

e-service

F400-13

Item – ref.	Subject	Date
530247	Overview Of Pulleys On T Dryers	May 2010

 **WARNING:**

- Carry out the handling according to the following manufacturers instruction
- Always respect warnings from the relevant manuals of the machines
- Make sure all electric power or other energy sources are disconnected and closed before any servicing, always turn of the main switch
- Wait 10 minutes after electrical power is disconnected to eliminate power on the inverter terminals
- Installation, maintenance and service must be executed by skilled service personnel only or by a service organisation with appropriate authorization from the manufacturer
- For service, use only original replacement parts
- Re-install all machine parts in the original way
- The qualified agency performing this work assumes all responsibility for this kit installation. Other service activities than described below, disable all manufacturers responsibility
- Make sure children are not around during work in progress

Applicable machine models:

- | | | |
|--|--|-------------------------------|
| <input type="radio"/> DAM5, DAMC5 | <input type="radio"/> T1313, TAM13 | <input type="radio"/> D25, 35 |
| <input type="radio"/> DA9, DAM(S)(T)9 | <input checked="" type="radio"/> T24, 35 | <input type="radio"/> D55, 77 |
| <input checked="" type="radio"/> T9 | <input type="radio"/> DA11, 13, 15 | |
| <input checked="" type="radio"/> T11, 13, 16 | <input type="radio"/> DA1313 | |

Dryers

Applicable type of spare parts:

- | | | |
|---------------------------------|---|---|
| <input type="radio"/> General | <input type="radio"/> Heating unit | <input type="radio"/> Drum |
| <input type="radio"/> Chasis | <input checked="" type="radio"/> Motor / pulley / belts | <input type="radio"/> Door |
| <input type="radio"/> Cabinet | <input type="radio"/> Bearing house & seals | <input type="radio"/> Exhaust |
| <input type="radio"/> Controler | <input type="radio"/> Air filter | <input type="radio"/> Electric components & sensors |
| <input type="radio"/> Coin unit | <input type="radio"/> Air fan | |

Summary:

This information is intended to explain the evolution of the drive system on dryers T9÷35 and to provide a guide for selecting correct spare parts concerning drive pulleys and belts.

Drive evolution:

During the evolution of the dryers the gear ratio was changed several times to optimise the drive performance.

Drive version 1:

Originally the dryers were equipped with motors turning at 3000 RPM. Unfortunately such motors turned out to be too noisy; therefore it was decided to redesign the machines so that motors with 1500 RPM could be used.

Drive version 2:

As the speed of the motors became approximately one half like before (1500 RPM), both the fan and the drum drive had to be adapted.

The fan wheel must be bigger so that the fan performance stays the same at lower RPM, therefore the fan housing was redesigned completely.

The motor pulley diameter became double so that the drum RPM stay the same with lower motor RPM.

The width of the drum belt on T24/35 was increased.

Drive version 3:

It was only used on T24/35 to prevent slipping of belts. The gear ratio was changed.

Drive version 4:

This is the final version of the gear ratio. The main motivation for this change was, again, preventing the belts from slipping.

Following developments of the drive did bring no pulley diameter change any more; they just further optimised the drive performance. They were:

- reinforcement of the drum pulley
- introduction of flywheel on reversing dryers (the flywheel on the motor pulley, by its inertia, totally eliminates possible slipping of belts at each start of the motor during reversing; see also e-service mail "530226 Flywheel")
- modification of placement of the bearings in the intermediate pulley (easier assembly procedure, longer lifetime)

Rebuilding possibilities:

It is not possible to rebuild a dryer with drive version 1 to drive version 2 as such rebuild would be too complicated (it is not possible to replace the fan housing in a reasonable way). However, versions 2 and 3 can be easily upgraded to version 4 just by replacing the pulleys (and in some cases also the belts + drilling a few new holes).

Required parts:

Please see the attached 3 tables for parts information:

- Table “List of modifications” summarizes the evolution described below.
- Table “Serial numbers & Part numbers“ is a tool for selecting correct part numbers according the serial number of the dryer.
- Table “Photos” provides an overview of the pulleys in form of photos. You can see how the diameters changed between individual drive versions.

In case you have further technical questions please do not hesitate to contact the Primus aftersales department.

