# TECHNICAL DATA SHEETS and RECOMMENDATIONS



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### 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-Off with 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

Monthly	Annually
-Check the transmission oil level. We advise seeing the vehicle manufacturer recommendations. -Check 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 recommendations. -Check 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. -Visual 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.



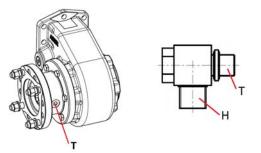
Do not use more than three gaskets.



C C

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)

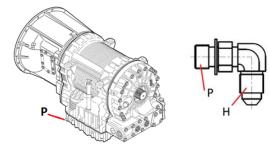


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7 - Attach the 90° elbow fitting provided in the kit to the threaded hole (P) on the transmission.



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

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auits, causes and remedies			
Faults	Causes	Remedies	
Noise	1. Assembly clearance	1. Check/adjust the looseness between the teeth and the	
Noise	2.Broken teeth	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 off and 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 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 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 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 OFF RECOMMENDATIONS BEFORE START-UP



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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 off PTO control; 3.release the clutch;

, 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

ATTENTION

Daily	Monthly	Annually
-Check the	-Check the tightness of	-Check the tightness of the
tightness of	the pneumatic system	pneumatic system and the
the	and the light switches.	light switches
pneumatic	-Check the oil level	-Check the oil level and
system and	and refill if necessary.	refill if necessary. We
the light	We advise seeing the	advise seeing the gearbox
switches.	gearbox manufacturer	manufacturer
	recommendations.	recommendations.
	-Check the tightness of	-Check the tightness of the
	the fixation studs and if	fixation studs and if
	necessary tighten	necessary tighten more.
	more. Consult torque	Consult torque table to
	table to tight studs	tight studs correctly.
	correctly.	-Visual inspection of all the
	-Visual inspection of all	components and if
	the components and if	necessary proceed with
	necessary proceed	the repair.
	with the repair.	-Clean the gearbox and if
		necessary proceed with
		the repair.

#### 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 off and 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 selfalign and also to check for any excessive noise.

-Before re-filling the gear-box with oil it is advisable to check the noise level of the PTO. If the PTO produces a hissing noise, this means that there is insufficient backlash in which case another gasket must be added. If the Power Take-off 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 3/8"	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 off and the truck blocked with the parking brake.

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**ABER - Embraiagens e Comandos Hidráulicos - A. B. LDA** Rua Francisco de Almeida, Nº 30 – Vila Nova da Telha – 4470 MAIA - Portugal Telefone: +351.22.9438070 Fax: +351.22.9420823 e-mail: <u>aber@aber.pt</u> <u>http://www.aber.pt</u>

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### **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 guality 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

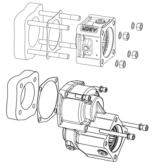
1-Drain the oil from the gearbox (in some gearboxes this step is no needed because the oil level does not reach the rear door), find the rear open and remove its cover and the respective gasket.

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 throughthreading, 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 gasket between the inspection hatch and the PTO body.

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 table.



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.



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.



- 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

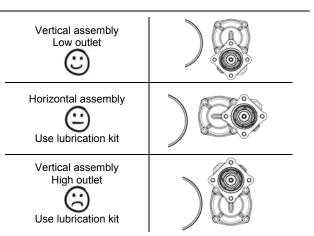
Use appropriate tools.
 Ensure that the system cannot boot involuntarily.
 Ensure that the levels and quality of the oil are as recommended, that there are no leaks and that everything is properly tightened before starting.
 When the PTO is working, never touch or pull hoses or intermediate shaft when 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 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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ABER - Embraiagens e Comandos Hidráulicos - A. B. LDA Rua Francisco de Almeida, Nº 30 - Vila Nova da Telha - 4470 MAIA - Portugal Telefone: +351.22.9438070 Fax: +351.22.9420823 e-mail: aber@aber.pt http://www.aber.pt



#### Faults, causes and remedies

	Faults, causes and remedies				
Faults	Causes	Remedies			
	1.Vehicles clutch is	1.Fully press the			
	not working properly	clutch or wait more time for the gearbox			
	2. Assembly	gearing to stop			
Noise	clearance	2. Check/adjust the			
	3.Broken teeth	looseness between the teeth and the			
	J.DIOKEIT LEELIT	thickness of the			
	4.Damaged roller-	gaskets			
	bearings	3-4.Repair or replace			
	1.0 Look of	1.Refill the oil level			
	1-2.Lack of lubrication	2.Use a PTO with a lubrication hose			
	lubrication	connected directly to			
Over-heating	3.Too tight between	the gearbox			
	the wheel of the PTO	3.Adjust the gap			
	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	2.Replace gasket for			
	2.Damaged gasket	another with the same thickness			
		1.Clean or replace			
	1.Obstructed air hose	hose			
PTO doesn't	2.Low air pressure	2.Check for leak			
engage		source and fix it			
	3.Control failure	3.Repair or replace control			
PTO doesn't	1. Internal PTO	1.Repair or replace			
disengage	problem	control			
No transmission of	1 DTO blockoss	1.Repair or replace			
	T.PTO blockage	control			
No transmission of movement	1.PTO blockage				

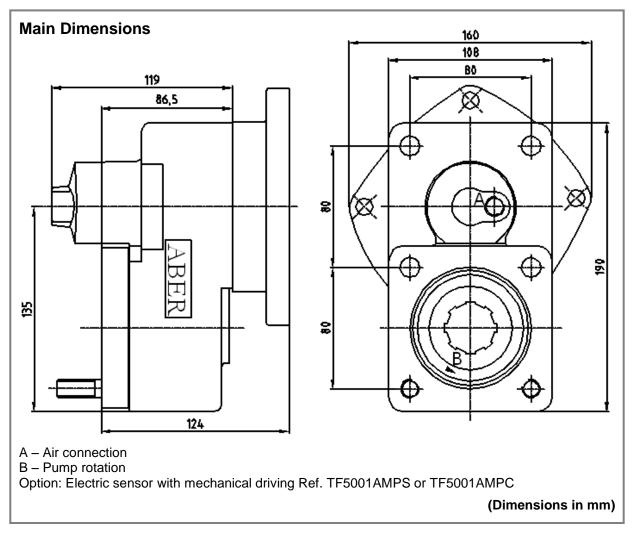


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VOLVO

R50 ; R51 ; R52 ; SR52

### To apply with Gear pumps or with 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	Right Hand	
Weight (kg)	9,3	
PTO internal ratio	1:1,32	
Indicative ratio from motor to PTO's output		
R50 ; R51 ; R52 ; SR 52 1 : 0.760		

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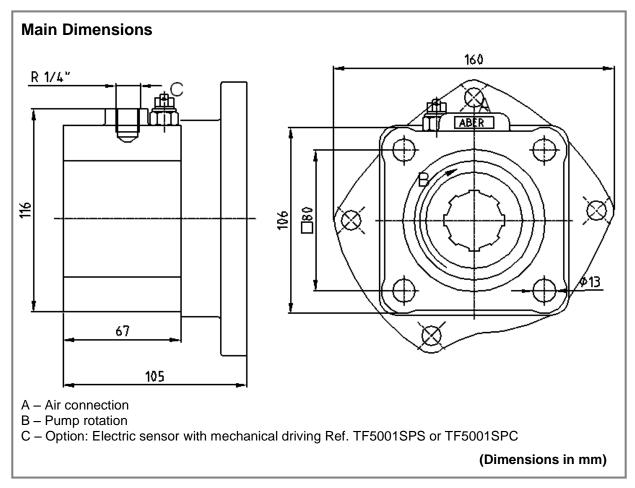
 Telefone: +351.22.9438070
 Fax: +351.22.9420823 e-mail: <a href="mailto:aber@aber.pt">aber@aber.pt</a> <a href="http://www.aber.pt">http://www.aber.pt</a> 



