 : 0.941	
	/90 / 5.74 High: - 1 : 1.147 Normal: 1 : 0.936	
/ 7.40	- 1 : 0.897	
/ 9.01	1 : 0.733	
/ 9.01+G\	/90 / 7.40 High:1 : 0.894 Normal: 1 : 0.735	
00 000 TO 12	50.0.70	
	58-0.781 : 0.827	
6AS-800 TO /6.	.58-0.781: 0.827	
6S-1000 TO /6.	75-0.781:0.827	
6AS-1000 TO /6.		
5/30-1000 10 /0.	11 0 0 1 0 1 1 1 0 0 0 Z I	
6S-1200 TD /7.	72-1.001:0.872	
6S-1200 TO /6.		

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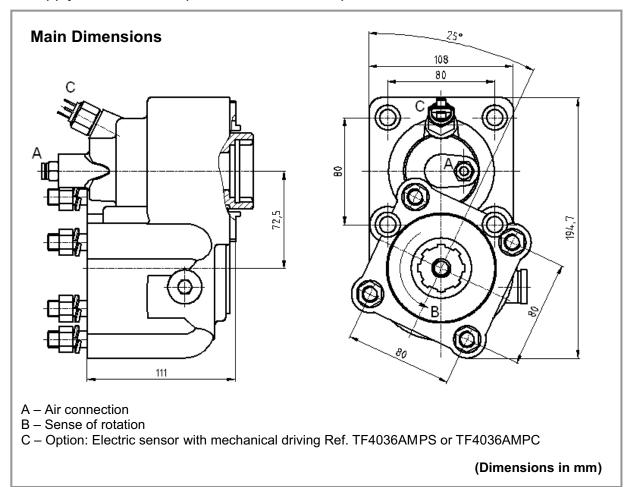
**Relation 1:1,35** 

Ref. TF4036AMP

S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

To apply with Gear Pumps or with Piston Pumps

ZF



Main Data					
Continuous Torque (Nm)	450				
Intermittent Torque (Nm)	500				
Power (at 1000 rpm)	62 cv / 46 kW				
Mounting Position	Rear				
Pump Rotation	Right Hand				
Weight (kg)	11				
PTO internal ratio	1:1,35				
Indicative ratio from motor to PTO's output					
S5-50 / 5.30 1 : 0.882					
/ 5.50 1 : 0.830					
/ 6.20 1 : 0.736					
/ 6.61 1 : 0.689					
/ 6.61+GV80 / 5.30 High: 1 : 0.860 Normal: 1 : 0.689					
/ 8.02 1 : 0.570					
/ 8.02+GV80 / 6.20 High:1 : 0.736 Normal: 1 : 0.568					



ZF

# **Power Take Offs**

**Relation 1:1,35** 

Ref. TF4036AMP

\$5-50; \$5-90; \$6-65; \$6-66; \$6-70; \$6-75; \$6-80; \$6-90; 6S-800 TO; 6AS-800 TO; 6S-1000 TO; 6AS-1000 TO; 6S-1200 TD/TO REINFORCED

Engine to PTO ratio	
S5-90 GPA 1 : 1.202	
S6-65 / 6.37 1 : 0.878	
/ 6.70 1 : 0.837	
/ 7.00+GV70 / 7.67 High: 1 : 0.616 Normal: 1 : 0.493	
/ 7.40 1 : 0.759	
/ 7.52 1 : 0.749	
/ 9.00 1 : 0.624	
/ 7.97+GV80 / 6.70 High: 1 : 0.837 Normal: 1 : 0.709	
/ 9.00+GV80 / 6.70 High: 1 : 0.837 Normal: 1 : 0.624	
/ 9.00+GV80 / 7.52 High:1 : 0.748 Normal: 1 : 0.624	
\$6-66 / 7.36-1.0 1 : 0.705	
/ 9.06-1.0 1 : 0.562	
S6-70 / 6.80 1 : 0.694	
/ 6.80+GV70 / 5.71 High: - 1 : 0.826 Normal: 1 : 0.694	
/7.36 1 : 0.645	
/7.92 1 : 0.595	
/ 9.03 1 : 0.522	
/ 9.59 1 : 0.493	
S6-75 / 6.70+GV80 / 7.52 Normal: 1 : 0.837 Low: 1 : 0.748	
50-73 / 0.70+GV00 / 7.32 Normal 1 . 0.637 Low 1 . 0.746	
\$6-80 / 5.03 1 : 1.053	
/ 5.66 1 : 0.999	
/ 5.66+GV80 / 7.52 High: - 1 : 0.996 Normal: - 1 : 0.751	
/ 6.10 1 : 0.929	
/ 6.70 1 : 0.837	
/ 6.70+GV80 / 5.30 High: - 1 : 1.062 Normal: - 1 : 0.837	
/ 6.90 1 : 0.695	
/ 7.35 1 : 0.745	
/7.41 1:0.760	
/7.53 1:0.749	
/7.67 1: 0.729	
/ 7.67+GV80 / 6.70 High: 1 : 0.840 Normal: 1 : 0.733	
/ 7.90 1 : 0.709	
/ 9.00 1 : 0.621	
/ 9.00+GV80 / 5.30 High:1 : 1.062 Normal: 1 : 0.624	
/ 9.00+GV80 / 7.48 High:1 : 0.759 Normal: 1 : 0.624	
/ 9.00+GV80 / 7.52 High:1 : 0.748 Normal: 1 : 0.624	
· · · · · · · · · · · · · · · · · · ·	
\$6-90 / 5.67 1 : 1.013	
/ 5.74 1 : 0.999	
/ 6.37 1 : 0.999	
/ 6.98 1 : 0.826	
/ 7.03 1 : 0.814	
/ 7.03+GV90 / 5.67 High: 1 : 1.013 Normal: 1 : 0.814	
/ 7.03+GV90 / 5.74 High: 1 : 01992 Normal: 1 : 0.810	
/7.401:0.776	
/ 9.01 1 : 0.635	
/ 9.01+GV90 / 7.40 High:1 : 0.774 Normal: 1 : 0.636	
00 000 TO 10 50 0 TO 10 10 10 10 10 10 10 10 10 10 10 10 10	
6S-800 TO /6.58-0.781:0.716	
6AS-800 TO /6.58-0.781 : 0.716	
00 4000 TO 70 70 70 4 + 0 740	
6S-1000 TO /6.75-0.781:0.716	
6AS-1000 TO /6.75-0.781 : 0.716	
6S-1200 TD /7.72-1.001 : 0.729	
6S-1200 TD 77.72-1.001: 0.729 6S-1200 TO 76.75-0.831: 0.837	
-11.0.007	

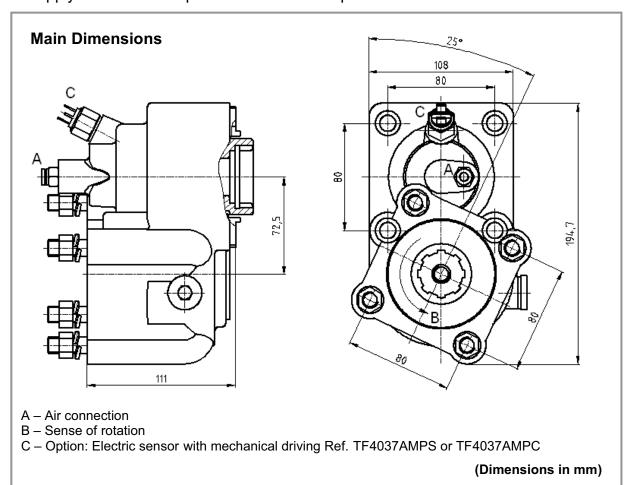


**Relation 1:1,56** 

S6-36; 6S-850; 6S-700 REINFORCED Ref. TF4037AMP

To apply with Gear Pumps or with Piston Pumps

ZF



Main Data						
<b>Continuous Torq</b>	ue (Nm)			400		
Intermittent Torqu	ue (Nm)			500		
Power (at 1000 rp	om)			55 cv / 40 kW		
<b>Mounting Positio</b>	n			Rear		
Pump Rotation				Right Hand		
Weight (kg)				11		
PTO internal ratio	)			1:1,56		
Indicative ratio fr	om motor to PTC	O's output				
6-S-850 / 6.72-0.79	1 : 0.827	S6-36 / 6.06	1 : 0.909			
/ 6.93-0.80	1 : 0.796	/ 6.93 - 0.80	1 : 0.796			
/ 7.43-1.00	1 : 0.749	/ 7.43 - 1.00	1 : 0.749			
/ 8.97-1.00	1 : 0.626	/ 8.97 - 1.00	1 : 0.626			
		/ 7.43 - 0.85+GV36	High: 1 : 0.87	4 Normal: 1 : 0.744		
		/ 8.97 - 0.83+GV36	High: 1: 0.74	4 Normal: 1 : 0.613		



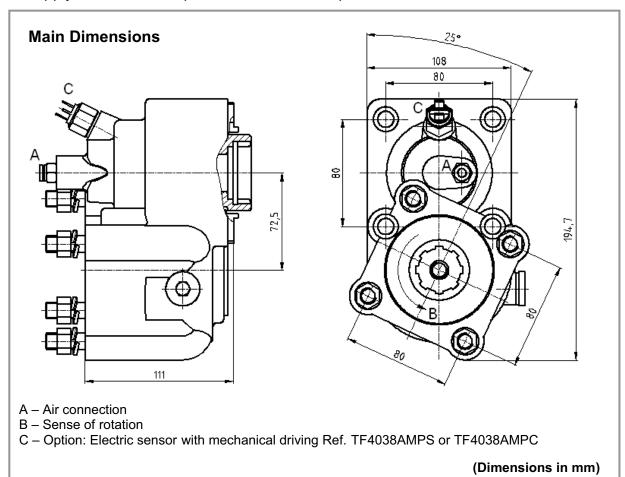
**Relation 1:1,35** 

S6-36; 6S-850; 6S-700 REINFORCED

Ref. TF4038AMP

# To apply with Gear Pumps or with Piston Pumps

ZF



	Main Data		
e (Nm)			450
e (Nm)			550
n)			62 cv / 46 kW
•			Rear
			Right Hand
			11
			1:1,35
m motor to PT	O´s output	·	·
- 1 · 0 716	S6-36 / 6.06	- 1 · 0 787	
1 : 0.689	/ 6.93 - 0.80	1 : 0.589	
1 : 0.648	/ 7.43 - 1.00	1 : 0.648	
1 : 0.541	/ 8.97 - 1.00	1 : 0.541	
	/ 7.43 - 0.85+GV36	High: 1 : 0.75	66 Normal: 1 : 0.644
	/ 8.97 - 0.83+GV36	High: 1: 0.64	14 Normal: 1 : 0.531
	1 : 0.716 1 : 0.689 1 : 0.648	e (Nm) e (Nm) n)  m motor to PTO's output 1: 0.716	e (Nm) e (Nm) n)  m motor to PTO's output 1: 0.716

