

MT-Propeller Entwicklung GmbH
Flugplatzstr.1
94348 Atting
GERMANY

AIRPLANE FLIGHT MANUAL SUPPLEMENT

E-2708

**MT-PROPELLER MODEL
MTV-6-A/190-69**

ON

DR400 Series

**with Engine TAE-125-114 installed per
EASA STC 10014219**

Serial No.2699

Registration No. F-HTSC

This supplement must be attached to the Section 9 of the Pilot's Operating Handbook and approved Airplane Flight Manual upon installation of the MT-Propeller Model MTV-6-A/190-69. The information contained in this document supplements or supersedes the information of the Pilot's Operating Handbook and approved Airplane Flight Manual and appropriate Airplane Flight Manual Supplements only in those areas listed. For Limitations, Procedures, and Performance Data not contained in this supplement, consult the Pilot's Operating Handbook and approved Airplane Flight Manual and appropriate Airplane Flight Manual Supplements.

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SECTION 1 - GENERAL

The operator must thoroughly familiarize himself with the airplane and the contents of this supplement before initial operation. Thereafter this manual should be reviewed periodically to enable the operator to maintain the highest level of familiarity with the airplane, its controls and recommended operating procedures.

ENGINE(S)

Number of Engines: 1

Manufacturer: Technify Motors GmbH

Engine Models: TAE-125-114 installed per EASA STC 10014219

PROPELLER(S)

Number of Propellers: 1

Manufacturer: MT-Propeller Entwicklung GmbH, Germany

Propeller Model: MTV-6-A/190-69

Number of Blades: 3

Propeller Diameter: 190 cm (74.8 in)

Propeller Type: Constant-speed, hydraulically actuated

Blade Angles: Measured at the 71 cm (28 in) station:
Low Pitch: $+13,5^{\circ} \pm 0,2^{\circ}$
High Pitch: $+28^{\circ} \pm 1^{\circ}$

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Propeller Installation

SECTION 1 – GENERAL continued

NOISE LEVELS

European registered aircrafts

The noise levels will be listed in the database of EASA approved noise levels for light propeller driven airplanes, latest issue and have been verified and approved by EASA. The noise tests were conducted in accordance with ICAO Annex 16, Volume 1 (6th edition, July 2011), Chapter 10.

U.S. registered aircrafts

The corrected noise level of this aircraft with this propeller is equal to or better than production aircrafts. No determination has been made by the Federal Aviation Administration that the noise levels of this aircraft are or should be acceptable or unacceptable for operation at, into, or out of, any airport.

ELIGIBILITY AND COMPATIBILITY

The eligibility with this modification is given for approved airframe and gross weight configurations which do not affect the propeller/engine configuration.

SECTION 2 – LIMITATIONS

ENGINE(S)

Number of Engines: 1
Manufacturer: Technify Motors GmbH
Engine Models: TAE-125-114 installed per EASA STC 10014219

PROPELLER(S)

Number of Propellers: 1
Manufacturer: MT-Propeller Entwicklung GmbH, Germany
Propeller Model: MTV-6-A/190-69
Propeller Hub: MTV-6-A
Propeller Blade: 190-69
Number of Blades: 3
Propeller Diameter: 190 cm (74.8 inches)
Cut-off to 185 cm (72.8 inches) allowed for repair.
Blade Angles: Measured at the 71 cm (28 in) station:
Low Pitch: $+13,5^{\circ} \pm 0,2^{\circ}$
High Pitch: $+28^{\circ} \pm 1^{\circ}$
Propeller Speed Limits (Np): none

POWER PLANT LIMITATIONS No change

PLACARDS

Placards concerning other propellers are obsolete and must be removed or permanently covered.

SECTION 3 - EMERGENCY PROCEDURES

No Change.

SECTION 4 - NORMAL PROCEDURES

No change.

SECTION 5 - PERFORMANCE

When the new MTV-6-A/190-69 propeller is installed the following Data are applicable:

Take Off 1100kg:

SHORT FIELD TAKEOFF DISTANCE					
					TOGW= 1100 kg
Speed at Liftoff Vlof = 61 KIAS					2425 lb
Speed over 50 ft Obstacle V50 = 68 KIAS					
Flaps: Step 1 - Full Throttle, 155HP @ 2300 RPM (at ISA SL)					
Dry Paved RWY					
PRESS ALT [FT]	DISTANCE [m]	TEMPERATURE - °C			
		ISA	ISA+10	ISA+20	ISA+30
0	Gnd Roll	214	231	248	266
	50 ft	400	432	466	501
1000	Gnd Roll	226	244	262	282
	50 ft	423	457	492	530
2000	Gnd Roll	239	258	277	298
	50 ft	447	483	521	560
3000	Gnd Roll	253	273	294	315
	50 ft	473	511	551	593
4000	Gnd Roll	268	289	311	334
	50 ft	501	541	583	628
5000	Gnd Roll	284	306	329	354
	50 ft	531	573	618	665
6000	Gnd Roll	301	324	349	375
	50 ft	562	607	655	704
7000	Gnd Roll	322	347	373	401
	50 ft	603	651	702	756
8000	Gnd Roll	345	372	400	430
	50 ft	648	699	754	811