VOLVO

R50 ; R51 ; R52 ; SR52

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



Main D	ata
Continuous Torque (Nm)	300
Intermittent Torque (Nm)	420
Power (at 1000 rpm)	42 cv / 32 kW
Mounting Position	Up
Pump Rotation	Left Hand
Weight (kg)	5,8
PTO internal ratio	1:1
Indicative ratio from motor to PTO's output	
R50 ; R51 ; R52 ; SR 52 1 : 0.576	

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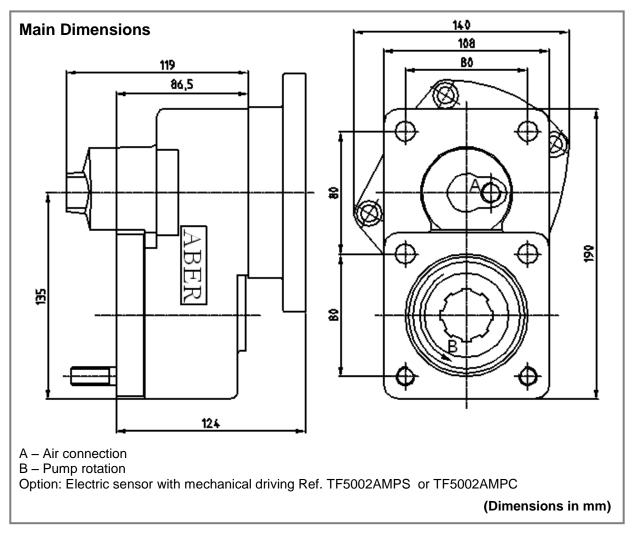
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VOLVO

R61 ; MR61 ; SR61 ; R62 ; MR62 ; SR62 ; R60

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



		Main Data	
Continuous Torque (Nm)			300
Intermittent To	orque (Nm)		420
Power (at 1000	rpm)		42 cv / 32 kW
<b>Mounting Posi</b>	tion		Rear
Pump Rotation		Right Hand	
Weight (kg)			10
PTO internal ratio			1:1,32
Indicative ratio	from motor to PT	D´s output	
R61 ; R62	1 : 1.030		
MR61 ; MR62 1 : 1.030			
SR 61 ; SR 62	High: 1 : 1.150	Normal: 1:0.970	

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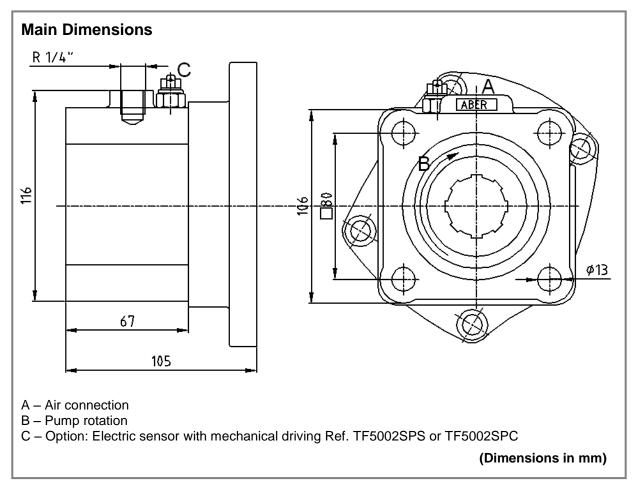
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VOLVO

R61 ; MR61 ; SR61 ; R62 ; MR62 ; SR62 ; R60

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



Main Data			
Continuous	s Torque (Nm)		300
Intermittent	Torque (Nm)		420
Power (at 1	000 rpm)		42 cv / 32 kW
Mounting P	osition		Rear
Pump Rota	tion		Left Hand
Weight (kg	)		6,5
<b>PTO</b> interna	al ratio		1:1
Indicative ra	atio from motor	to PTO's output	
R61 ; R62	1 : 0.780		
MR61 ; MR62	1 : 0.780		
SR 61 ; SR 62	High: 1 : 0.871	Normal: 1:0.735	

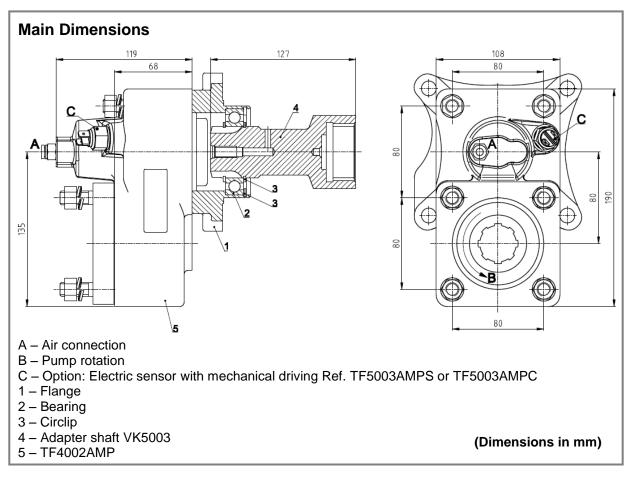




VOLVO

R70; SR70; SR71

To apply with Gear Pumps or with Piston Pumps



		Main Data	
<b>Continuous T</b>	orque (Nm)		300
Intermittent T	orque (Nm)		420
Power (at 100	0 rpm)		42 cv / 32 kW
Mounting Position		Rear	
Pump Rotation		Right Hand	
Weight (kg)		11,5	
PTO internal ı	ratio		1:1,32
Indicative rati	o from motor to PTC	D´s output	
R70	1 : 1.110		
SR70 ; SR71	High: 1 : 1.380	Normal: 1 : 1.110	

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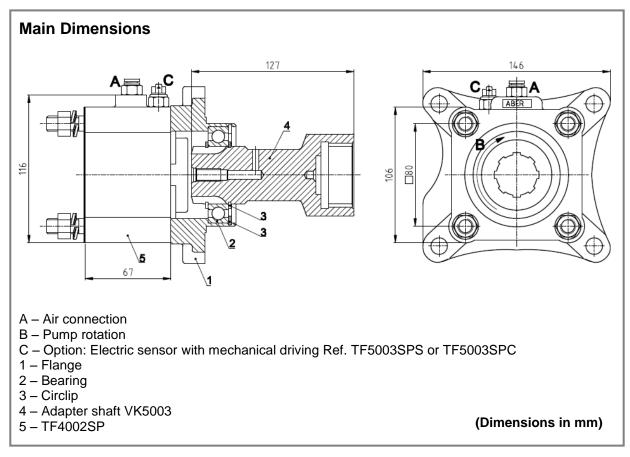




