



TLT-Turbo GmbH

Erection- and Maintenance Manual

of

Dopol-Klin-Fan Type 2516 ZA/1286

TLT-Job No.: 71260-3

2	25Jan06	Ritz	26Jan06	Labod	Customer: Polysius AG	Job: IRSAB	
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2. Description

2.1 Rating Data / Technical Data

Kind of Fan: Dopol-Klin Fan
Type of fan: 2516 ZA/1286
Job No.: 71260-3
Built in: 2005
Factory No.: 723006978 / 723006979
Sense of rotation: R (VDMA) acc. VDMA 24165

Characteristic of the fan:	Volumetric flow rate:	148,3	m ³ /s
	Gas temperature:	335	°C
	Temperature max. mech.:	450	°C
	Spec. Energy	13479	J/kg
	Density at fan inlet	0,577	kg/m ³
	Total pressure rise:	8019	Pa
	Fan speed:	990	rpm
	Fan speed max.:	1050	rpm
	Power required at shaft:	1409	kW
	Mass inertia moment (J = 0,25 x GD ²):	5600	kgm ²
	Motor power:	1776	kW
	Motor speed:	330 - 990	1/min

Kind of installation: concrete foundation
Kind of control: variable speed control
Kind of coupling: flex. compression sleeve coupling
Kind of bearing: oil lubricated roller bearing
Weight of machinery (without motor and insulation): app. 23780 kg
General drawing No.: H6002315

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2.1.1 Parts of delivery

Driver: (by Customer)

Motor-Fabricate / Type: ELIN / HKR 180 D06	Rated output: 1776 kW
Size: IM B3	Rated speed: 330-990 1/min
Frequency: 50 Hz	Rated voltage: 1000 V
Weight: 9000 kg	Protection: IP 54

Coupling:

Manufacture: Flender	Type: RWN 560
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Bearing:

Manufacture: SNR	Type: SNOE 230
Lubricant: Oil	ISO VG 100
Set points of bearing temperature: (measured at outside bearing ring)	Set points of vibration monitoring: (measured at outside bearing ring)
Alarm: 95°C	Alarm: 8,8 mm/s
Disconnection: 105 °C	Disconnection: 11 mm/s

Thermo couple:

manufacturer: Dittmer	Type: Pt100 3 Wire connection
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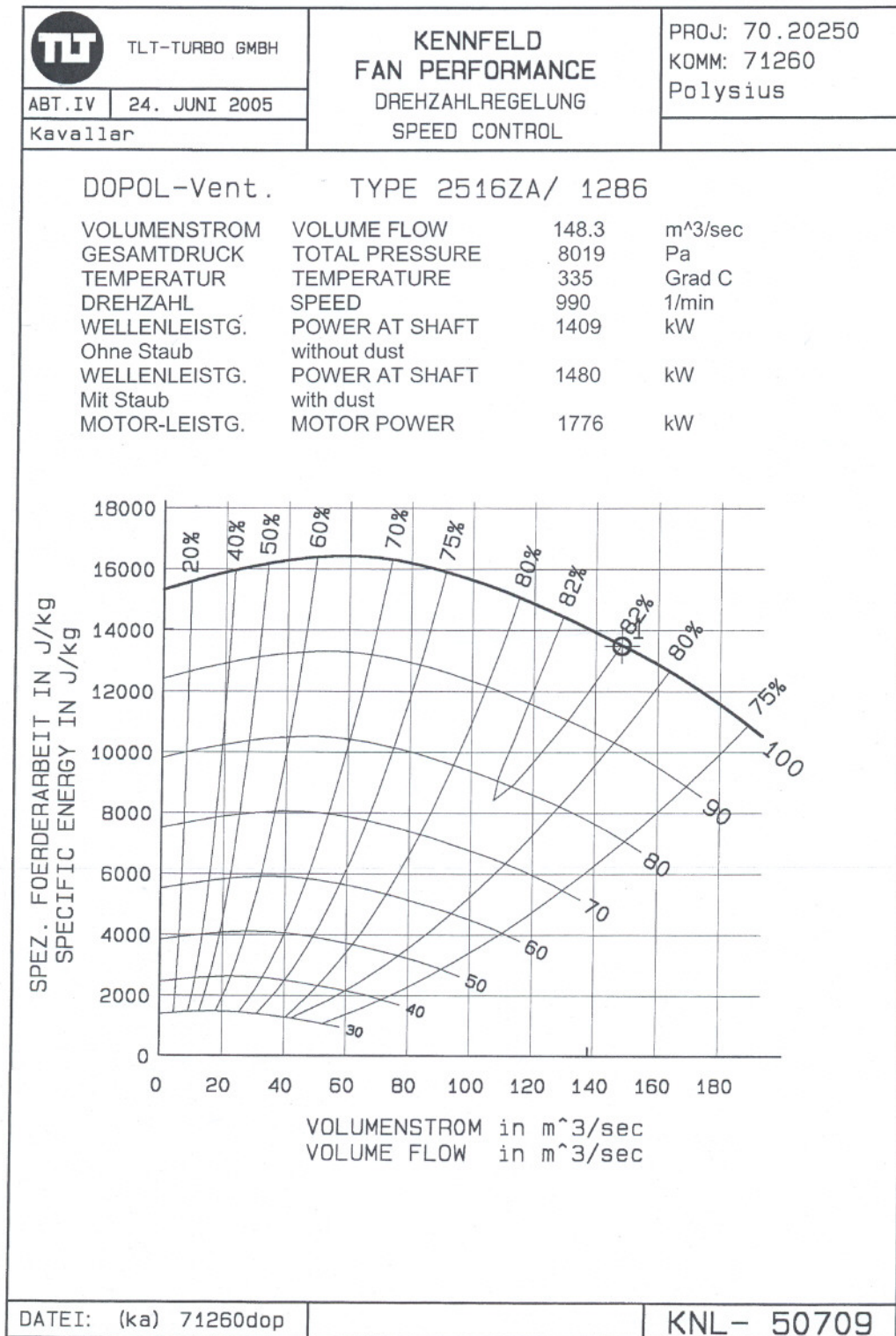
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2.1.2 Characteristic curve