SECTION 5 – PERFORMANCE (Continued)

Take Off 1000kg:

SHORT FIELD TAKEOFF DISTANCE					
				TOGW= 1000 kg	
Speed at Liftoff Vlof = 59 KIAS				2205 lb	
Speed over 50 ft Obstacle V50 = 63 KIAS					
Flaps: Step 1 - Full Throttle, 155HP @ 2300 RPM (at ISA SL)					
Dry Paved RWY					
PRESS ALT [FT]	DISTANCE [m]	TEMPERATURE - °C			
		ISA	ISA+10	ISA+20	ISA+30
0	Gnd Roll	167	180	194	208
	50 ft	312	337	363	391
1000	Gnd Roll	177	190	205	220
	50 ft	330	356	384	413
2000	Gnd Roll	187	201	217	233
	50 ft	349	377	406	437
3000	Gnd Roll	198	213	229	246
	50 ft	370	399	430	463
4000	Gnd Roll	209	225	243	261
	50 ft	391	422	455	490
5000	Gnd Roll	222	239	257	276
	50 ft	414	447	482	519
6000	Gnd Roll	235	253	272	292
	50 ft	439	474	511	550
7000	Gnd Roll	251	271	292	313
	50 ft	471	508	548	590
8000	Gnd Roll	269	290	312	335
	50 ft	506	546	589	633

SECTION 5 – PERFORMANCE (Continued)

Climb 1100kg

TIME, FUEL, AND DISTANCE TO CLIMB, Enroute Climb						
Associated Conditions:		TOW= 1100 kg				
Standard Day(ISA)		2425 lb				
Power:	full throttle					
Flaps:	Clean					
Note:						
Distances shown are based on zero wind						
add appropriate 4l for startup and taxi						
Press.Alt. [FT]	OAT [°C]	Vy [KIAS]	ROC [FPM]	Time [MIN]	Distance [NAM]	Fuel used [l]
0	15	78	740	0,0	0,0	0,0
1000	13	78	730	1,4	1,8	0,8
2000	11	78	720	2,7	3,7	1,5
3000	9	78	710	4,1	5,6	2,3
4000	7	78	700	5,6	7,7	3,1
5000	5	78	690	7,0	9,8	3,9
6000	3	78	679	8,5	12,0	4,7
7000	1	78	668	9,9	14,3	5,6
8000	-1	78	656	11,5	16,8	6,5
9000	-3	78	606	13,0	19,4	7,3
10000	-5	75	545	14,8	21,5	8,3
11000	-7	75	484	16,7	24,7	9,3
12000	-9	75	423	18,9	28,4	10,4
13000	-11	72	362	21,5	31,4	11,6
14000	-13	72	300	24,5	36,4	13,0
15000	-15	72	238	28,2	42,7	14,7
16000	-17	72	175	33,1	50,8	16,7
17000	-19	72	112	40,0	62,5	19,4

RATE OF CLIMB

Associated Conditions:		MTOW = 1100 kg = 2425 lb				
Power:	full throttle					
Flaps:	Clean					
Notes:						
1. For operation in air colder than this table provides, use coldest data shown						
2. For operation in air warmer than this table provides, use extreme caution						
Press. Alt. [FT]	ISA OAT [° C]	Climb Speed [KIAS]	RATE OF CLIMB - Feet per Minute			
			Temperature - °C			
			ISA	ISA+10	ISA+20	ISA+30
0	15	78	740	701	662	623
1000	13	78	730	691	652	613
2000	11	78	720	681	641	602
3000	9	78	710	670	631	591
4000	7	78	700	660	620	580
5000	5	78	690	649	609	569
6000	3	78	679	638	597	557
7000	1	78	668	627	586	545
8000	-1	78	656	615	574	533
9000	-3	78	606	565	524	484
10000	-5	75	545	505	465	425
11000	-7	75	484	445	405	366
12000	-9	75	423	384	345	307
13000	-11	72	362	323	285	247
14000	-13	72	300	262	225	188
15000	-15	72	238	201	164	127
16000	-17	72	175	139	103	67
17000	-19	72	112	77	41	6

SECTION 5 – PERFORMANCE (Continued)