VOLVO

R70; SR70; SR71

To apply with Gear Pumps or with Piston Pumps



Main Data			
<b>Continuous</b> T	orque (Nm)		300
Intermittent T	orque (Nm)		420
Power (at 100	)0 rpm)		42 cv / 32 kW
<b>Mounting Pos</b>	sition		Rear
Pump Rotation		Left Hand	
Weight (kg)		8	
<b>PTO</b> internal	ratio		1:1
Indicative rat	io from motor to PTC	)´s output	
R70	1 : 0.840		
SR70 ; SR71	High: 1 : 1.040	Normal: 1 : 0.840	

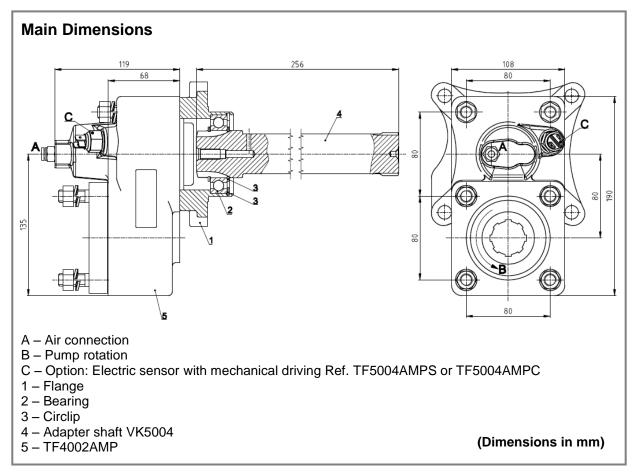
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VOLVO R1000 ; SR1000 ; R1400 ; R1700 : SR1400 ; SR1700 ; SR1900 ; SR2000 ; SR2400 ; SR02400 ; VT1708 ; VT2009B ; VT2014B ; VT2214 ; VT2412B ; VT2514B ; VT02214B ; VT02514B ; VT2814B ; VT02814B

To apply with Gear Pumps or with Piston Pumps



Main Dat	ta	
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)		12,4
PTO internal ratio		1:1,32
Indicative ratio from motor to PTO's output		
R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B	1 : 0.920	
SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B	High: 1 : 1.160	Normal: 1 : 0.920
SR 2000	High: 1 : 1.080	Normal: 1 : 0.860
SRO 2400	High: 1 : 1.360	Normal: 1 : 1.082
VT2412B	High: 1 : 1.190	Normal: 1 : 0.920
VTO2214B ; VTO2514B	High: 1 : 1.448	Normal: 1 : 1.160

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Telefone: +351.22.9438070 Fax: +351.22.9420823 e-mail: <u>aber@aber.pt</u> <u>http://www.aber.pt</u>

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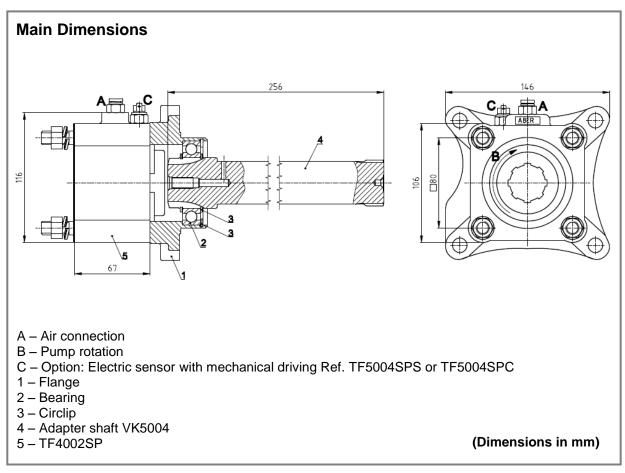


 VOLVO
 R1000 ; SR1000 ; R1400 ; R1700 : SR1400 ; SR1700 ; SR1900 ; SR2000 ;

 SR2400 ; SR02400 ; VT1708 ; VT2009B ; VT2014B ; VT2214 ; VT2412B ;

 VT2514B ; VT02214B ; VT02514B ; VT2814B ; VT02814B

To apply with Gear Pumps or with 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)			8,9
PTO internal ratio			1:1
Indicative ratio from motor to PTO's output			
R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B	1 : 0.700		
SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B	High: 1 : 0.880	Nor	mal: 1 : 0.700
SR 2000	High: 1 : 0.820	No	rmal: 1 : 1.650
SRO 2400	High: 1 : 1.030	No	rmal: 1 : 0.820
VT2412B	High: 1 : 0.903	No	rmal: 1 : 0.700
VTO2214B ; VTO2514B	High: 1 : 1.094	No	rmal: 1 : 0.880

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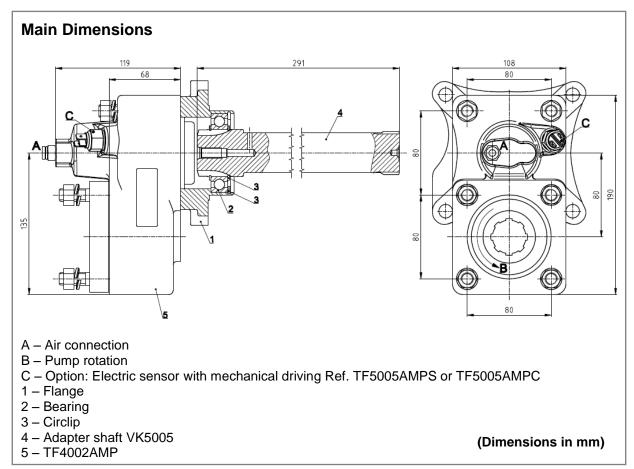
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Rua Francisco de Almeida, Nº 30 – Vila Nova da Telha – 4470 MAIA - Portugal Telefone: +351.22.9438070 Fax: +351.22.9420823 e-mail: <u>aber@aber.pt</u> <u>http://www.aber.pt</u>



R1000 IT ; SR1000 IT ; R1400 IT ; R1700 IT : SR1400 IT ; SR1700 IT ; SR1900 IT ; SR2000 IT ; SR2400 IT ; SR02400 IT ; VT1708 IT ; VT2009B IT ; VT2014B IT ; VT2214 IT ; VT2412B IT ; VT2514B IT ; VT02214B IT ; VT02514B IT ; VT2814B IT ; VT02814B IT

### To apply with Gear Pumps or with 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		Right Hand
Weight (kg)		12,5
PTO internal ratio	1:1,32	
Indicative ratio from motor to PTO's output		
R 1000 IT ; R 1400 IT ; R 1700 IT ; VT1708 IT ; VT2009B IT	1 : 0.920	
SR 1400 IT ; SR 1700 IT ; SR 1900 IT ; VT2014B IT ; VT2214 IT ; VT2514B IT	High: 1 : 1.160	Normal: 1 : 0.920
SR 2000 IT	High: 1 : 1.080	Normal: 1 : 0.860
SRO 2400 IT	High: 1 : 1.360	Normal: 1 : 1.082
VT2412B IT	High: 1 : 1.190	Normal: 1 : 0.920
VTO2214B IT ; VTO2514B IT	High: 1 : 1.448	Normal: 1 : 1.160