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2.1.3 Table

TLT-Turbo GmbH		Table to the DOPOL-Vent. Type 2516ZA/ 1286				Com.-No. 71260 Cust. Polysius	
Dpt IV	24.06.2005					TAB-No. 50709	
Name : Kavallar		Control by Speed				Sheet 1 of 1	
Impeller diameter	3178 mm	Cross sec. suc. box		IN	5.45	m ²	
Recomm. motor power	1776 kW	Cross sec. housing		IN		m ²	
Motor speed	990 1/min	Cross sec. housing		OUT	2.76	m ²	
Barometric pressure	1007 mbar	Cross sec. diffusor		OUT	7.41	m ²	
Load	Design						
Point	1	2	3	4	5	6	
Mass flow kg/s	85.6						
Volume flow Sm ³ /h	220236						
Volume flow Am ³ /s	148.3						
Temperature ss deg C	335						
pl inquiry Pa	7630						
pl suc. box Pa	138						
pl shaft Pa	96						
pl diffuser Pa	155						
Total press. Pa	8019						
pa absolute Pa	93090						
Density (std) kg/m ³	1.400						
Density (act) kg/m ³	0.578						
Compress-fact. -	0.971						
Density (aver) kg/m ³	0.595						
Spec. energy J/kg	13477						
Efficiency %	82.0						
Power at shaft kw	1409						
Power with dust kw	1480	(Dust content 70 g/Sm ³)					
Speed rpm	990						
Temperature ds deg C	353						
Datei : ka71260dop							