Climb 1000kg

TIME, FUEL, AND DISTANCE TO CLIMB, Enroute Climb						
Associated Conditions:		TOW= 1000 kg				
Standard Day (ISA)		2205 lb				
Power:	full throttle					
Flaps:	Clean					
Note:						
Distances shown are based on zero wind						
add appropriate 4I for startup and taxi						
Press. Alt. [FT]	OAT [°C]	Vy [KIAS]	ROC [FPM]	Time [MIN]	Distance [NAM]	Fuel used []
0	15	78	910	0,0	0,0	0,0
1000	13	78	901	1,1	1,5	0,6
2000	11	78	891	2,2	3,0	1,2
3000	9	78	882	3,3	4,5	1,9
4000	7	78	872	4,5	6,2	2,5
5000	5	78	862	5,6	7,9	3,2
6000	3	78	852	6,8	9,7	3,8
7000	1	78	841	8,0	11,5	4,5
8000	-1	78	830	9,2	13,5	5,2
9000	-3	78	776	10,4	15,5	5,9
10000	-5	75	711	11,8	17,1	6,6
11000	-7	75	646	13,3	19,6	7,4
12000	-9	75	581	14,9	22,3	8,2
13000	-11	72	515	16,7	24,5	9,1
14000	-13	72	449	18,8	27,9	10,0
15000	-15	72	382	21,2	32,0	11,1
16000	-17	72	316	24,1	37,0	12,3
17000	-19	72	249	27,6	43,1	13,7

RATE OF CLIMB

Associated Conditions:						
MTOW = 1000 kg = 2205 lb						
Power:	full throttle					
Flaps:	Clean					
Notes:						
1. For operation in air colder than this table provides, use coldest data shown						
2. For operation in air warmer than this table provides, use extreme caution						
Press. Alt. [FT]	ISA OAT [° C]	Climb Speed [KIAS]	RATE OF CLIMB - Feet per Minute			
			Temperature - °C			
			ISA	ISA+10	ISA+20	ISA+30
0	15	78	910	869	827	786
1000	13	78	901	859	818	776
2000	11	78	891	849	808	766
3000	9	78	882	840	798	756
4000	7	78	872	829	787	745
5000	5	78	862	819	777	734
6000	3	78	852	809	766	723
7000	1	78	841	798	755	712
8000	-1	78	830	787	743	700
9000	-3	78	776	733	691	648
10000	-5	75	711	669	627	586
11000	-7	75	646	605	564	523
12000	-9	75	581	540	500	459
13000	-11	72	515	475	435	396
14000	-13	72	449	410	371	332
15000	-15	72	382	344	306	268
16000	-17	72	316	278	240	203
17000	-19	72	249	212	175	138

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SECTION 5 – PERFORMANCE (Continued)

All other performance have been determined to be equal to or better than the baseline airplane. Therefore allother performance data from the baseline aircraft can be used for performance determination.

SECTION 6 - WEIGHT AND BALANCE AND EQUIPMENT LIST

The new MTV-6-A/190-69 has the same Weight and CG as the original MTV-6-A/187-129.

When installing the MTV-6-A/190-69 propeller, the equipment list must be amended to reflect addition of this propeller.

SECTION 7 - DESCRIPTION OF THE AIRCRAFT AND ITS SYSTEMS

Propeller:

The MTV-6-A/190-69 is a 3-blade hydraulically actuated, constant speed propeller with 190 cm (74.8 in) diameter. The propeller construction consists of natural composite blades mounted in a conventional aluminum hub. Stainless steel erosion sheaths protect the propeller blade leading edges.

The propeller is driven by the engine via a reduction gear box.. The propeller pitch and speed control is maintained by oil pressure via an ECU controlled Constant Speed Unit.

An internal spring moves the propeller blades towards the low pitch (high rpm), while the CSU controlled oil pressure, moves the propeller blades towards high pitch (low rpm). The CSU uses gearbox oil for propeller control.

CAUTION

Do not push aircraft on spinner.

SECTION 8 – HANDLING, SERVICE & MAINTENANCE

Propeller Service:

Since the MT-Propellers may also pick up loose pieces of rock and debris from the ramp and runway, the blades should be checked prior to each flight for damage. The daily preflight is performed by the pilot and includes examination of the propeller blades and spinners for visible damage, cracks, grease or oil leakage, blade shake and blade angle play. Blade shake up to 1/8 inches (3 mm) and a blade angle play of 2° is allowed.

Do not dress out prop nicks. Maintenance and repairs should only be accomplished by appropriately rated and qualified personnel in accordance with MT-Propeller's Instruction for Continued Airworthiness Doc. No. E-2710, latest revision.

The propellers may be cleaned with a mild solution of soap and water. Do not use solvents.

SECTION 9 – SUPPLEMENTS

This document shall be incorporated into the aircrafts AFM following the installation of the MTV-6-A/190-69 propeller.

SECTION 10 – OPERATIONAL TIPS

No change.