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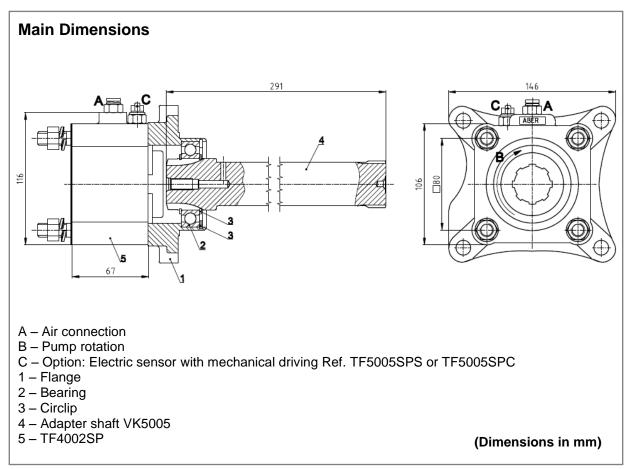
ABER - Embraiagens e Comandos Hidráulicos - A. B. LDA Rua Francisco de Almeida, Nº 30 - Vila Nova da Telha - 4470 MAIA - Portugal

Telefone: +351.22.9438070 Fax: +351.22.9420823 e-mail: aber@aber.pt http://www.aber.pt 1/1



R1000 IT ; SR1000 IT ; R1400 IT ; R1700 IT : SR1400 IT ; SR1700 IT ; SR1900 IT ; SR2000 IT ; SR2400 IT ; SR02400 IT ; VT1708 IT ; VT2009B IT ; VT2014B IT ; VT2214 IT ; VT2412B IT ; VT2514B IT ; VT02214B IT ; VT02514B IT ; VT2814B IT ; VT02814B IT

### To apply with Gear Pumps or with 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)		9
PTO internal ratio		1:1
Indicative ratio from motor to PTO's output		
R 1000 IT ; R 1400 IT ; R 1700 IT ; VT1708 IT ; VT2009B IT	1 : 0.700	
SR 1400 IT ; SR 1700 IT ; SR 1900 IT ; VT2014B IT ; VT2214 IT ; VT2514B IT	High: 1 : 0.880	Normal: 1 : 0.700
SR 2000 IT	High: 1 : 0.820	Normal: 1 : 1.650
SRO 2400 IT	High: 1 : 1.030	Normal: 1 : 0.820
VT2412B IT	High: 1 : 0.903	Normal: 1 : 0.700
VTO2214B IT ; VTO2514B IT	High: 1 : 1.094	Normal: 1 : 0.880

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CTI TF5005SP 1211-2

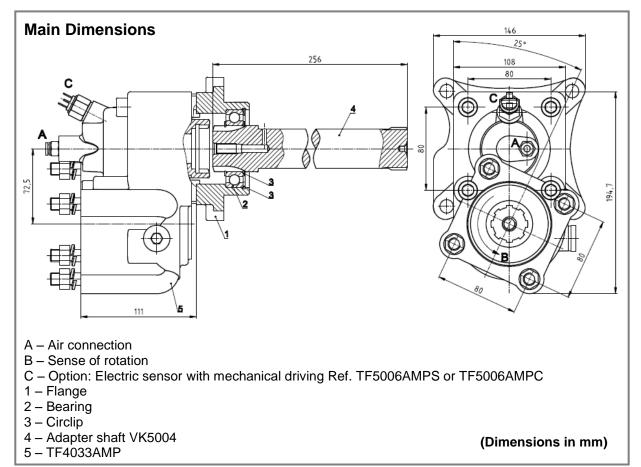


### **Power Take Offs**

Relation 1:1

R1000; SR1000; R1400; R1700; SR1400; SR1700; SR1900; SR2000; SR2400; SRO2400; VT1708; VT2009B; VT2014B; VT2214; VT2412B; VT2514B; VTO2214B; VTO2514B; VT2814B; VTO2814B

To apply with Gear Pumps or with Piston Pumps



Main Dat	а	
Continuous Torque (Nm)		500
Intermittent Torque (Nm)		550
Power (at 1000 rpm)		69 cv / 51 kW
Mounting Position		Rear
Pump Rotation		Right Hand
Weight (kg)		16
PTO internal ratio		1:1
Indicative ratio from motor to PTO's output		
R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B	1 : 0.700	
SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B	High: 1 : 0.880	Normal: 1 : 0.700
SR 2000	High: 1 : 0.820	Normal: 1 : 1.650
SRO 2400	High: 1 : 1.030	Normal: 1 : 0.820
VT2412B	High: 1 : 0.903	Normal: 1 : 0.700
VTO2214B ; VTO2514B	High: 1 : 1.094	Normal: 1 : 0.880

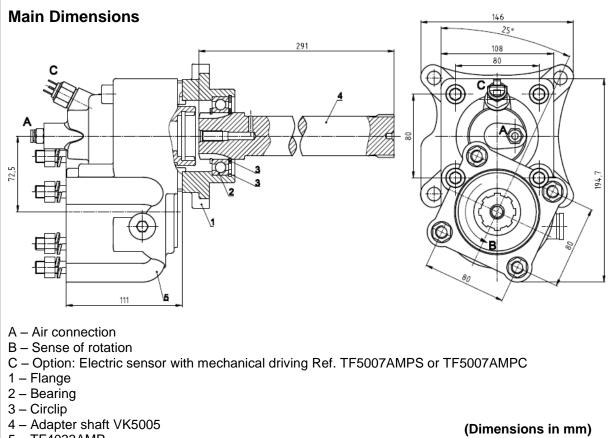
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VOLVO R1000 IT; SR1000 IT; R1400 IT; R1700 IT; SR1400 IT; SR1700 IT; SR1900 IT; SR2000 IT; SR2400 IT; SR2400 IT; SR2400 IT; VT2009B IT; VT2014B IT; VT2214 IT; VT2214 IT; VT2214B IT; VT2514B IT; VT2514B IT; VT02514B IT; VT02814B IT; VT0 2814B IT

To apply with Gear Pumps or with Piston Pumps



5 – TF4033AMP

Main Data **Continuous Torque (Nm)** 500 Intermittent Torque (Nm) 550 69 cv / 51 kW Power (at 1000 rpm) **Mounting Position** Rear **Pump Rotation Right Hand** Weight (kg) 16,2 **PTO internal ratio** 1:1 Indicative ratio from motor to PTO's output R 1000 IT; R 1400 IT; R 1700 IT; VT1708 IT; VT2009B IT .- 1 : 0.700 SR 1400 IT; SR 1700 IT; SR 1900 IT; VT2014B IT; VT2214 IT; VT2514B IT High: .- 1 : 0.880 Normal: .- 1 : 0.700 SR 2000 IT High: .- 1 : 0.820 Normal: .- 1 : 1.650 SRO 2400 IT High: .- 1 : 1.030 Normal: .- 1: 0.820 VT2412B IT High: .- 1 : 0.903 Normal: .- 1: 0.700 VTO2214B IT; VTO2514B IT High: .- 1 : 1.094 Normal: .- 1 : 0.880

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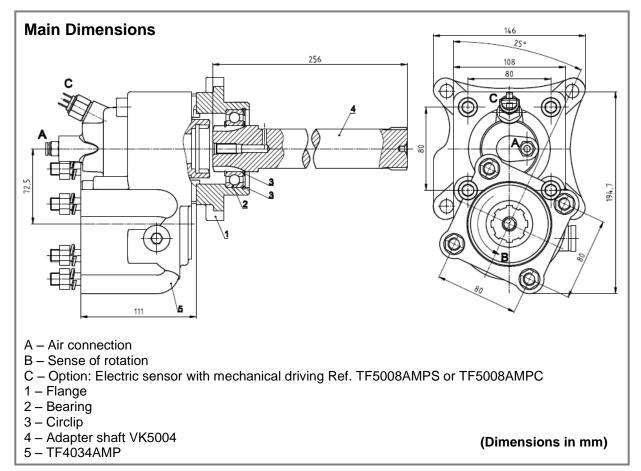