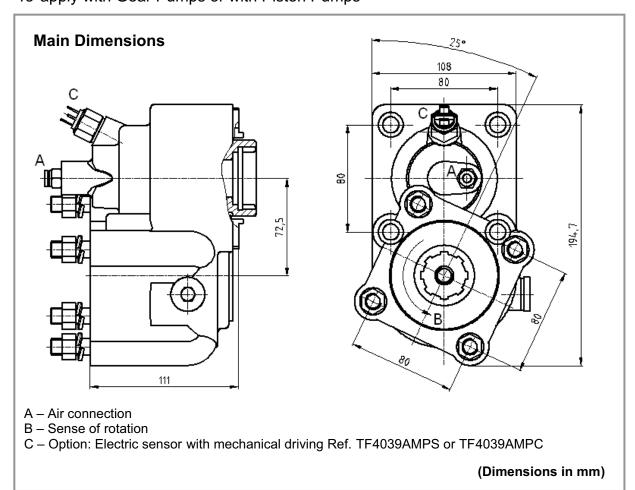


Relation 1:1

S6-36 ; 6S-850 ; 6S-700 REINFORCED Ref. TF4039AMP

To apply with Gear Pumps or with Piston Pumps

ZF



(Nm)			500
(Nm)			550
			69 cv / 51 kW
			Rear
			Right Hand
			11
			1:1
motor to PT	O´s output		
4 0 500		4 0 500	
1 : 0.510	/ 6.93 - 0.80	1 : 0.510	
1 : 0.480	/ 7.43 - 1.00	1 : 0.480	
1 : 0.401	/ 8.97 - 1.00	1 : 0.401	
	/ 7.43 - 0.85+G\	/36 High: 1 : 0.5	60 Normal: 1 : 0.477
	/ 8.97 - 0.83+G\		77 Normal: 1 : 0.393
)	(Nm) ) n motor to PT 1: 0.530 1: 0.510 1: 0.480	1:0.530 S6-36 / 6.06 1:0.510 / 6.93 - 0.80 1:0.480 / 7.43 - 1.00 1:0.401 / 8.97 - 1.00 / 7.43 - 0.85+G\	1:0.530 S6-36 / 6.061:0.5831:0.510 / 6.93 - 0.801:0.5101:0.480 / 7.43 - 1.001:0.4801:0.401 / 8.97 - 1.001:0.401 / 7.43 - 0.85+GV36 High: 1:0.5



**Relation 1:1,73** 

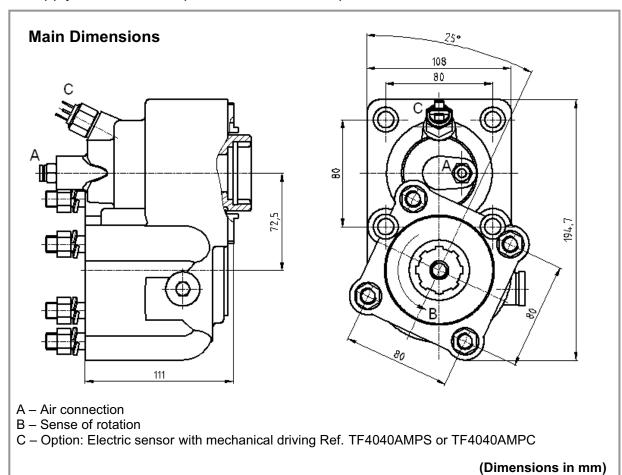
S6-36; 6S-850; 6S-700

Ref. TF4040AMP

REINFORCED

# To apply with Gear Pumps or with Piston Pumps

ZF



		Main Data		
Continuous Torqu	ue (Nm)			400
Intermittent Torqu	ıe (Nm)			500
Power (at 1000 rp	m)			48 cv / 36 kW
<b>Mounting Position</b>	n			Rear
Pump Rotation				Right Hand
Weight (kg)				11
PTO internal ratio				1:1,73
Indicative ratio from	om motor to PTC	D´s output		
6-S-850 / 6.72-0.79	1 : 0.917	S6-36 / 6.06	1 : 1.009	
/ 6.93-0.80	1 : 0.882	/ 6.93 - 0.80	1 : 0.882	
/ 7.43-1.00	1 : 0.830	/ 7.43 - 1.00	1 : 0.830	
/ 8.97-1.00	1 : 0.694	/ 8.97 - 1.00	1 : 0.694	
		/ 7.43 - 0.85+GV36	High: 1: 0.96	9 Normal: 1 : 0.825
		/ 8.97 - 0.83+GV36		5 Normal: 1 : 0.680



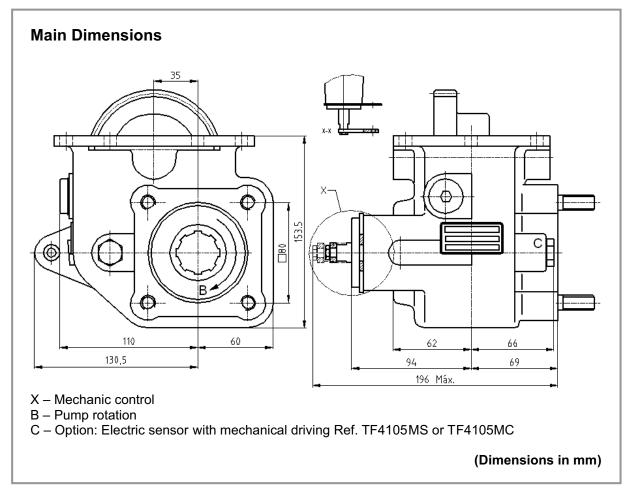
# **POWER TAKE OFFS**

Ref. TF4105M

ZF

6S-420; MO37S6 Mechanic Control

# To apply with Gear Pumps or Piston Pumps



Main Data				
Continuous Torque (Nm)	300			
Intermittent Torque (Nm)	420			
Power (at 1000 rpm)	42 cv / 32 kW			
Mounting Position	Left			
Pump Rotation	Left Hand			
Weight (kg)	12			
PTO internal ratio	1:1,391			
Indicative ratio from motor to PTO's output	1:1,043			



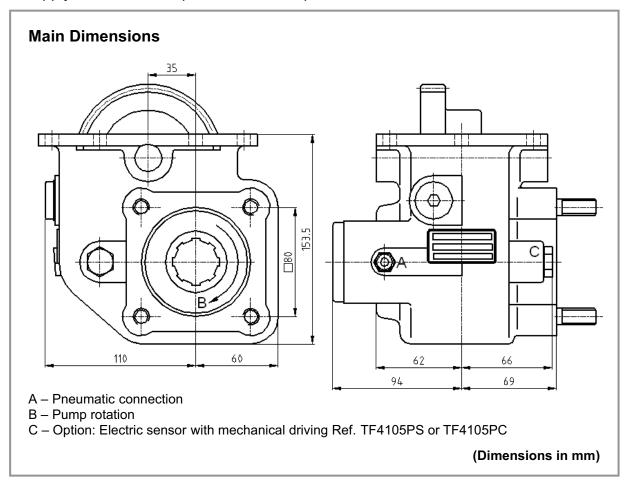
# **POWER TAKE OFFS**

Ref. TF4105P

ZF

6S-420; MO37S6 Pneumatic Control

# To apply with Gear Pumps or Piston Pumps



Main Data				
Continuous Torque (Nm)	300			
Intermittent Torque (Nm)	420			
Power (at 1000 rpm)	42 cv / 32 kW			
Mounting Position	Left			
Pump Rotation	Left Hand			
Weight (kg)	12			
PTO internal ratio	1:1,391			
Indicative ratio from motor to PTO's output	1:1,043			



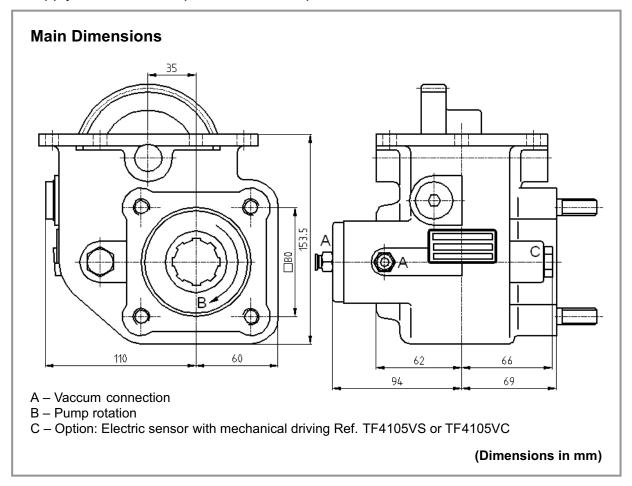
# **POWER TAKE OFFS**

Ref. TF4105V

ZF

6S-420; MO37S6 Vacuum Control

# To apply with Gear Pumps or Piston Pumps



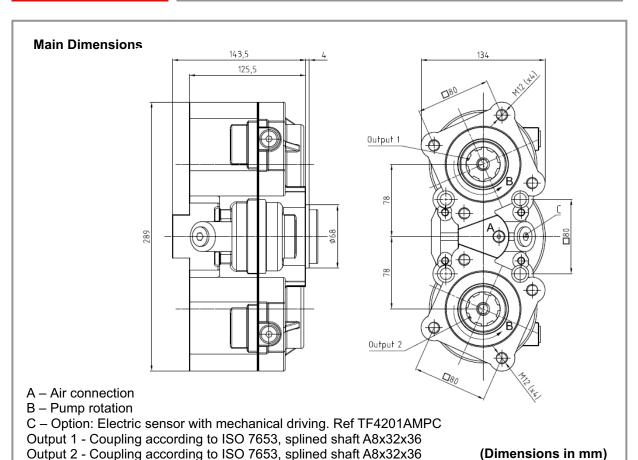
Main Data				
Continuous Torque (Nm)	300			
Intermittent Torque (Nm)	420			
Power (at 1000 rpm)	42 cv / 32 kW			
Mounting Position	Left			
Pump Rotation	Left Hand			
Weight (kg)	12			
PTO internal ratio	1:1,391			
Indicative ratio from motor to PTO's output	1:1,043			



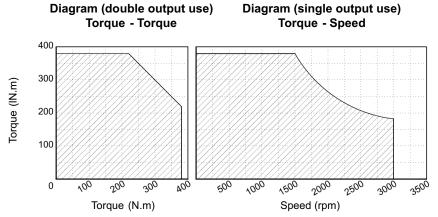
**Relation 1:1,56** 

Ref. TF4201AMP

**ZF** Twin output S5-50; S5-90; S6-65; S6-66; S6-70; S6-75; S6-80; S6-90; 6S-800; 6S-1000



Main Data					
Continuous Torque (Nm) (single use)	380				
Intermittent Torque (Nm) (single use)	460				
Power (at 1000 rpm)	54 cv / 40 kW				
Mounting Position	Rear				
Pump Rotation	Right Hand				
Weight (kg)	17.4				
PTO internal ratio	1:1,56				





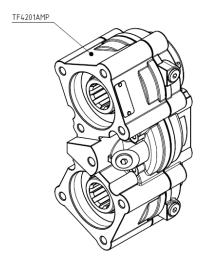
**Relation 1:1,56** 

Ref. TF4201AMP

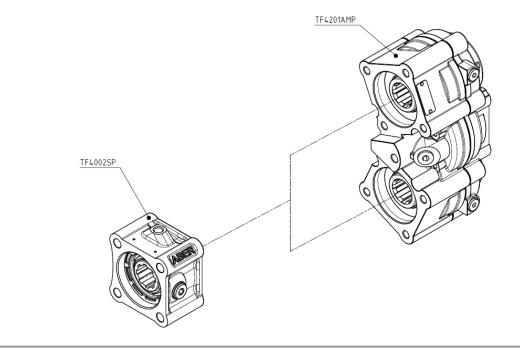
ZF Twin output

 $$55-50\ ; \ S5-90\ ; \ S6-65\ ; \ S6-66\ ; \ S6-70\ ; \ S6-75\ ; \ S6-80\ ; \ S6-90\ ; \\ 6S-800\ ; \ 6S-1000$ 

## Pneumatic engagement for PTO TF4201AMP



### Pneumatic independent engagement for PTO TF4201AMP



To use the two outputs of the power take off TF4201AMP independently it's necessary assembly the PTO TF4002SP (internal ratio: 1:1) in the output(s). To use this option order TF4201AMP+TF4002SP+JUNK4201SPAMP.