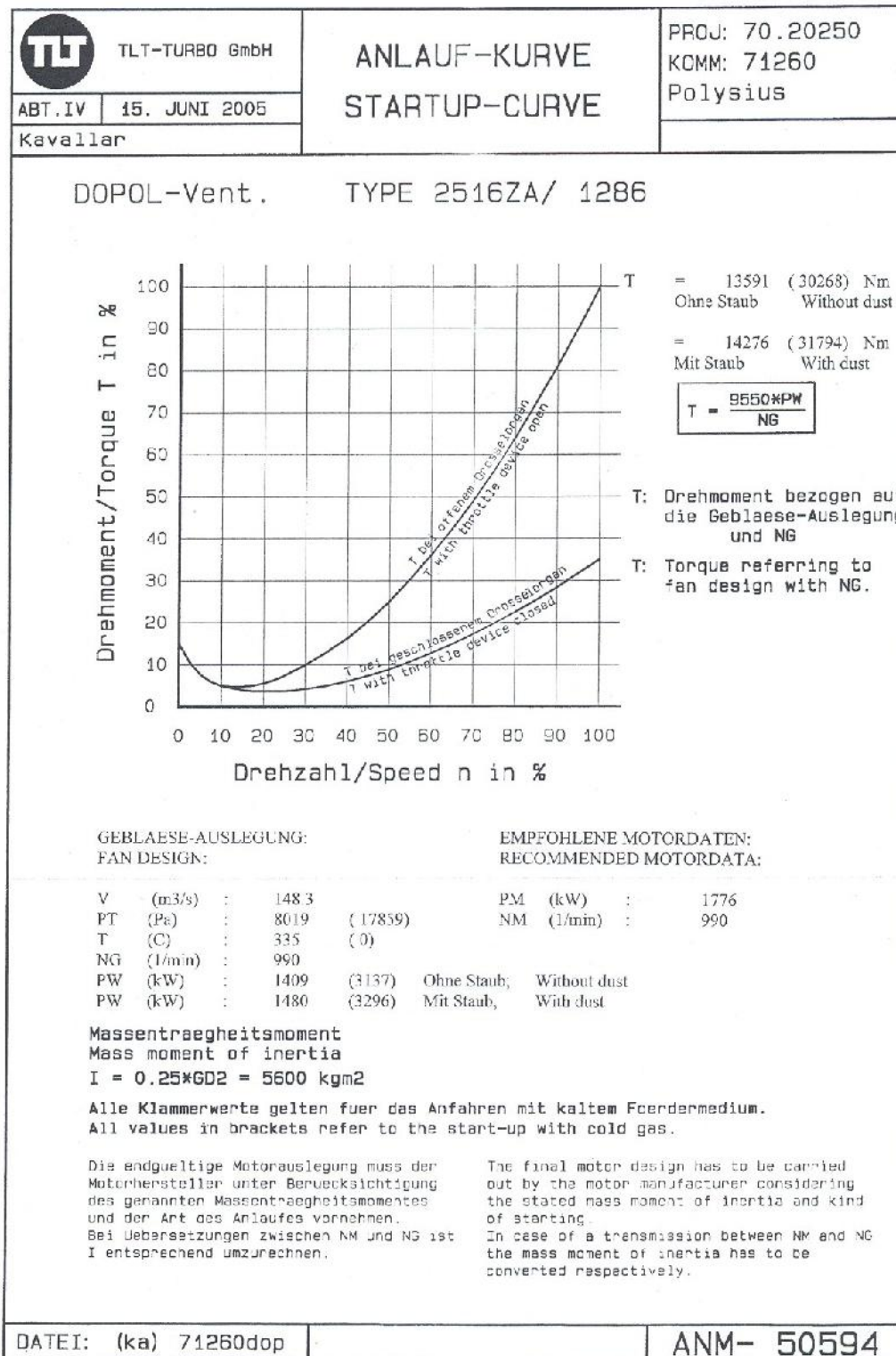
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2.1.4 Startup-curve



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2.1.5 Octave Band Analysis

TLT-Turbo GmbH		Octave Band Analysis to DOPOL-Vent. Type 2516ZA/ 1286		Project-no 70.20250 Cust. Polysius		
Dpt IV	24.06.2005			OAN-no 50710		
Name : Kavallar				Sheet 1 of 1		
Design data :						
Volume flow		148.30 m3/s	Diameter of impeller		3178 mm	
Temperature		335 °C	Tip speed		165 m/s	
Total pressure		8019 Pa	Number of blades		12 -	
Density suc. side		0.577 kg/m3	Blade passing frequency		198/396 Hz	
Speed		990 rpm				
Frequency Hz	Measuring surface sound press.level at a distance of 1m from the fan casing re 2·10E-5 N/m²		Sound power level in the gas flow suction side re 10E-12 W		Sound power level in the gas flow discharge side re 10E-12 W	
	dB	dB(A)	dB	dB(A)	dB	dB(A)
	31	101	62	119	80	120
63	101	75	125	99	126	100
125	100	84	127	111	128	112
250	104	95	132	123	133	124
500	101	98	130	127	131	128
1000	90	90	125	125	126	126
2000	80	81	119	120	120	121
4000	75	76	113	114	114	115
8000	72	70	104	103	105	104
Total level	109	100	136	130	137	131
Measuring area [Ls=10·lg(S/So)]			23 dB			
Tolerances :						
			Total level : ±4 dB Octave band : ±6 dB			
All data according to DIN 45635				Datei : ka71260dop		

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		dB	dB(A)	dB	dB(A)
31		101	62	119	80
63		101	75	125	99
125		100	84	127	111
250		104	95	132	123
500		101	98	130	127
1000		90	90	125	125
2000		80	81	119	120
4000		75	76	113	114
8000		72	70	104	103
Total level		109	100	136	130
Measuring area [Ls=10·lg(S/So)]				23 dB	
Tolerances :					
				Total level : ±4 dB Octave band : ±6 dB	
All data according to DIN 45635				Datei : ka71260dop	