### **Power Take Offs**

Relation 1:1,73

R1000; SR1000; R1400; R1700; SR1400; SR1700; SR1900; SR2000; SR2400; SRO2400; VT1708; VT2009B; VT2014B; VT2214; VT2412B; VT2514B; VTO2214B; VTO2514B; VT2814B; VTO2814B

To apply with Gear Pumps or with Piston Pumps



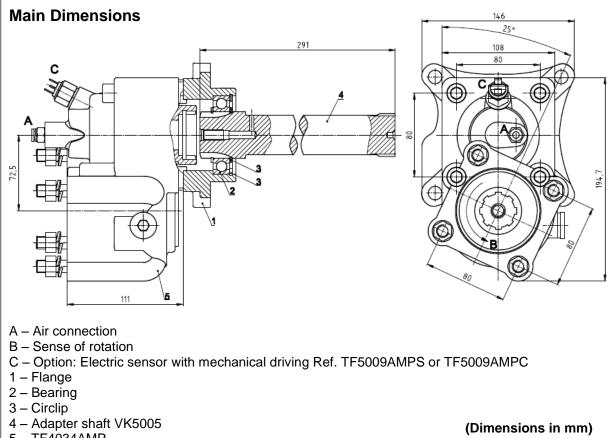
Main Data			
Continuous Torque (Nm)	350		
Intermittent Torque (Nm)		450	
Power (at 1000 rpm)		48 cv / 36 kW	
Mounting Position		Rear	
Pump Rotation	Right Hand		
Weight (kg)	16		
PTO internal ratio	1:1,73		
Indicative ratio from motor to PTO's output			
R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B	1 : 1.211		
SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B	High: 1 : 1.522	Normal: 1 : 1.211	
SR 2000	High: 1 : 1.419	Normal: 1 : 2.855	
SRO 2400	High: 1 : 1.782	Normal: 1 : 1.419	
VT2412B	High: 1 : 1.562	Normal: 1 : 1.211	
VTO2214B ; VTO2514B	High: 1 : 1.893	Normal: 1 : 1.522	





R1000 IT; SR1000 IT; R1400 IT; R1700 IT; SR1400 IT; SR1700 IT; SR1900 IT; SR2000 IT; SR2400 IT; SR02400 IT; VT1708 IT; VT2009B IT; VT2014B IT; VT2214 IT; VT2412B IT; VT2514B IT; VT02214B IT; VT02514B IT; VT2814B IT; VT02814B IT VOLVO

To apply with Gear Pumps or with Piston Pumps



5 – TF4034AMP

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)		16,2	
PTO internal ratio	1:1,73		
Indicative ratio from motor to PTO's output			
R 1000 IT; R 1400 IT; R 1700 IT; VT1708 IT; VT2009B IT	1 : 1.211		
SR 1400 IT; SR 1700 IT; SR 1900 IT; VT2014B IT; VT2214 IT; VT2514B IT	High: 1 : 1.522	Normal: 1 : 1.211	
SR 2000 IT	High: 1 : 1.419	Normal: 1 : 2.855	
SRO 2400 IT	High: 1 : 1.782	Normal: 1 : 1.419	
VT2412B IT	High: 1 : 1.562	Normal: 1 : 1.211	
VTO2214B IT; VTO2514B IT	High: 1 : 1.893	Normal: 1 : 1.522	

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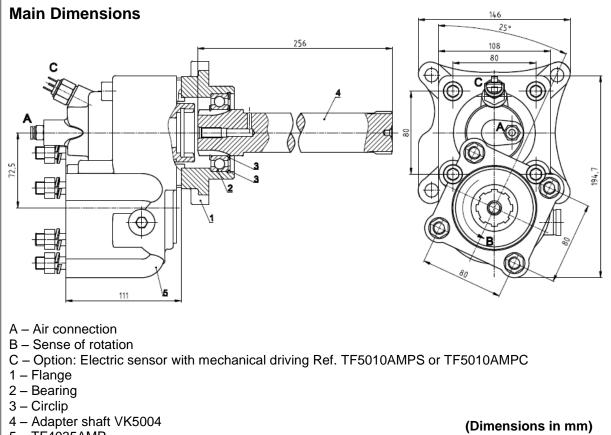


### **Power Take Offs**

Relation 1:1,56

R1000; SR1000; R1400; R1700; SR1400; SR1700; SR1900; SR2000; SR2400; SRO2400; VT1708; VT2009B; VT2014B; VT2214; VT2412B; VT2514B; VTO2214B; VTO2514B; VT2814B; VTO2814B

To apply with Gear Pumps or with Piston Pumps



5 – TF4035AMP

Main Data **Continuous Torque (Nm)** 400 Intermittent Torque (Nm) 500 Power (at 1000 rpm) 55 cv / 40 kW **Mounting Position** Rear **Pump Rotation Right Hand** Weight (kg) 16 **PTO internal ratio** 1:1,56 Indicative ratio from motor to PTO's output R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B .-1:1.092 SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B High: .- 1 : 1.373 Normal: .- 1 : 1.092 SR 2000 High: .- 1 : 1.279 Normal: .- 1 : 2.574 SRO 2400 High: .- 1 : 1.607 Normal: .- 1 : 1.279 VT2412B High: .- 1 : 1.409 Normal: .- 1 : 1.092 VTO2214B ; VTO2514B High: .- 1 : 1.707 Normal: .- 1 : 1.373

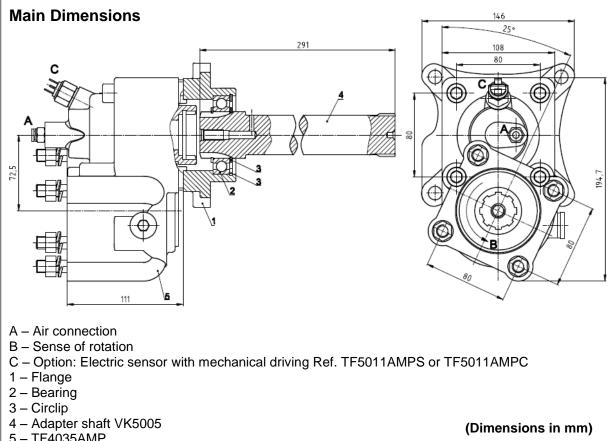
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R1000 IT; SR1000 IT; R1400 IT; R1700 IT; SR1400 IT; SR1700 IT; SR1900 IT; SR2000 IT; SR2400 IT; SR02400 IT; VT1708 IT; VT2009B IT; VT2014B IT; VT2214 IT; VT2412B IT; VT2514B IT; VT02214B IT; VT02514B IT; VT2814B IT; VT02814B IT VOLVO

To apply with Gear Pumps or with Piston Pumps



5 –	TF4035AMP	)