**Relation 1:1,56** 

Ref. TF4201AMP

**ZF** Twin output

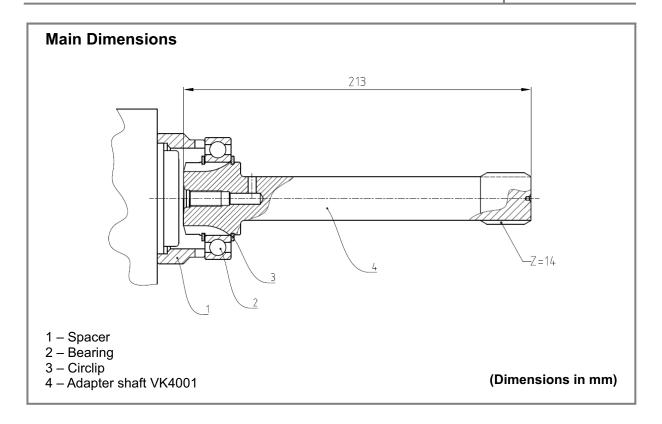
 $$55-50\ ; \ S5-90\ ; \ S6-65\ ; \ S6-66\ ; \ S6-70\ ; \ S6-75\ ; \ S6-80\ ; \ S6-90\ ; \\ 6S-800\ ; \ 6S-1000$ 

Indic	ative rat	n mort oil		TO's output			
				•			
		1 : 1.019					
	/ 5.50	1 : 0.960					
	/ 6.20	1 : 0.850					
	/ 6.61	1 : 0.796					
			h: 1 : 0.994	Normal: 1 : 0.79	96		
		1 : 0.658					
	/ 8.02+GV80	0 / 6.20 Hig	h:1 : 0.850	Normal: 1 : 0.6	57		
35-90	GPA	1 : 1.389					
26 65	/ 6.37	1 - 1 014					
	16.31	1 : 0.967					
	/ 6.70 / 7.00 · O) /7/	1:0.967	l. 4 . 0 744	Normali 4 o F	00		
			n: 1 : 0.711	Normal: 1 : 0.50	09		
		1 : 0.877					
	/ 7.52	1 : 0.866					
		1 : 0.721					
	/ 7.97+GV80	0 / 6.70 Hig	h: 1 : 0.967	Normal: 1 : 0.8	19		
				Normal: 1 : 0.72			
				Normal: 1 : 0.72			
	/7.00.4.0	4 0 0 4 4					
	/ 7.36-1.0						
	/ 9.06-1.0	1 : 0.649					
6-70	/ 6.80	1 : 0.802					
		) / 5.71 Hia	h: 1 : 0.955	Normal: 1 : 0.80	02		
		1 : 0.746					
		_ 1 · 0 688					
	/ 7.92	1 : 0.688					
	/ 7.92 / 9.03	1 : 0.604					
	/ 7.92						
	/ 7.92 / 9.03 / 9.59	1 : 0.604 1 : 0.569	rmal: 1 : 0.9	67 Low: 1 : 0.86	64		
S6-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8	1 : 0.604 1 : 0.569 0 / 7.52 No	rmal: 1 : 0.9	67 Low: 1 : 0.86	64		
S6-75 S6-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8	1 : 0.604 1 : 0.569 0 / 7.52 No	rmal: 1 : 0.9	67 Low: 1 : 0.86	64		
66-75 66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154					
66-75 66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig		67 Low: 1 : 0.86 Normal: 1 : 0.8			
66-75 66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:1.073					
66-75 66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig					
66-75 66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:1.073 1:0.967	h: 1 : 1.151	Normal: 1 : 0.80	67		
6-75 6-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:1.073 1:0.967 0/5.30 Hig	h: 1 : 1.151		67		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 6.90	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:1.073 1:0.967 0/5.30 Hig 1:0.803	h: 1 : 1.151	Normal: 1 : 0.80	67		
6-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 6.90 / 7.35	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.861	h: 1 : 1.151	Normal: 1 : 0.80	67		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70+GV80 / 6.90 / 7.35 / 7.41	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.861 1:0.878	h: 1 : 1.151	Normal: 1 : 0.80	67		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 6.90 / 7.35 / 7.41 / 7.53	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.861 1:0.878 1:0.866	h: 1 : 1.151	Normal: 1 : 0.80	67		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.861 1:0.878 1:0.866 1:0.842	h: 1 : 1.151 h: 1 : 1.228	Normal: 1 : 0.80	67		
66-75 66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.861 1:0.878 1:0.866 1:0.842 0/6.70 Hig	h: 1 : 1.151 h: 1 : 1.228	Normal: 1 : 0.80	67		
6-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.70 / 6.70+GV80 / 6.90 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.861 1:0.878 1:0.866 1:0.842 0/6.70 Hig 1:0.819	h: 1 : 1.151 h: 1 : 1.228	Normal: 1 : 0.80	67		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.878 1:0.866 1:0.842 0/6.70 Hig 1:0.819 1:0.819	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970	Normal: 1 : 0.80	67		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.878 1:0.866 1:0.842 0/6.70 Hig 1:0.819 1:0.819	h: 1 : 1.151 h: 1 : 1.228	Normal: 1 : 0.80	67 67 47		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.861 1:0.878 1:0.866 1:0.842 0/6.70 Hig 1:0.819 1:0.718	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86	67 67 47		
6-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00 / 9.00+GV80 / 9.00+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.866 1:0.842 0/6.70 Hig 1:0.819 1:0.819 1:0.718 0/5.30 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21		
6-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00 / 9.00+GV80 / 9.00+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:0.967 0/5.30 Hig 1:0.803 1:0.866 1:0.842 0/6.70 Hig 1:0.819 1:0.819 1:0.718 0/5.30 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86	67 67 47 21 21		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.70 / 6.70+GV80 / 6.90 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00+GV80 / 9.00+GV80 / 9.00+GV80	1:0.6041:0.569 0 / 7.52 No1:1.2171:1.154 0 / 7.52 Hig1:1.0.967 0 / 5.30 Hig1:0.8611:0.8661:0.842 0 / 6.70 Hig1:0.718 0 / 5.30 Hig 0 / 7.48 Hig 0 / 7.52 Hig1:1.170	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.70 / 6.70+GV80 / 6.90 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00 / 9.00+GV80 / 9.00+GV80	1:0.604 1:0.569 0/7.52 No 1:1.217 1:1.154 0/7.52 Hig 1:1.073 1:0.967 0/5.30 Hig 1:0.803 1:0.866 1:0.842 0/6.70 Hig 1:0.819 1:0.718 0/7.48 Hig 0/7.52 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21		
66-90	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV8 / 6.10 / 6.70 / 6.70+GV8 / 6.90 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV8 / 7.90 / 9.00+GV8 / 9.00+GV8 / 9.00+GV8 / 5.67 / 5.74	1:0.6041:0.569 0/7.52 No1:1.2171:1.154 0/7.52 Hig1:0.967 0/5.30 Hig1:0.8611:0.8661:0.842 0/6.70 Hig1:0.718 0/5.30 Hig 0/7.48 Hig 0/7.52 Hig1:1.1701:1.154	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21		
66-90	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 6.90 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00+GV80 / 9.00+GV80 / 9.00+GV80 / 5.67 / 5.74 / 6.37	1:0.6041:0.569 0/7.52 No1:1.2171:1.154 0/7.52 Hig1:0.967 0/5.30 Hig1:0.8611:0.8661:0.842 0/6.70 Hig1:0.718 0/5.30 Hig 0/7.48 Hig 0/7.52 Hig1:1.1701:1.1541:1.154	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 9.00 / 9.00+GV80 / 9.00+GV80 / 9.00+GV80 / 5.67 / 5.74 / 6.37 / 6.98	1:0.6041:0.569 0/7.52 No1:1.2171:1.154 0/7.52 Hig1:0.967 0/5.30 Hig1:0.8611:0.8661:0.842 0/6.70 Hig1:0.718 0/5.30 Hig 0/7.48 Hig 0/7.52 Hig1:1.1701:1.1541:0.955	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.86  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21		
66-80	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.10 / 6.70+GV80 / 6.90 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 9.00 / 9.00+GV80 / 9.00+GV80 / 9.00+GV80 / 5.67 / 5.74 / 6.37 / 6.98 / 7.03	1:0.6041:0.569 0/7.52 No1:1.2171:1.1541:0.9511:0.967 0/5.30 Hig1:0.8611:0.8661:0.842 0/6.70 Hig1:0.8191:0.718 0/7.48 Hig 0/7.48 Hig 0/7.52 Hig1:1.1541:1.1541:0.9551:0.941	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877 h:1 : 0.864	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.75  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21 21		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00+GV80 / 9.00+GV80 / 9.00+GV80 / 5.67 / 5.74 / 6.37 / 6.98 / 7.03+GV90	1:0.6041:0.569 0/7.52 No1:1.2171:1.154 0/7.52 Hig1:0.967 0/5.30 Hig1:0.8661:0.8661:0.842 0/6.70 Hig1:0.718 0/5.30 Hig 0/7.52 Hig 0/7.52 Hig 0/7.52 Hig1:1.1701:1.1541:0.9551:0.941 0/5.67 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h: 1 : 1.228 h: 1 : 0.877 h: 1 : 0.864	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.75  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21 21		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV80 / 6.70 / 6.70+GV80 / 6.70 / 6.70+GV80 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV80 / 7.90 / 9.00+GV80 / 9.00+GV80 / 9.00+GV80 / 5.67 / 5.74 / 6.37 / 6.98 / 7.03+GV90 / 7.03+GV90 / 7.03+GV90	1:0.6041:0.569 0/7.52 No1:1.2171:1.1541:0.8781:0.8611:0.8661:0.8661:0.842 0/6.70 Hig1:0.718 0/7.52 Hig 0/7.52 Hig 0/7.52 Hig 0/7.54 Hig 0/7.54 Hig 0/5.67 Hig 0/5.67 Hig 0/5.67 Hig 0/5.67 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h:1 : 1.228 h:1 : 0.877 h:1 : 0.864	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.75  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21 21		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV8 / 6.10 / 6.70 / 6.70+GV8 / 7.35 / 7.41 / 7.53 / 7.67 / 7.67+GV8 / 9.00 / 9.00+GV8 / 9.00+GV8 / 9.00+GV8 / 9.00+GV8 / 9.00+GV8 / 7.37 / 6.98 / 7.03 / 7.03+GV9 / 7.03+GV9 / 7.40	1:0.6041:0.569 0/7.52 No1:1.2171:1.154 0/7.52 Hig1:0.967 0/5.30 Hig1:0.8611:0.8661:0.842 0/6.70 Hig1:0.8191:0.718 0/7.52 Hig 0/7.54 Hig 0/5.67 Hig 0/5.74 Hig 0/5.74 Hig 0/5.74 Hig 0/5.74 Hig 0/5.74 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h: 1 : 1.228 h: 1 : 0.877 h: 1 : 0.864	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.75  Normal: 1 : 0.75  Normal: 1 : 0.75	67 67 47 21 21 21		
66-75	/ 7.92 / 9.03 / 9.59 / 6.70+GV8 / 5.03 / 5.66 / 5.66+GV8( / 6.10 / 6.70 / 6.70+GV8( / 6.90 / 7.35 / 7.41 / 7.53 / 7.67+GV8( / 7.90 / 9.00+GV8( / 9.00+GV8( / 9.00+GV8( / 5.67 / 5.74 / 6.37 / 6.98 / 7.03+GV9( / 7.03+GV9( / 7.04) / 7.03+GV9( / 7.04)	1:0.6041:0.569 0 / 7.52 No1:1.2171:1.154 0 / 7.52 Hig1:1.0.967 0 / 5.30 Hig1:0.8611:0.8781:0.8661:0.842 0 / 6.70 Hig 0 / 7.52 Hig 0 / 7.54 Hig 0 / 5.74 Hig	h: 1 : 1.151 h: 1 : 1.228 h: 1 : 0.970 h: 1 : 1.228 h: 1 : 0.877 h: 1 : 0.864	Normal: 1 : 0.86  Normal: 1 : 0.96  Normal: 1 : 0.75  Normal: 1 : 0.75  Normal: 1 : 0.75  Normal: 1 : 0.96	67 67 47 21 21 21		