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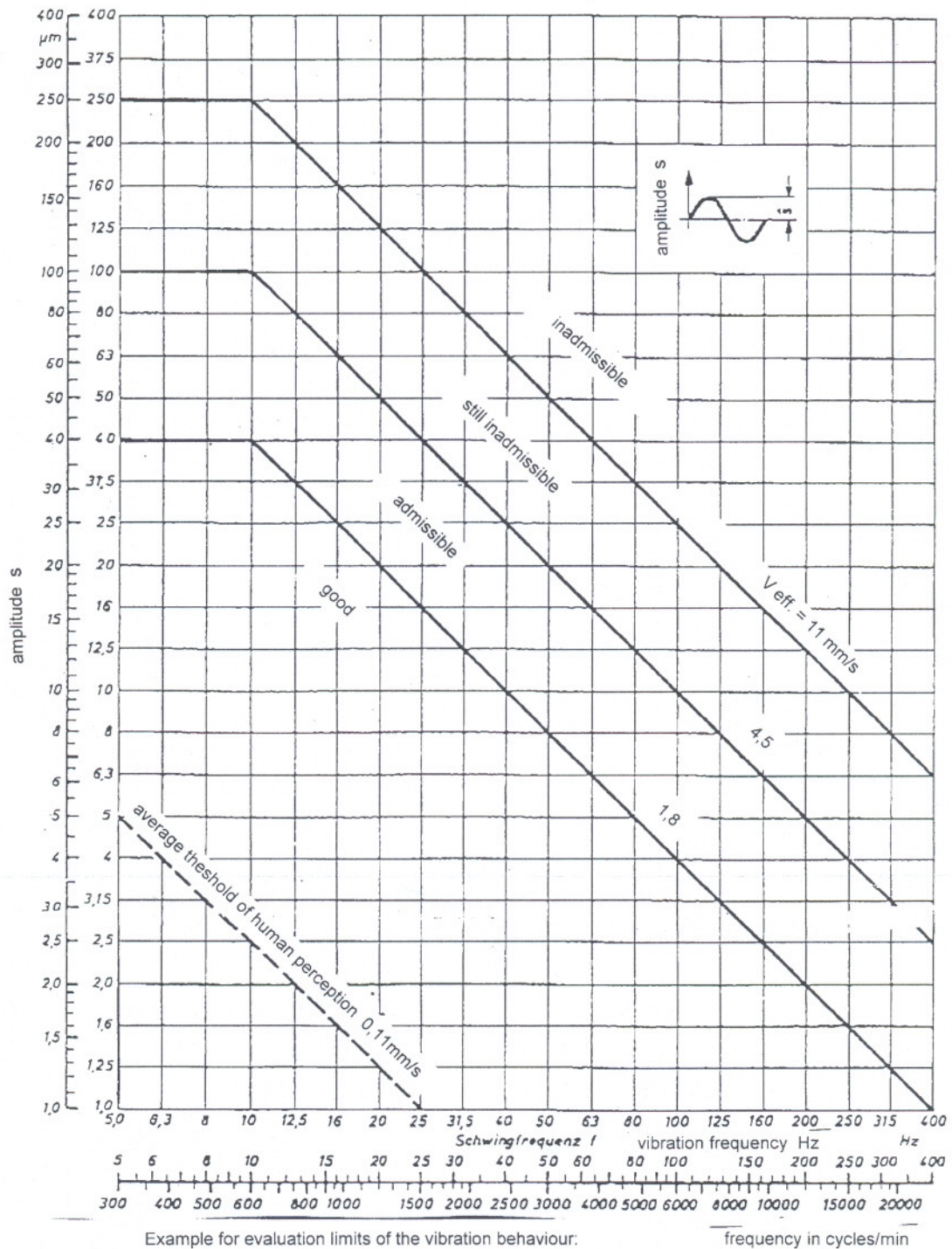
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Set point

VDI 2056



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9. Spare parts

Spare parts and replacement parts that cannot be delivered quickly should be kept in stock. Production down time is generally more expensive than the cost of the part in question.

We wish to point out explicitly that we do not test and issue spare parts or replacement parts not supplied by us. Any and all responsibility by the manufacturer is explicitly excluded for damage arising from the use of non-original parts and accessories.

Our Serviceadresse for Spare parts:

TLT-Turbo GmbH
Havensteinstr. 46
46045 Oberhausen
Tel.: 0049 (208) 8592 451 / Fax 0049 (208) 8592 250

Please mention the Ventilator-Data given below:

Kind of Fan: Dopol-Klin Fan
Type of fan: 2516 ZA/1286
Job No.: 71260-3
Dimension sheet H6002315
Factory No.: 723006978 / 723006979
Sense of rotation: R (VDMA) acc. VDMA 24165

Pos	Piece	Denomination	Weight	Wear
1	1	fan wheel Ø 3220 x 936	4300	X
2	1	shaft Ø 405 x 4300 long	3600	X
3	1	bearing housing type SNOE 230 BF	125	
4	1	bearing system type 22230EAB33J30	18	X
5	1	bearing housing type SNOE 230 BF	125	
6	1	bearing system type 22230EAB33J30	18	X
7	1	coupling type Rupex RWN 560	155	
8	Set	Elastic buffers	9	X
9	2	shaft seal type Ø 760 / Ø 245 x 10	7	X

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