Main Data			
Continuous Torque (Nm)	400		
Intermittent Torque (Nm)	500		
Power (at 1000 rpm)		55 cv / 40 kW	
Mounting Position		Rear	
Pump Rotation		Right Hand	
Weight (kg)		16,2	
PTO internal ratio		1:1,56	
Indicative ratio from motor to PTO's output			
R 1000 IT; R 1400 IT; R 1700 IT; VT1708 IT; VT2009B IT	1 : 1.092		
SR 1400 IT; SR 1700 IT; SR 1900 IT; VT2014B IT; VT2214 IT; VT2514B IT	High: 1 : 1.373	Normal: 1 : 1.092	
SR 2000 IT	High: 1 : 1.279	Normal: 1 : 2.574	
SRO 2400 IT	High: 1 : 1.607	Normal: 1 : 1.279	
VT2412B IT	High: 1 : 1.409	Normal: 1 : 1.092	
VTO2214B IT; VTO2514B IT	High: 1 : 1.707	Normal: 1 : 1.373	

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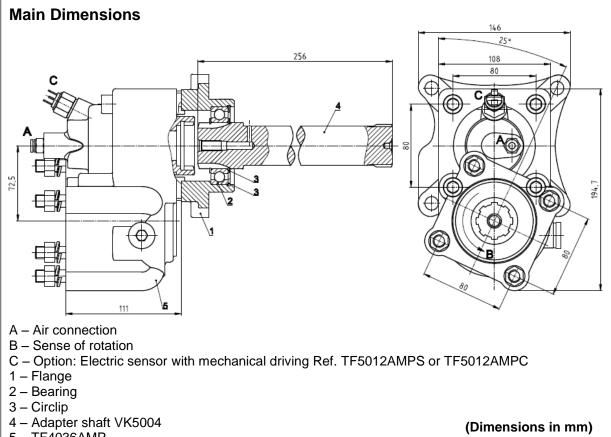


### **Power Take Offs**

### Relation 1:1,35

R1000; SR1000; R1400; R1700; SR1400; SR1700; SR1900; SR2000; SR2400; SRO2400; VT1708; VT2009B; VT2014B; VT2214; VT2412B; VT2514B; VTO2214B; VTO2514B; VT2814B; VTO2814B

To apply with Gear Pumps or with Piston Pumps



-	-					
5	- 1	ΓF4	03	6A	M	P

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)	16		
PTO internal ratio	1:1,35		
Indicative ratio from motor to PTO's output			
R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B	1 : 0.945		
SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B	High: 1 : 1.188	Normal: 1 : 0.945	
SR 2000	High: 1 : 1.107	Normal: 1 : 2.228	
SRO 2400	High: 1 : 1.391	Normal: 1 : 1.107	
VT2412B	High: 1 : 1.219	Normal: 1 : 0.945	
VTO2214B ; VTO2514B	High: 1 : 1.477	Normal: 1 : 1.188	

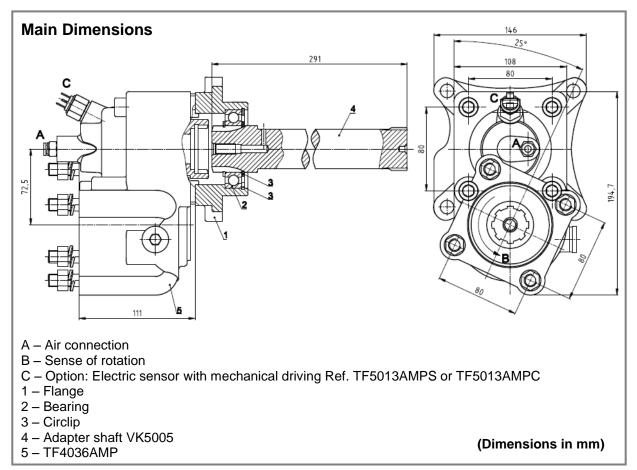
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R1000 IT; SR1000 IT; R1400 IT; R1700 IT; SR1400 IT; SR1700 IT; SR1900 IT; SR2000 IT; SR2400 IT; SRO2400 IT; VT1708 IT; VT2009B IT; VT2014B IT; VT2214 IT; VT2412B IT; VT2514B IT; VTO2214B IT; VTO2514B IT; VT2814B IT; VTO2814B IT

To apply with Gear Pumps or with Piston Pumps



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)		16,2
PTO internal ratio		1:1,35
Indicative ratio from motor to PTO's output		
R 1000 IT; R 1400 IT; R 1700 IT; VT1708 IT; VT2009B IT	1 : 0.945	
SR 1400 IT; SR 1700 IT; SR 1900 IT; VT2014B IT; VT2214 IT; VT2514B IT	High: 1 : 1.188	Normal: 1 : 0.945
SR 2000 IT	High: 1 : 1.107	Normal: 1 : 2.228
SRO 2400 IT	High: 1 : 1.391	Normal: 1 : 1.107
VT2412B IT	High: 1 : 1.219	Normal: 1 : 0.945
VTO2214B IT; VTO2514B IT	High: 1 : 1.477	Normal: 1 : 1.188

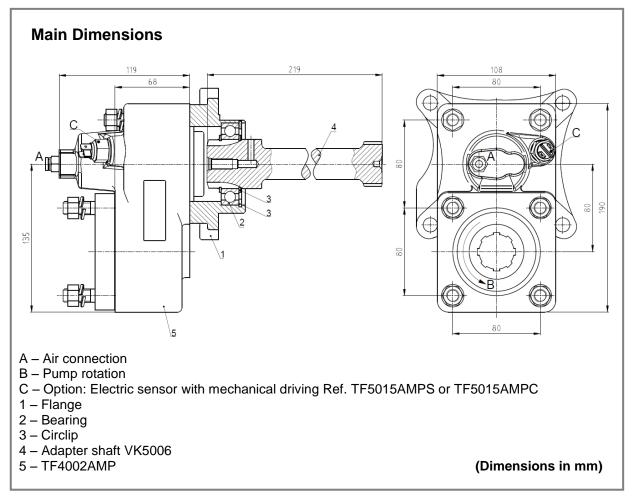




VOLVO

AT 2412C; AT 2412AT; AT 2512C; AT 2514; AT 2515C; AT 2812C; ATO 2512C; ATO 3112C

### To apply with Gear pumps or with 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		Right Hand
Weight (kg)		11,5
PTO internal ratio		1:1,32
Indicative ratio from motor to PTO's output		
AT 2412C	High: 1 : 1.162	Normal: 1 : 0.924



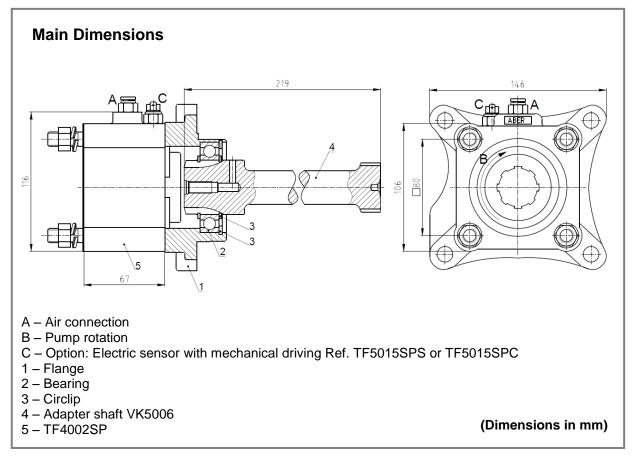


VOLVO

AT 2412C; AT 2412AT; AT 2512C; AT 2514; AT 2515C; AT 2812C;

ATO 2512C; ATO 3112C

### To apply with Gear pumps or with 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		Right Hand
Weight (kg)		7,5
PTO internal ratio		1:1
Indicative ratio from motor to PTO's output		
AT 2412C	High: 1 : 0.880	Normal: 1 : 0.700