8-S-151; 16-S-151 ; 16-S-181 ; 16-S-221 ; 16-S-1620 TD ; 16-S-1820 TO; 16-S-1920 TD; 16-S-2220 TO/TD; 16-S-2520 TO; 8S-1620 TD; 8S-1820 TO; 8S-220 TO; 16S-2320 TD; 16S-2330 TD; 16S-2720 TO; 16S-2730 TO

Ref. VK4001S VK4001AM



Main Data	
Continuous Torque (Nm)	600
Intermittent Torque (Nm)	840
Power (at 1000 r.p.m)	85 H.P. / 64 Kw
Weight (Kg)	1.7
Engine-Kit adapter ratio	
8-S-151 / 13.79 - 1:0.920	
8-S-1620 TD / 13.80-1.0 - 1:0.910	
8-S-1820 TO / 11.54-0.84 ; 8-S-220 TO / 11.54-0.84 -1:1.090	
16-S-151 / 13.85-0.84 High:- 1:0.920 Normal:- 1:0.770 / 16.53-1.00 High:- 1:0.920 Normal:- 1:0.770	
16-S-221 / 13.85-0.84 High:- 1:0.920 Normal:- 1:0.770 / 16.53-1.00 High:- 1:0.920 Normal:- 1:0.770	
16-S-181 / 13.85-0.84 High:- 1:0.920 Normal:- 1:0.770 / 16.53-1.00 High:- 1:0.920 Normal:- 1:0.770	
16-S-1820 TO; 16-S-2220 TO; 16-S-2520 TO; 16-S-2720 TO; 16-S-2730 TO / 13.80-0.84 High:- 1	:1.090 Normal:- 1:0.910
16-S-1620 TD; 16-S-1920 TD; 16-S-2220 TD; 16-S-2320 TD; 16-S-2330 TD / 16.41-1.0 High:- 1:0.	.910 Normal:- 1:0.770

Note 1: For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases.

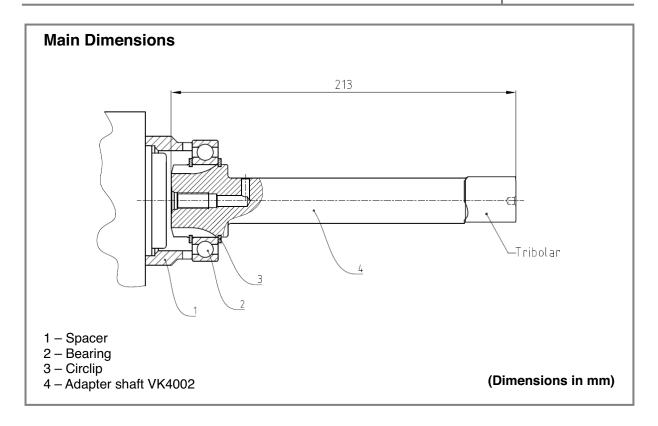
**Example:** Gearbox 16-S-151 / 13.85-0.84 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: High .- 1 : 1.214 (0.920 x 1.32 = 1.214) Normal .- 1 : 1.016 (0.770 x 1.32 = 1.016)

Note 2: Adapter Kit is supplied without studs. Please use those that are provided with the PTO.



16-S-130 ;16-S-160 ;16-S-190 ;16-S-220 ;16-S-112/17,28 ;8-S-151; 16-S-151 ; 16-S-181 ; 16-S-221

Ref. VK4002S VK4002AM



Main Data					
Continuous Torque (Nm) 300 Intermittent Torque (Nm) 420			300		
		420			
		42 H.P. / 32 Kw			
Weight (Kg)	<u> </u>				1.7
Engine-Kit ad					
16-S-130/11.46 H	•	Normal: 1 : 0.82			
		Normal: 1 : 0.82			
	3	Normal: 1 : 0.77 Normal: 1 : 0.77			
		Normal: 1 : 0.77			
	High: 1 : 0.97	Normal: 1 : 0.82			
	High: 1 : 0.92	Normal: 1:0.77			
	9	Normal: 1 : 0.74			
/ 17.06 I	High: 1 : 0.91	Normal: 1 : 0.74			

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

Gearbox 16-S-130 / 11.46 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32

Final ratio: High .- 1 : 1.2804 ( $0.97 \times 1.32 = 1.2804$ )

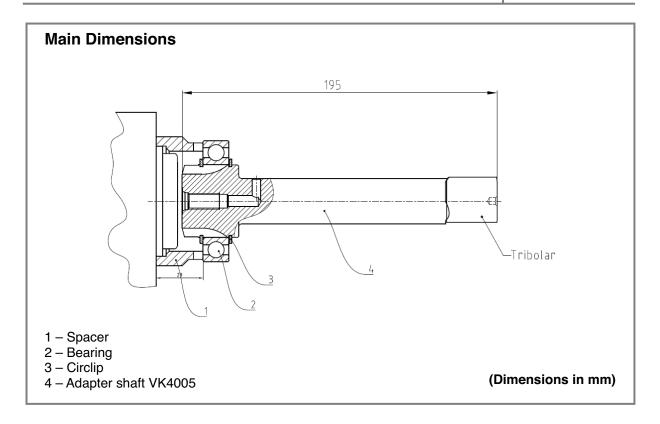
Normal .- 1 : 1.0824 (0.82 x 1.32 = 1.0824)

#### Note 2:



16-K-130 ;16-S-112 ;16-S-150

Ref. VK4005S VK4005AM



Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 r.p.m)	42 H.P. / 32 Kw
Weight (Kg) Engine-Kit adapter ratio	1.7
16-S-112/11.46 High: 1 : 0.963 Normal: 1 : 0.820 / 13.68 High: 1 : 0.963 Normal: 1 : 0.820	

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. Example:

Gearbox 16-S-112 / 11.46 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32

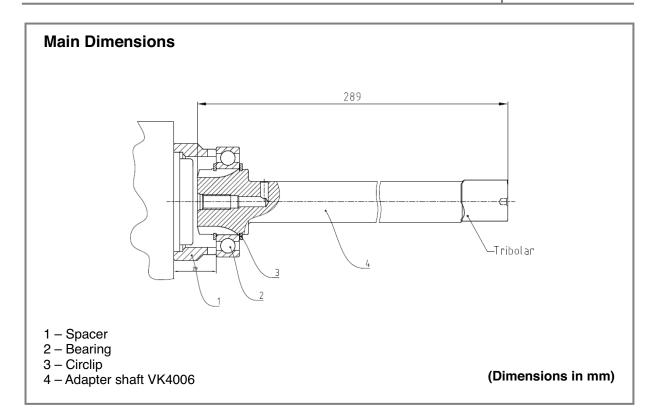
Final ratio: High .- 1 : 1.27116 (0.963 x 1.32 = 1.27116) Normal .- 1 : 1.0824 (0.82 x 1.32 = 1.0824)

#### Note 2:



16-S-112 A ;16-S-130 A ;16-S-160 A ;16-S-190 A ;16-S-220 A

Ref. VK4006S VK4006AM



Main Data	
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 r.p.m)	42 H.P. / 32 Kw
Weight (Kg)	2
Engine-Kit adapter ratio	
16-S-160 A /11.74 High: 1 : 0.963 Normal: 1 : 0.820 / 17.47 High: 1 : 0.910 Normal: 1 : 0.740 / 14.14 High: 1 : 0.920 Normal: 1 : 0.770	
16-S-190 A / 11.74 High: 1: 0.970 Normal: 1: 0.820	
16-S-220 A / 14.14 High: 1 : 0.920 Normal: 1 : 0.770	

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

Gearbox 16-S-160 A / 11.74 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32