Type	Drive version 1)	Description of modification	Replaceability for older machines	ECN or deviation	VALID FROM	1st serial number	Motor belt		Motor pulley						Intermediate pulley		Drum pulley		Drum belt						
							Type	P.N.	50 Hz		60 Hz		Big diam.	Small dia.	Part number		Diameter	P.N.	Type	P.N.					
									reversing	non-reversing	Diameter	reversing			non-reversing	Pulley					Assem bly 2)				
T11-16 T24-35	1	Original version - 3000 RPM	N.A.			-	4PJ1473 4PJ1600	515498 521066	42	515505	515523	34	515506	515524	383	49 44	518645 521101	- -	383	518646	8PJ1473	518647			
T9	2	Change of motor RPM from 3000/min to 1500/min	Conditionally - only for machines with reversing - motor, pulleys and belts have to be replaced - see also ECN360. It is not possible to replace the fan motor.	06/007	10.2.06	T9 -256/00016	4PJ1397	515553	86	521209	521236	69	524327	524328	383	49	518645	-	383	518646	8PJ1473	518647			
T11-16						T11-244/01803	4PJ1473	515498				72	523750	523751											
T24-35						T16-246/01787	4PJ1600	521066				72	523750	523751									60	523748	523749
T24-35	3	Iron intermediate pulley with smaller diameter and smaller motor pulley. ON REVERSING MACHINES 50 Hz ONLY	Modification of DRIVE SUPPORT necessary - see service instruction 527721 and rebuild sets 527735 ÷ 527741.	D06-33 D06-34 D06-81 D07-08	17.3.06	T24-252/01867 T35-254/01853	6PJ1067	524255	24	527856	-	-	-	135	56	524224	-	383	523731	10PJ1473	523732				
T9	T11-16 T24-35	Change of diameter of motor pulley and intermediate pulley	Modification of DRIVE SUPPORT necessary - see service instruction 527721 and rebuilt sets 527735 ÷ 527741.	ECN360 D07-17 D07-29	Tempor. solution: 19.2.07 Final solution: 14.8.07	9T000748LE	4PJ1397	515553	42	527707	527723	34	528921	528922	383	96	527733	527742	383	518646	8PJ1473	518647			
T11-16						11T002404LE	4PJ1473	515498				34	528921	528922											
T24-35						13T002249LE 16T002618LE 24T002449LE 35T002309LE	6PJ1600	528925				40	527708	527724									32	528923	528924
T24 T35	T9 T11-16 T24-35	Stronger drum pulley	Use new code 530681 instead of 523731.	ECN1046	10.10.08	24T003307NT 35T002862NT	6PJ1600	528925	40	527708	527724	32	528923	528924	383	96	527733	527742	383	530681	10PJ1473	523732			
T9						9T002483PE	4PJ1397	515553	42	530720	527723	34	530721	528922	383	96	527733	527742	383	518646	8PJ1473	518647			
T11-16						11T002979NV 13T002979NV 16T003856MX	4PJ1473	515498															34	530721	528922
T24-35	24T003315MT 35T002868NT	6PJ1600	528925	40	530690	527724	32	530719															528924	383	530681
T9	T11-16 T24-35	Intermediate pulley modification - better placement of bearings	Use new code 534676 instead of 527742. Washer 311125000013 must be added between sliding plate and shaft.	ECN1420	5.11.09	9T002979PT	4PJ1397	515553	42	530720	527723	34	530721	528922	383	96	534703	534676	383	518646	8PJ1473	518647			
T11-16						11T003201PV 13T003084PV 16T004309PV	4PJ1473	515498															34	530721	528922
T24-35						24T003748PV 35T003112PV	6PJ1600	528925															40	530690	527724

1) Each drive version means a certain combination of pulleys diameters; pulleys of the same drive version are mutually replaceable

2) Assembly contains pulley, bearings, shaft and retaining rings; it is recommended to replace always the complete assembly

Part numbers in grey - not recommended to use, to be replaced by new executions

Type	From serial number	Till serial number	Motor belt		Motor pulley						Intermediate pulley			Drum pulley		Drum belt							
					Type	P.N.	50 Hz			60 Hz			Big diam.	Small dia.	Part number		Diameter	P.N.	Type	P.N.			
			Diameter	reversing			non-reversing	Diameter	reversing	non-reversing	Pulley	Assem bly 1)											
T9	256/00016	9T000747LE	4PJ1397	515553	86	521209	521236	69	524327	524328	383	49	518645	-	383	518646	8PJ1473	518647					
	9T000748LE	9T002482PE				527707			528921														
	9T002483PE	9T002978PT			42		527723	34	530721	528922		96	527733	527742									
	9T002979PT					530720							534703	534676									
T11-16		T11-244/01802 T13-245/01784 T16-246/01786	4PJ1473	515498	42	515505	515523	34	515506	515524	383	49	518645	-	383	518646	8PJ1473	518647					
	T11-244/01803 T13-245/01785 T16-246/01787	11T002403LE 13T002248LE 16T002617LE			86	521209	521236	72	523750	523751													
	11T002404LE 13T002249LE 16T002618LE	11T002978NV 13T002978PR 16T003855NX				527707			528921											527733	527742		
	11T002979NV 13T002979NV 16T003856MX	11T003200PV 13T003083PV 16T004308PV			42		527723	34		528922									96				
	11T003201PV 13T003084PV 16T004309PV					530720			530721											534703	534676		
T24-35		T24-252/01525 T35-254/01352	4PJ1600	521066	42	515505	515523	34	515506	515524	383	44	521101	-	383	518646	8PJ1473	518647					
	T24-252/01526 T35-254/01353	T24-252/01866 T35-254/01852			72	523750	523751	60	523748	523749		56	523730	-									
	T24-252/01867 T35-254/01853	24T002448LE 35T002308LE	6PJ1067	524255	24	527856	-	-	-	-	135	56	524224	-						523731			
	24T002449LE 35T002309LE	24T003306NT 35T002861NT				527708			528923														
	24T003307NT 35T002862NT	24T003314NT 35T002867NT	6PJ1600	528925	40		527724	32		528924	383	96	527733	527742					530681	10PJ1473	523732		
	24T003315MT 35T002868NT	24T003747PV 35T003111PV					530690		530719														
	24T003748PV 35T003112PV																						

Revision: 0 (14.5.2010)

Drive version 1 (3000 RPM)

Motor pulley 515505 (515523)



Intermediate pulley 521101 (518645)



Drum pulley 518646




Drive version 2

Motor pulley 523750 (523751, 521209, 521236)



Intermediate pulley 523730 (518645)



Drum pulley 523731 (518646)




Drive version 3

Motor pulley 527856



Intermediate pulley 524224



Drum pulley 523731




Drive version 4

Motor pulley 527708 (527707) or Motor pulley 530690 (530720) - flywheel



Intermediate pulley 534703 (527733)



Drum pulley 523731 (530681, 518646)




The same diameter