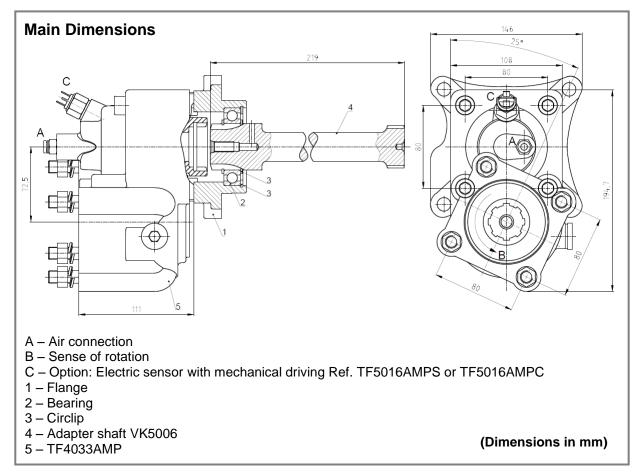




VOLVO

AT 2412C; AT 2412AT; AT 2512C; AT 2514; AT 2515C; AT 2812C; ATO 2512C; ATO 3112C

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



Main Data		
Continuous Torque (Nm)		500
Intermittent Torque (Nm)		550
Power (at 1000 rpm)		69 cv / 51 kW
Mounting Position		Rear
Pump Rotation		Right Hand
Weight (kg)		15,3
PTO internal ratio		1:1
Indicative ratio from motor to PTO's output		
AT 2412C	High: 1 : 0.880	Normal: 1 : 0.700

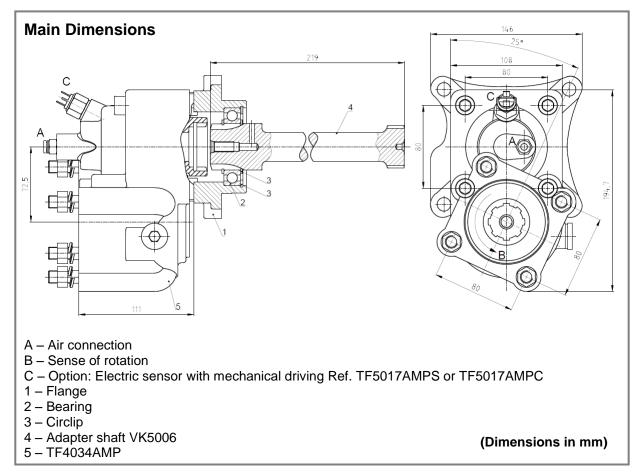




VOLVO

AT 2412C; AT 2412AT; AT 2512C; AT 2514; AT 2515C; AT 2812C; ATO 2512C; ATO 3112C

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



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)		15,3
PTO internal ratio		1:1,73
Indicative ratio from motor to PTO's output		
AT 2412C	High: 1 : 1.522	Normal: 1 : 1.211

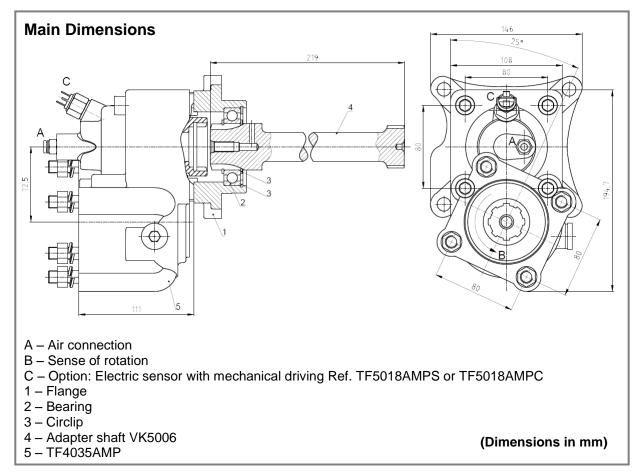




VOLVO

AT 2412C; AT 2412AT; AT 2512 C; AT 2514; AT 2515C; AT 2812C; ATO 2512C; ATO 3112C

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



Main Data		
Continuous Torque (Nm)		400
Intermittent Torque (Nm)		500
Power (at 1000 rpm)		55 cv / 40 kW
Mounting Position		Rear
Pump Rotation		Right Hand
Weight (kg)		15,3
PTO internal ratio		1:1,56
Indicative ratio from motor to PTO's output		
AT 2412C	High: 1 : 1.373	Normal: 1 : 1.092

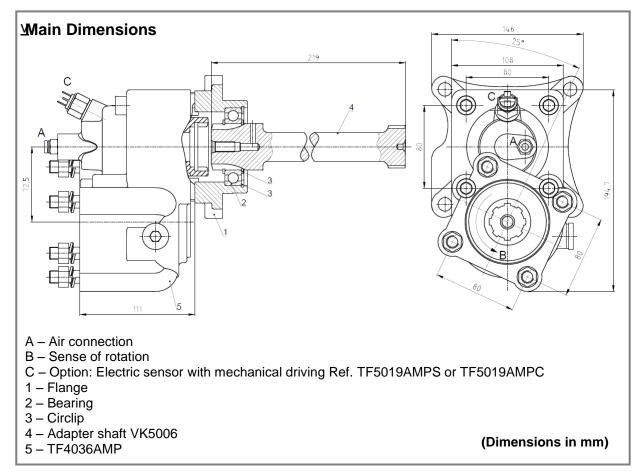




VOLVO

AT 2412C; AT 2412AT; AT 2512 C; AT 2514; AT 2515C; AT 2812C; ATO 2512C; ATO 3112C

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



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)		15,3
PTO internal ratio		1:1,35
Indicative ratio from motor to PTO's output		
AT 2412C	High: 1 : 1.188	Normal: 1 : 0.945



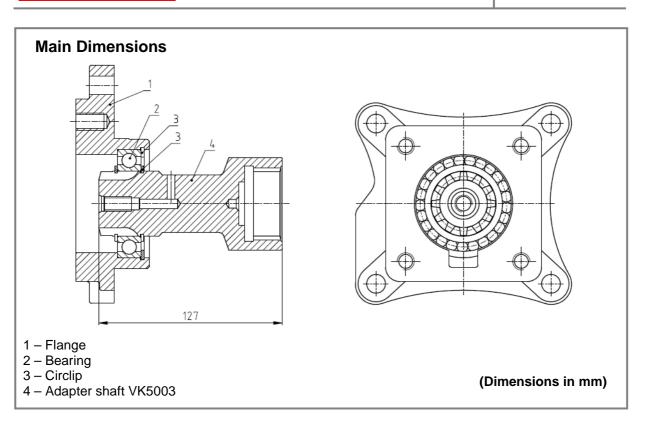


### ADAPTER KIT TO POWER TAKE OFFS VOLVO

R70 ; SR70 ; SR71

Ref. VK5003S VK5003AM

1/1



Main Data			
<b>Continuous T</b>	orque (Nm)		300
Intermittent T	orque (Nm)		420
Power (at 100	0 r.p.m)		42 C.V. / 32 Kw
Weight (Kg)	• •		4
Engine-Kit ad	lapter ratio		
R70	1 : 0.840		
SR70 ; SR71	High: 1 : 1.040	Normal: 1 : 0.840	