Final ratio: High  $\cdot - 1 : 1.271 (0.963 \times 1.32 = 1.271)$ 

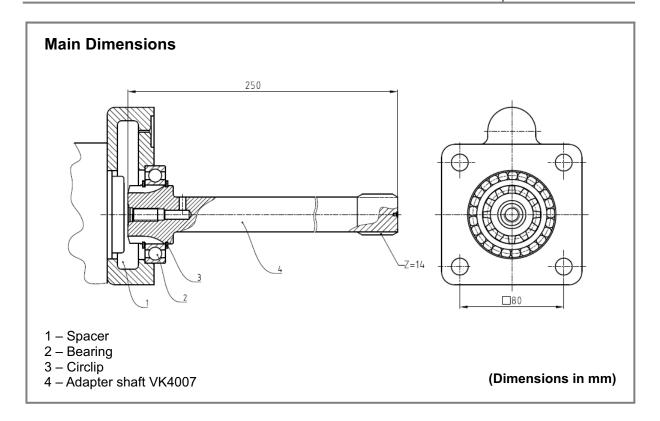
Normal .- 1 : 1.082 (0.820 x 1.32 = 1.082)

#### Note 2:



16-S-151 IT; 16-S-181 IT; 16-S-221 IT; 16-S-1621 TD IT; 16-S-1821 TO IT; 16-S-1921 TD IT; 16-S-2221 TD/TO IT; 16-S-2321 TD IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT

Ref.VK4007S



Main Data		
Continuous Torque (Nm)		600
Intermittent Torque (Nm)		840
Power (at 1000 r.p.m)		85 H.P. / 64 Kw
Weight (Kg)		2
Engine-Kit adapter ratio		
16-S-151/221 /13.80 High:- 1 : 0.92 Normal:- 1 : 0.77 /13.85 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.41 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.47 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.53 High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-1621 TD IT; 16-S-1921 TD IT; 16-S-2221 TD IT; 16-S-2321 TD IT; 16-S-2331 TD IT	/16.41	High:- 1 : 0.91 Normal:- 1 : 0.77
16-S-1821 TO IT; 16-S-2221 TO IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT	/13.80	High:- 1 : 1.09 Normal:- 1 : 0.91

### KIT Studs:

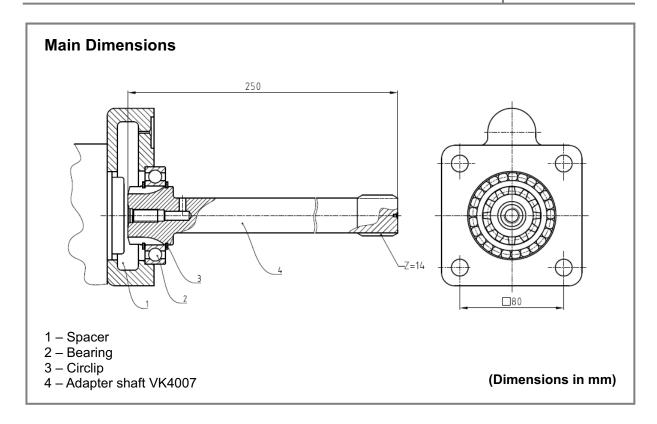
KIT VK4007**S** for PTO (ratio 1:1)

- 4 stud M12x155
- 4 nut M12
- 4 washer
- 1 jute ZF 1 jute IT



16-S-151 IT; 16-S-181 IT; 16-S-221 IT; 16-S-1621 TD IT; 16-S-1821 TO IT; 16-S-1921 TD IT; 16-S-2221 TD/TO IT; 16-S-2321 TD IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT

Ref.VK4007AM



Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)		840
Power (at 1000 r.p.m)		85 H.P. / 64 Kw
Weight (Kg)	2	
Engine-Kit adapter ratio		
16-S-151/221 /13.80 High:- 1 : 0.92 Normal:- 1 : 0.77 /13.85 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.41 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.47 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.53 High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-1621 TD IT; 16-S-1921 TD IT; 16-S-2221 TD IT; 16-S-2321 TD IT; 16-S-2331 TD IT	/16.41	High:- 1 : 0.91 Normal:- 1 : 0.77
16-S-1821 TO IT; 16-S-2221 TO IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT	/13.80	High:- 1 : 1.09 Normal:- 1 : 0.91

Note: For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. Example: Gearbox 16-S-151 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32

Final ratio: High .- 1:1.2144 (0.92 x 1.32 = 1.2144)

Normal .- 1:1.0164 (0.77 x 1.32 = 1.0164)

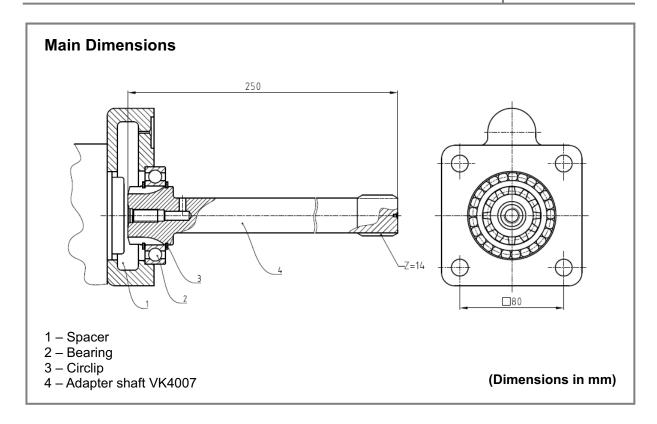
#### KIT Studs: KIT VK4007AM for PTO (ratio 1:1.32)

- 2 stud M12x135
- 2 stud M12x170
- 4 nut M12
- 4 washer
- 1 Jute ZF
- 1 Jute IT



16-S-151 IT; 16-S-181 IT; 16-S-221 IT; 16-S-1621 TD IT; 16-S-1821 TO IT; 16-S-1921 TD IT; 16-S-2221 TD/TO IT; 16-S-2321 TD IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT

Ref.VK4007AM



Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)		840
Power (at 1000 r.p.m)		85 H.P. / 64 Kw
Weight (Kg)	2	
Engine-Kit adapter ratio		
16-S-151/221 /13.80 High:- 1 : 0.92 Normal:- 1 : 0.77 /13.85 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.41 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.47 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.53 High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-1621 TD IT; 16-S-1921 TD IT; 16-S-2221 TD IT; 16-S-2321 TD IT; 16-S-2331 TD IT	/16.41	High:- 1 : 0.91 Normal:- 1 : 0.77
16-S-1821 TO IT; 16-S-2221 TO IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT	/13.80	High:- 1 : 1.09 Normal:- 1 : 0.91

Note: For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. Example: Gearbox 16-S-151 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32

Final ratio: High .- 1:1.2144 (0.92 x 1.32 = 1.2144)

Normal .- 1:1.0164 (0.77 x 1.32 = 1.0164)

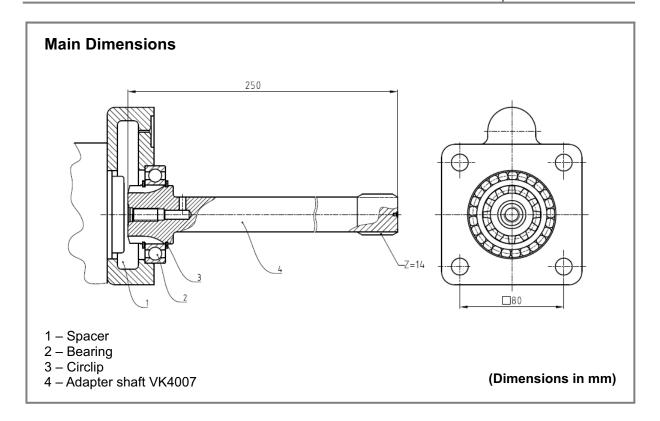
#### KIT Studs: KIT VK4007AM for PTO (ratio 1:1.32)

- 2 stud M12x135
- 2 stud M12x170
- 4 nut M12
- 4 washer
- 1 Jute ZF
- 1 Jute IT



16-S-151 IT; 16-S-181 IT; 16-S-221 IT; 16-S-1621 TD IT; 16-S-1821 TO IT; 16-S-1921 TD IT; 16-S-2221 TD/TO IT; 16-S-2321 TD IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT

Ref.VK4007S



Main Data		
Continuous Torque (Nm)		600
Intermittent Torque (Nm)		840
Power (at 1000 r.p.m)		85 H.P. / 64 Kw
Weight (Kg)		2
Engine-Kit adapter ratio		
16-S-151/221 /13.80 High:- 1 : 0.92 Normal:- 1 : 0.77 /13.85 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.41 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.47 High:- 1 : 0.92 Normal:- 1 : 0.77 /16.53 High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-1621 TD IT; 16-S-1921 TD IT; 16-S-2221 TD IT; 16-S-2321 TD IT; 16-S-2331 TD IT	/16.41	High:- 1 : 0.91 Normal:- 1 : 0.77
16-S-1821 TO IT; 16-S-2221 TO IT; 16-S-2521 TO IT; 16-S-2721 TO IT; 16-S-2731 TO IT	/13.80	High:- 1 : 1.09 Normal:- 1 : 0.91

### KIT Studs:

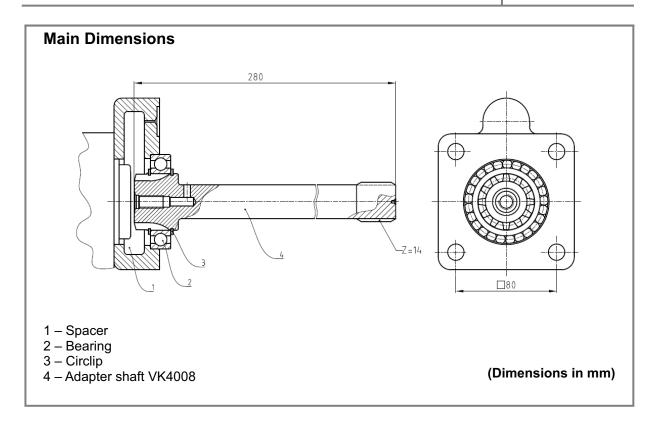
KIT VK4007**S** for PTO (ratio 1:1)

- 4 stud M12x155
- 4 nut M12
- 4 washer
- 1 jute ZF 1 jute IT



16-S-251 IT; 16-S-2720 TO IT

Ref.VK4008S



Main Data		
Continuous Torque (Nm) 600		
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)	85 H.P. / 64 Kw	
Weight (Kg)	2.3	
Engine-Kit adapter ratio		
16-S-251 IT High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-2720 TO IT / 13.80-0.84 High:- 1 : 1.09 Normal:- 1 : 0.91		

## KIT Studs:

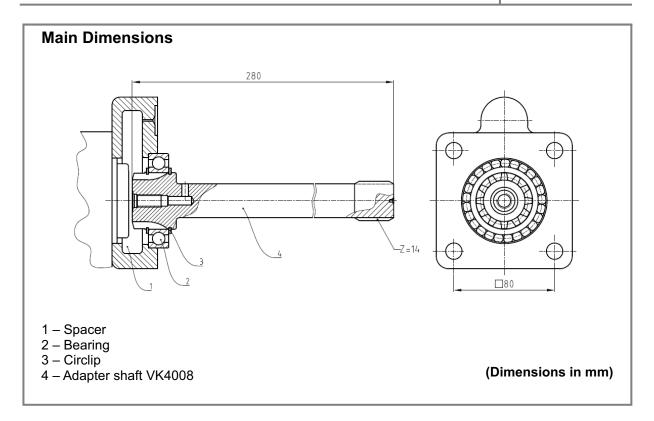
KIT VK4008**S** for PTO (ratio 1:1)

- 4 stud M12x155
- 4 nut M12 4 washer
- 1 jute ZF 1 jute IT



16-S-251 IT; 16-S-2720 TO IT

Ref.VK4008AM



Main Data		
Continuous Torque (Nm) 600		
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)	85 H.P. / 64 Kw	
Weight (Kg)	2.3	
Engine-Kit adapter ratio		
16-S-251 IT High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-2720 TO IT / 13.80-0.84 High:- 1 : 1.09 Normal:- 1 : 0.91		

## KIT Studs:

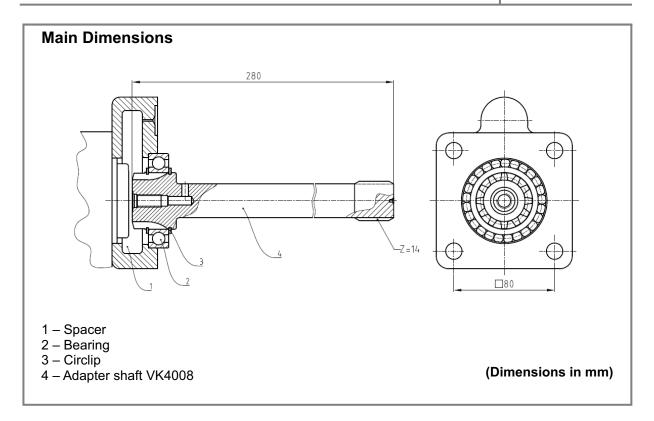
KIT VK4008AM for PTO (ratio 1:1.32)

- 2 stud M12x135
- 2 stud M12x170 4 nut M12
- 4 washer
- 1 jute ZF 1 jute IT



16-S-251 IT; 16-S-2720 TO IT

Ref.VK4008AM



Main Data		
Continuous Torque (Nm) 600		
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)	85 H.P. / 64 Kw	
Weight (Kg)	2.3	
Engine-Kit adapter ratio		
16-S-251 IT High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-2720 TO IT / 13.80-0.84 High:- 1 : 1.09 Normal:- 1 : 0.91		

## KIT Studs:

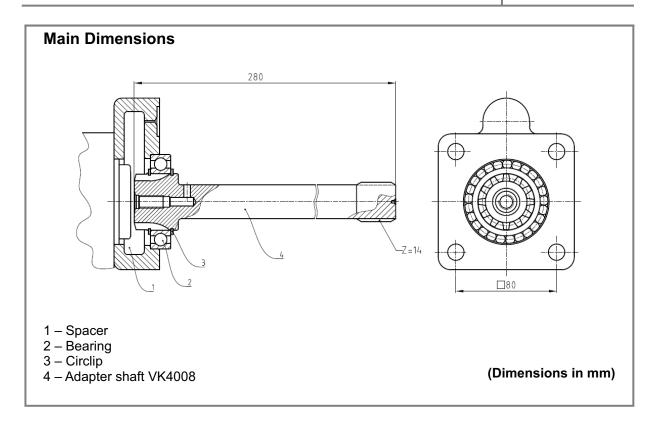
KIT VK4008AM for PTO (ratio 1:1.32)

- 2 stud M12x135
- 2 stud M12x170 4 nut M12
- 4 washer
- 1 jute ZF 1 jute IT



16-S-251 IT; 16-S-2720 TO IT

Ref.VK4008S



Main Data		
Continuous Torque (Nm) 600		
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)	85 H.P. / 64 Kw	
Weight (Kg)	2.3	
Engine-Kit adapter ratio		
16-S-251 IT High:- 1 : 0.92 Normal:- 1 : 0.77		
16-S-2720 TO IT / 13.80-0.84 High:- 1 : 1.09 Normal:- 1 : 0.91		

## KIT Studs:

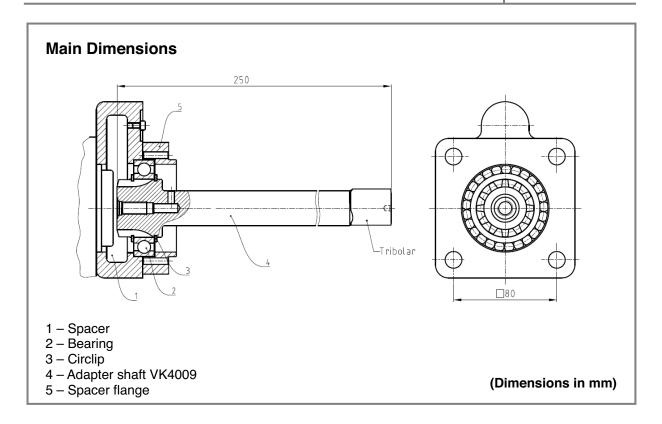
KIT VK4008**S** for PTO (ratio 1:1)

- 4 stud M12x155
- 4 nut M12 4 washer
- 1 jute ZF 1 jute IT



16-S-150 IT

Ref.VK4009AM



Main Data			
Continuous Torque (Nm)		300	
Intermittent Torque (Nm)		420	
Power (at 1000 r.p.m)		42 H.P. / 32 Kw	
Weight (Kg)		2.5	
Engine-Kit a	dapter ratio		
16-S-150/ 16.47	High: 1 : 0.920	Normal: 1 : 0.770	
/ 13.80	High: 1 : 0.920	Normal: 1 : 0.770	

#### KIT Studs:

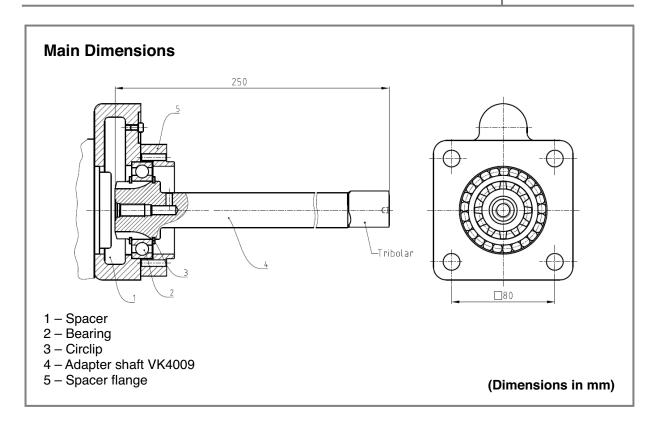
KIT VK4008AM for PTO (ratio 1:1.32)

- 2 stud M12x135
- 2 stud M12x170
- 4 nut M12 4 washer
- 1 jute ZF
- 1 jute IT



16-S-150 IT

Ref.VK4009S



Main Data			
Continuous Torque (Nm)	300		
Intermittent Torque (Nm)	420		
Power (at 1000 r.p.m)	42 H.P. / 32 Kw		
Weight (Kg)	2.5		
Engine-Kit adapter ratio			
16-S-150/ 16.47 High: 1 : 0.920 Normal: 1 : 0.770			
/ 13.80 High: 1 : 0.920 Normal: 1 : 0.770			

#### KIT Studs:

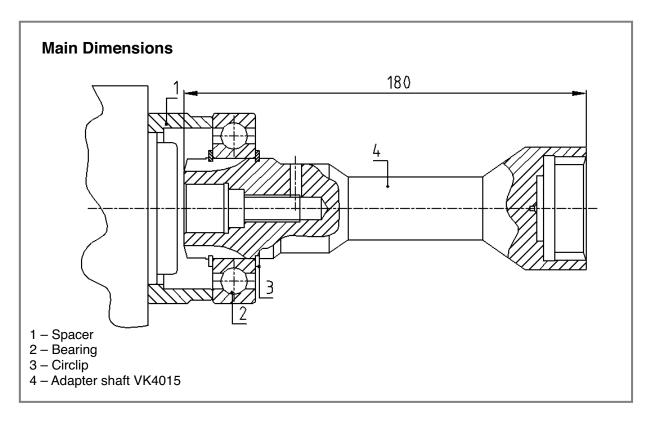
KIT VK4009S for PTO (ratio 1:1)

- 4 stud M12x170
- 4 nut M12
- 4 washer
- 2 jute ZF 1 jute IT



5-90 GP ; 5-92 GP ; 4-120 GP

Ref. VK4015S VK4015AM



Main Data			
<b>Continuous To</b>	orque (Nm)		300
Intermittent To	rque (Nm)		420
Power (at 1000	) r.p.m)		42 C.V. / 32 Kw
Weight (Kg)			1.7
Engine-Kit ada	pter ratio		
5.00 OD /40	4.0.000		
5-90 GP / 13	1:0.890		
5-90 GP / 13.01	1:0.890		
4-120 GP / 10.91	1:0.800		
/ 8.05	1:0.970		
/ 9.16	1:0.850		

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

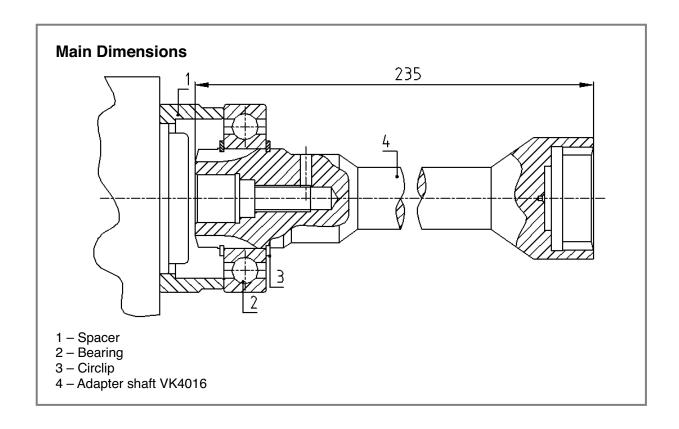
Gearbox 5-90 GP / 13.01 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: 1:1.174 (0.890 x 1.32 = 1.174)

#### Note 2:



5-110 GPA

Ref. VK4016S VK4016AM



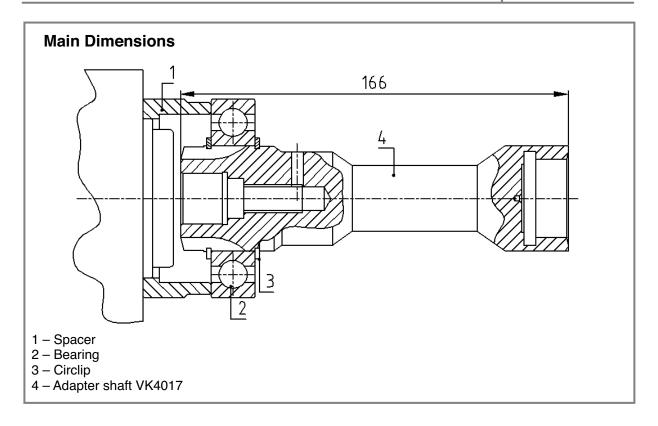
Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 r.p.m)	42 C.V. / 32 Kw	
Weight (Kg)	2	
Engine-Kit adapter ratio	1:0.830	