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 SR70 ; SR71 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: High - 1 : 1.373 (1.040 x 1.32 = 1.373) Normal - 1 : 1.109 (0.840 x 1.32 = 1.109)

Note 2:

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

- 4 screws UMB M12x35

- 4 washers

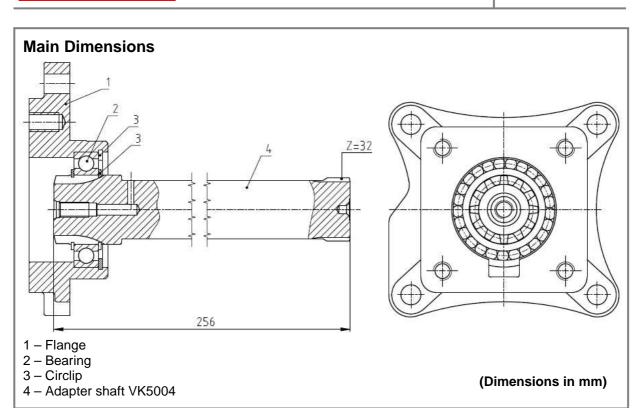
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### ADAPTER KIT TO POWER TAKE OFFS VOLVO

R1000; SR1000; R1400; R1700; SR1400; SR1700; SR1900; SR2000; SR2400; SRO2400; VT1708; VT2009B; VT2014B; VT2214; VT2412B; VT2514B; VTO2214B; VTO2514B; VT 2814B; VTO 2814B Ref. VK5004S VK5004AM



Main Data			
Continuous Torque (Nm)		300	
Intermittent Torque (Nm)		420	
Power (at 1000 r.p.m)		42 C.V. / 32 Kw	
Weight (Kg)		5	
Engine-Kit adapter ratio			
R 1000 ; R 1400 ; R 1700 ; VT1708 ; VT2009B	1 : 0.700		
SR 1400 ; SR 1700 ; SR 1900 ; VT2014B ; VT2214 ; VT2514B	High: 1 : 0.880	Normal: 1 : 0.700	
SR 2000	High: 1 : 0.820	Normal: 1 : 1.650	
SRO 2400	High: 1 : 1.030	Normal: 1 : 0.820	
VT2412B	High: 1 : 0.903	Normal: 1 : 0.700	
VTO2214B ; VTO2514B	High: 1 : 1.094	Normal: 1 : 0.880	

#### 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 SR1400 ; SR1700 ; SR 1900 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: High .- 1 : 1.162 (0.880 x 1.32 = 1.162) Normal .- 1 : 0.924 (0.700 x 1.32 = 0.924)

#### Note 2:

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

- 4 screws UMB M12x35

- 4 washers

- 1 jute Volvo

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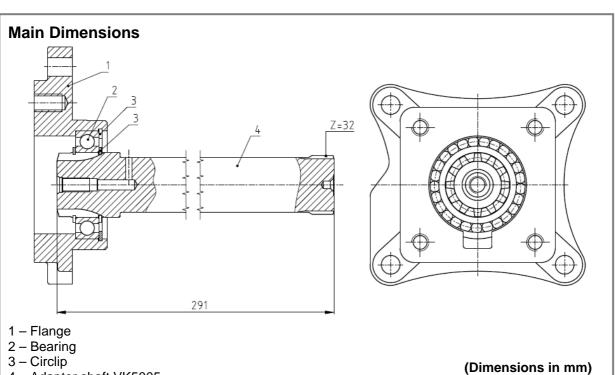
 Rua Francisco de Almeida, Nº 30 - Vila Nova da Telha - 4470 MAIA - Portugal

 Telefone: +351.22.9438070
 Fax: +351.22.9420823 e-mail: <a href="mailto:aber@aber.pt">aber@aber.pt</a> <a href="http://www.aber.pt">http://www.aber.pt</a>



### ADAPTER KIT TO POWER TAKE OFFS VOLVO R1000 IT; SR 1000 IT; R1400 IT; R 1700 IT; SR1400 IT; SR1700 IT; SR1900 IT; SR2000 IT ; SR2400 IT ; SR02400 IT; VT1708 IT; VT2009B IT; VT2014B IT; VT2214 IT; VT2412B IT; VT2514B IT; VT02214B IT; VTO2514B IT; VT 2814B IT; VTO 2814B IT

Ref. VK5005S VK5005AM



4 - Adapter shaft VK5005

Main Data				
Continuous Torque (Nm)	300			
Intermittent Torque (Nm)		420		
Power (at 1000 r.p.m)		42 C.V. / 32 Kw		
Weight (Kg)		5.2		
Engine-Kit adapter ratio				
R 1000 IT; R 1400 IT; R 1700 IT; VT1708 IT; VT2009B IT	1 : 0.700			
SR 1400 IT; SR 1700 IT; SR 1900 IT; VT2014B IT; VT2214 IT; VT2514B IT	High: 1 : 0.880	Normal: 1 : 0.700		
SR 2000 IT	High: 1 : 0.820	Normal: 1 : 1.650		
SRO 2400 IT	High: 1 : 1.030	Normal: 1 : 0.820		
VT2412B IT	High: 1 : 0.903	Normal: 1 : 0.700		
VTO2214B IT; VTO2514B IT	High: 1 : 1.094	Normal: 1 : 0.880		

#### 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 SR1400 ; SR1700 ; SR 1900 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: High .- 1 : 1.162 (0.880 x 1.32 = 1.162) Normal .- 1 : 0.924 (0.700 x 1.32 = 0.924)

#### Note 2:

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

- 4 screws UMB M12x35

- 4 washers

- 1 jute Volvo

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

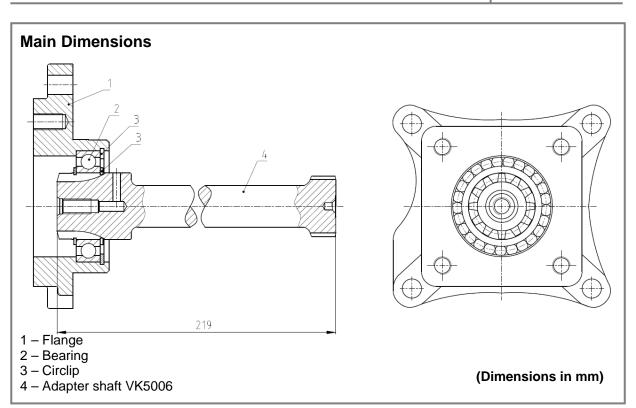




### ADAPTER KIT TO POWER TAKE OFFS VOLVO

### AT 2412C; AT 2412AT; AT 2512 C; AT 2514; AT 2515C; AT 2812C; ATO 2512C; ATO 3112C

Ref. VK5006S VK5006AM



Main Data		
Continuous Torque (Nm)		600
Intermittent Torque (Nm)		840
Power (at 1000 r.p.m)		42 C.V. / 32 Kw
Weight (Kg)		4.1
Engine to PTO ratio		
AT 2412C	High: 1 : 0.880	Normal: 1 : 0.700

#### 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 SR1400 ; SR1700 ; SR 1900 Adapter Kit + ZF S6-90 (Ref. TF4002AMP) Internal Ratio 1:1.32 Final ratio: High .- 1 : 1.162 (0.880 x 1.32 = 1.162) Normal .- 1 : 0.924 (0.700 x 1.32 = 0.924)

Note 2:

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