### Note:



5-110 GP ; 5-111 GP ; 4-150 GP

Ref. VK4017S VK4017AM



Main Data		
<b>Continuous Tor</b>	que (Nm)	300
<b>Intermittent Tor</b>	que (Nm)	420
Power (at 1000	r.p.m)	42 C.V. / 32 Kw
Weight (Kg)	· ·	1.7
Engine-Kit adap	oter ratio	
5-110 GP / 11.2	1:0.975	
/ 13.1	1:0.830	
/ 9.72	1:0.830	
5-111 GP / 13.04	1:0.820	
4-150 GP / 9.19	1:0.820	

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

Gearbox 5-110 GP / 11.2 Adapter Kit + ZF S6-90 (Ref. TF4002MP) Internal Ratio 1:1.32

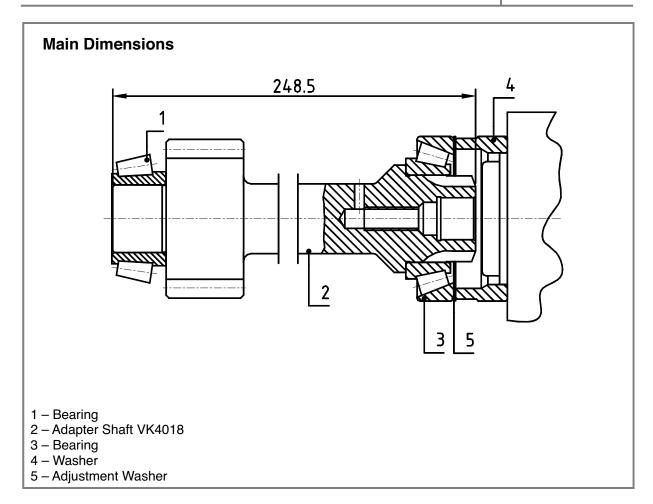
Final ratio:  $1:1.287 (0.975 \times 1.32 = 1.287)$ 

#### Note 2:



9-S-75/13.16; 9-S-75/9.56

Ref. VK4018S VK4018AM



Main Data		
Continuous Torque (Nm)	300	
Intermittent Torque (Nm)	420	
Power (at 1000 r.p.m)	42 H.P. / 32 Kw	
Weight (Kg)	4,3	
Engine to PTO ratio		
9-S-75 / 13.16 1 : 0.610		
9-S-75 / 9.56 1 : 0.850		

#### Note 1

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

Gearbox 9-S-75 / 13.16 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: -1:0.805 (0.610 x 1.32 = 0.805)

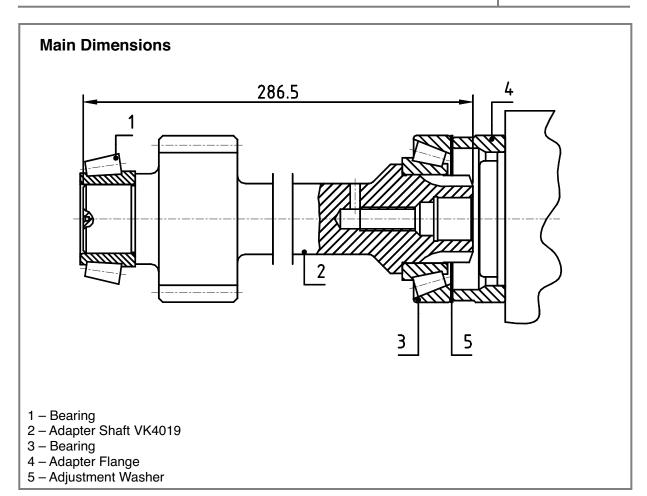
#### Note 2:

Adapter Kit is supplied without studs. Please use those that are provided with the PTO.



9-S-109/10.25; 9-S-109/10.24;16-S-109/11.86; 16-S-109/13.53

Ref. VK4019S VK4019AM



Main Data			
<b>Continuous To</b>	orque (N	1)	300
Intermittent To	orque (Ni	1)	420
Power (at 100	0 r.p.m)		42 H.P. / 32 Kw
Weight (Kg)			4.7
<b>Engine to PTC</b>	) ratio		·
9-S-109 / 10.25	1 : 0.7	70	
16-S-109 / 11.86	High	1 : 0.880	
	Normal	1 : 0.750	
16-S-109 / 13.53	High	1 : 0.930	
	Normal	1 : 0.790	

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

Gearbox 9-S-109 / 10.25 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: .- 1 : 1.016 (0.770 x 1.32 = 1.016)

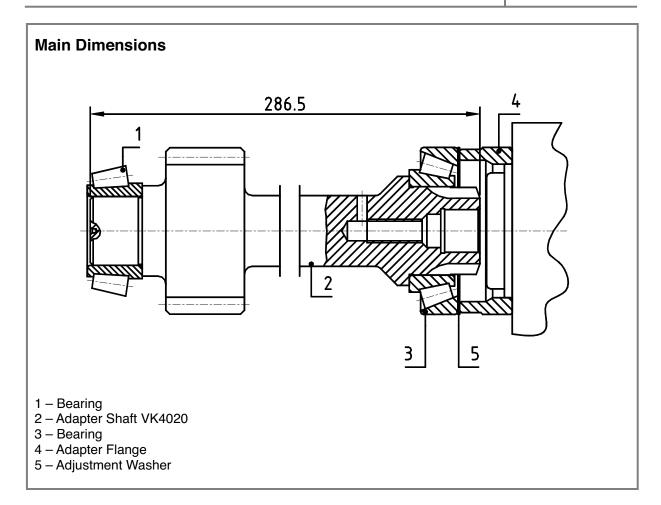
#### Note 2:

Adapter Kit is supplied without studs. Please use those that are provided with the PTO.



9-S-109/12.92; 16-S-109/13.04; 16-S-109/13.30; 16-S-109/13.42; 8-S-109

Ref. VK4020S VK4020AM



Main Data		
Continuous To	rque (Nm)	300
Intermittent To	rque (Nm)	420
Power (at 1000	r.p.m)	42 H.P. / 32 Kw
Weight (Kg)	•	4.7
<b>Engine to PTC</b>	ratio	
9-S-109 / 12.92	1 : 0.720	
16-S-109 / 13.30	High 1 : 0.930	
	Normal 1 : 0.790	
16-S-109 / 13.42	High 1 : 0.930	
	Normal 1 : 0.790	

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases.

Gearbox 9-S-109 / 12.92 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: -  $1:0.950 (0.720 \times 1.32 = 0.950)$ 

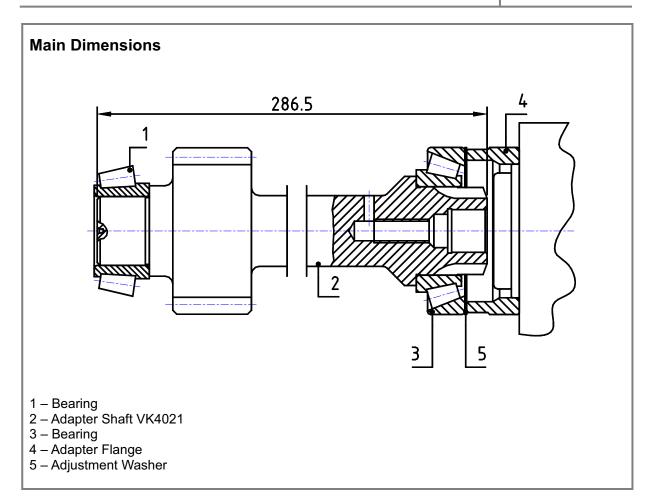
#### Note 2:

Adapter Kit is supplied without studs. Please use those that are provided with the PTO.



9-S-109/12,91 ; 16-S-109/13,31 ; 16-S-109/13,41 ; 9S-1110 TO/9,48 ; 9S 1310 TO/9,48

Ref. VK4021S VK4021AM



Main Data		
300		
420		
42 H.P. / 32 Kw		
4.7		

#### Note 1:

For getting the correct ratio is necessary to multiply the above mentioned ratio by the internal ratio in all S6-90 releases. **Example:** 

Gearbox 9-S-109 / 12.91 Adapter Kit + ZF S6-90 (Ref. TF4002MP) Internal Ratio 1:1.32 Final ratio: .- 1: 0.950 (0.720 x 1.32 = 0.950)

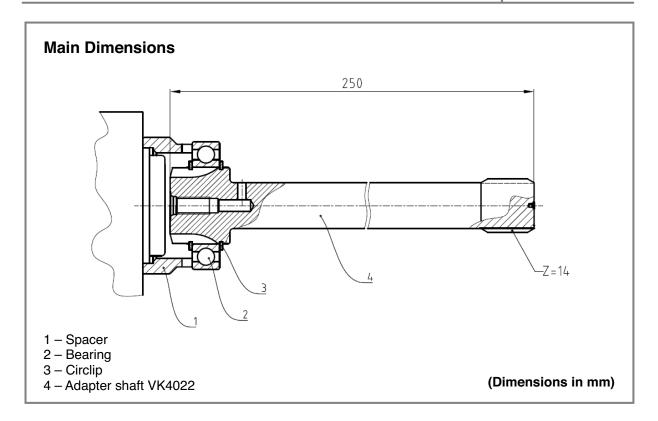
#### Note 2:

Adapter Kit is supplied without studs. Please use those that are provided with the PTO.



12-AS-1800; 12-AS-2301; 16-AS-200; 16-AS-2601; 12AS-1630TD; 12AS-1930TD; 12AS-2130TD; 12AS-2131TD; 12AS-2140TD; 12AS-2340TD; 12AS-2430TD; 12AS-2540 TD; 12AS-1930 TO; 12AS-2130 TO; 12AS-2330 TO; 12AS-2530 TO; 12AS-2540 TO; 12AS-2740 TO; 12AS-2940 TO; 16AS-2601 DD; 16AS-2601 DD; 16AS-2630 TO

Ref. VK4022S VK4022AM

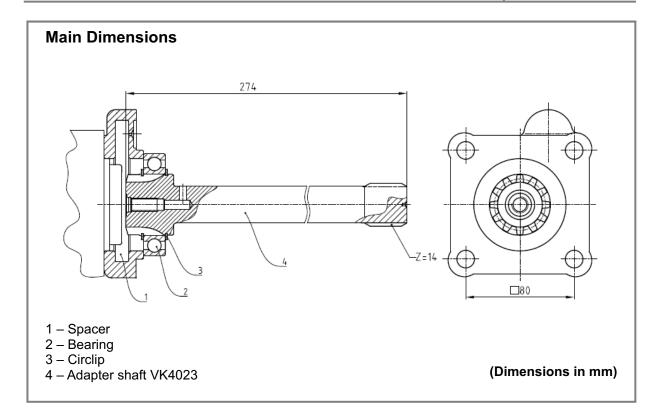


Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)	85 H.P. / 64 Kw	
Weight (Kg)	2	
Engine-Kit adapter ratio		
·		



12-AS-1800 IT; 12-AS-1631 TD IT; 12-AS-1931 TD/TO IT; 12-AS-2131 TD/TO IT; 12-AS-2141 TD IT; 12-AS-2301 TD/TO IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT; 12-AS-2541 TD IT; 12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-2631 TO IT

Ref.VK4023S



Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)		P. / 64 Kw
Weight (Kg) Engine-Kit adapter ratio	2.9	
12-AS-1631 TD IT; 12-AS-1931 TD IT; 12-AS-2131 TD IT; 12-AS-2141 TD IT; 12-AS-2301 TD IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT	/15.68-1.0	1:0.82
12-AS-1800 IT	/14.89-1.0	1:0.76
12-AS-1931 TO IT; 12-AS-2131 TO IT; 12- AS-2301 TO IT; 12-AS-2331 TO IT; 12-AS-2531 TO IT;	/12.33-0.78	1:1.35
12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2941 TO IT;	/12.29-0.78	1:1.35
16-AS-2200 IT	/15.89-1.0	1:0.71
16-AS-2231 TD IT; 16-AS-2601 TD IT	/17.03-1.0	1:0.76
16-AS-2601 TO IT; 16-AS-2631 TO IT	/14.12-0.83	1:1.11

#### KIT Studs:

KIT VK4023S for PTO (ratio 1:1)

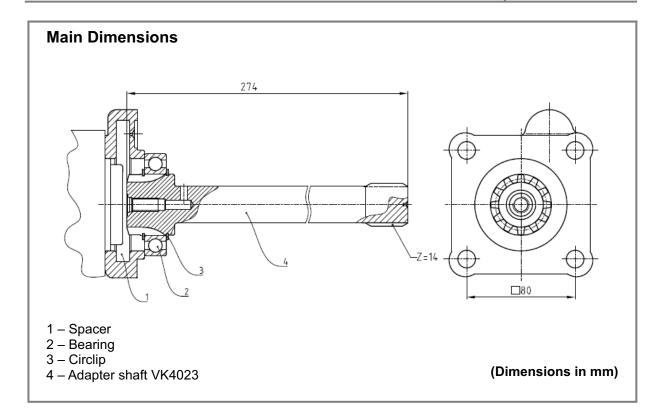
- 4 stud M12x135
- 4 nut M12
- 4 washer
- 1 jute ZF
- 1 jute AS



ZF

12-AS-1800 IT; 12-AS-1631 TD IT; 12-AS-1931 TD/TO IT; 12-AS-2131 TD/TO IT; 12-AS-2141 TD IT; 12-AS-2301 TD/TO IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT; 12-AS-2541 TD IT; 12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-2631 TO IT

Ref.VK4023AM



Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)		P. / 64 Kw
Weight (Kg) Engine-Kit adapter ratio	2.9	
12-AS-1631 TD IT; 12-AS-1931 TD IT; 12-AS-2131 TD IT; 12-AS-2141 TD IT; 12-AS-2301 TD IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT	/15.68-1.0	1:0.82
12-AS-1800 IT	/14.89-1.0	1:0.76
12-AS-1931 TO IT; 12-AS-2131 TO IT; 12- AS-2301 TO IT; 12-AS-2331 TO IT; 12-AS-2531 TO IT;	/12.33-0.78	1:1.35
12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2941 TO IT;	/12.29-0.78	1:1.35
16-AS-2200 IT	/15.89-1.0	1:0.71
16-AS-2231 TD IT; 16-AS-2601 TD IT	/17.03-1.0	1:0.76
16-AS-2601 TO IT; 16-AS-2631 TO IT	/14.12-0.83	1:1.11

#### KIT Studs:

KIT VK4023AM for PTO (ratio 1:1.32)

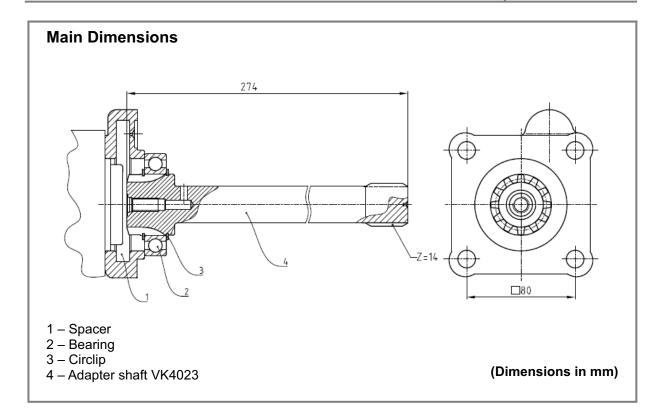
- 2 stud M12x113
- 2 stud M12x150
- 4 nut M12
- 4 washer
- 1 jute ZF 1 jute AS



ZF

12-AS-1800 IT; 12-AS-1631 TD IT; 12-AS-1931 TD/TO IT; 12-AS-2131 TD/TO IT; 12-AS-2141 TD IT; 12-AS-2301 TD/TO IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT; 12-AS-2541 TD IT; 12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-2631 TO IT

Ref.VK4023AM



Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)		P. / 64 Kw
Weight (Kg) Engine-Kit adapter ratio	2.9	
12-AS-1631 TD IT; 12-AS-1931 TD IT; 12-AS-2131 TD IT; 12-AS-2141 TD IT; 12-AS-2301 TD IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT	/15.68-1.0	1:0.82
12-AS-1800 IT	/14.89-1.0	1:0.76
12-AS-1931 TO IT; 12-AS-2131 TO IT; 12- AS-2301 TO IT; 12-AS-2331 TO IT; 12-AS-2531 TO IT;	/12.33-0.78	1:1.35
12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2941 TO IT;	/12.29-0.78	1:1.35
16-AS-2200 IT	/15.89-1.0	1:0.71
16-AS-2231 TD IT; 16-AS-2601 TD IT	/17.03-1.0	1:0.76
16-AS-2601 TO IT; 16-AS-2631 TO IT	/14.12-0.83	1:1.11

#### KIT Studs:

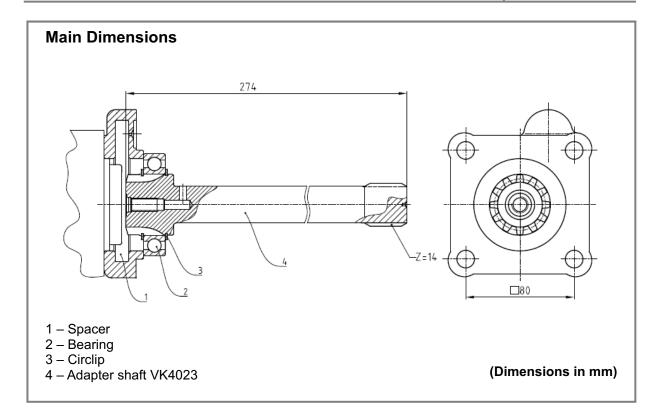
KIT VK4023AM for PTO (ratio 1:1.32)

- 2 stud M12x113
- 2 stud M12x150
- 4 nut M12
- 4 washer
- 1 jute ZF 1 jute AS



12-AS-1800 IT; 12-AS-1631 TD IT; 12-AS-1931 TD/TO IT; 12-AS-2131 TD/TO IT; 12-AS-2141 TD IT; 12-AS-2301 TD/TO IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT; 12-AS-2541 TD IT; 12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-2741 TO IT; 12-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-201 TD IT; 16-AS-2631 TO IT

Ref.VK4023S



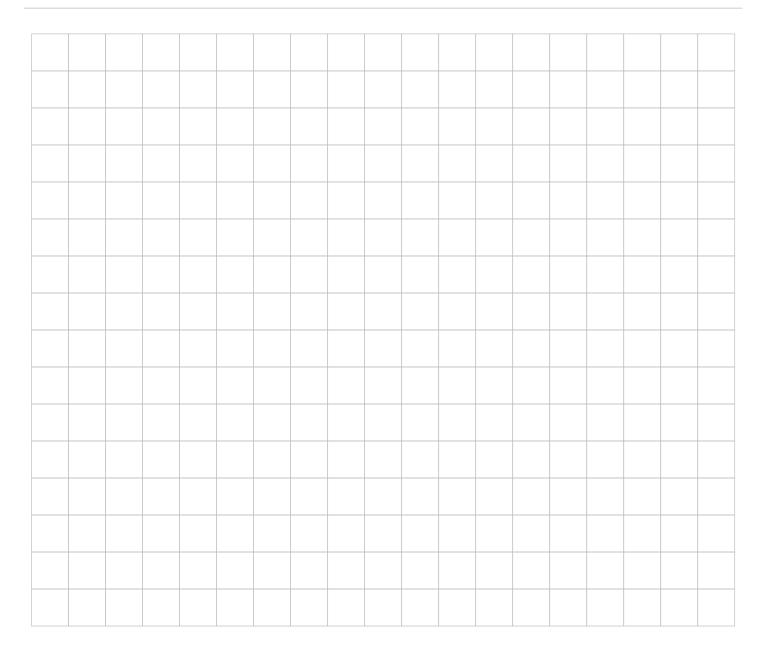
Main Data		
Continuous Torque (Nm)	600	
Intermittent Torque (Nm)	840	
Power (at 1000 r.p.m)		P. / 64 Kw
Weight (Kg) Engine-Kit adapter ratio	2.9	
12-AS-1631 TD IT; 12-AS-1931 TD IT; 12-AS-2131 TD IT; 12-AS-2141 TD IT; 12-AS-2301 TD IT; 12-AS-2341 TD IT; 12-AS-2431 TD IT	/15.68-1.0	1:0.82
12-AS-1800 IT	/14.89-1.0	1:0.76
12-AS-1931 TO IT; 12-AS-2131 TO IT; 12- AS-2301 TO IT; 12-AS-2331 TO IT; 12-AS-2531 TO IT;	/12.33-0.78	1:1.35
12-AS-2541 TO IT; 12-AS-2741 TO IT; 12-AS-2941 TO IT;	/12.29-0.78	1:1.35
16-AS-2200 IT	/15.89-1.0	1:0.71
16-AS-2231 TD IT; 16-AS-2601 TD IT	/17.03-1.0	1:0.76
16-AS-2601 TO IT; 16-AS-2631 TO IT	/14.12-0.83	1:1.11

#### KIT Studs:

KIT VK4023S for PTO (ratio 1:1)

- 4 stud M12x135
- 4 nut M12
- 4 washer
- 1 jute ZF
- 1 jute AS





The specified data is for product description purposes only and may not be deemed to be guaranteed unless expressly confirmed in the contract.



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