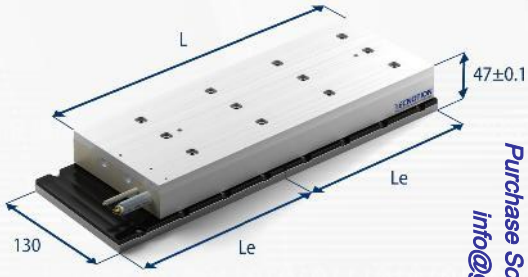
TECNOTION
THE LINEAR MOTOR COMPANY

TBW Series Iron Core

Tecnotion BV - Marketing & Sales Department - P.O.Box 23, 7600 AA Almelo - The Netherlands
Tel. +31 (0)546 536300 - Fax +31 (0)546 536380 - sales@tecnotion.com - www.tecnotion.com

	Parameter	Remarks	Symbol	Unit	TBW18		TBW30		TBW45	
Performance	Winding type				N	S	N	S	N	S
	Motortype, max voltage ph-ph				3-phase synchronous Iron core, 600V_{dc}					
	Ultimate Force @ 10°C/s	magnet @ 25°C	F_u	N	2700		4500		6750	
	Peak Force @ 6°C/s	magnet @ 25°C	F_p	N	2400		4000		6000	
	Continuous Force Watercooled	coils @ 100°C	F_{cw}	N	1200		2000		3000	
	Continuous Force Aircooled*	coils @ 100°C	F_c	N	1140		1900		2850	
	Maximum Speed**	@ 560 V	v_{max}	m/s	3	6	2.5	6	2.5	6
	Motor Force Constant	I < 0.6 Ip	K	N/A_{rms}	186	90	225	93	225	93
	Motor Constant	coils @ 25°C	S	N^2/W	2580		4300		6450	
Electrical	Ultimate Current	magnet @ 25°C	I_u	A_{rms}	19.6	41	27	65	41	98
	Peak Current	magnet @ 25°C	I_p	A_{rms}	15.0	31.1	20.7	50	31	75
	Continuous Current Watercooled	coils @ 100°C	I_{cw}	A_{rms}	6.5	13.4	8.9	21.5	13.4	32.3
	Back EMF Phase-Phase		B_{emf}	V_{rms} / m/s	152	76	183	76	183	76
	Resistance per Phase	coils @ 25°C ex. cable	R_f	Ω	4.4	1.0	3.9	0.66	2.6	0.44
	Induction per Phase	I < 0.6 Ip	L_f	mH	35	8	31	5	21	3
	Electrical Time Constant	coils @ 25°C	τ_e	ms	8		8		8	
Thermal	Maximum Continuous Power Loss	all coils	P_c	W	726		1209		1804	
	Thermal Resistance		R_{th}	°C/W	0.10		0.06		0.04	
	Thermal Time Constant	minimum	τ_{th}	s	87		87		87	
	Watercooling Flow	for ΔT=3K	Φw	l/min	3.1		5.2		7.8	
	Watercooling Pressure-drop	indication	ΔP_w	bar	1.0		1.5		2.5	
	Temperature Sensors				PTC 1kΩ and KTY21-6					
Mechanical	Coil Unit Weight	ex. cables	M	kg	7.3		12.3		18.2	
	Coil Unit Length	ex. cables	L	mm	344		580		852	
	Motor Attraction Force	rms	F_a	N	4900		8300		12450	
	Magnet Pitch NN		τ	mm	24		24		24	
	Cable Weight		m	gr/m	300		600		600	
	Cable Type (Power)	length 1 m	d	mm (AWG)	11.9 (14)				16.9 (10)	
	Cable Type (Sensor)	length 1 m	d	mm (AWG)	4.3 (26)					

All specifications ±10%



TBW18 on 2x192mm magnet plate shown

Water cooling

All TBW motors feature integrated cooling channels that allow for the easy setup of a liquid cooled system, at no additional cost.

Magnet plate dimensions

Le (mm)	192	288
M5 bolts	8	12
Mass (kg/m)	10.5	
Magnet plates can be butted together.		

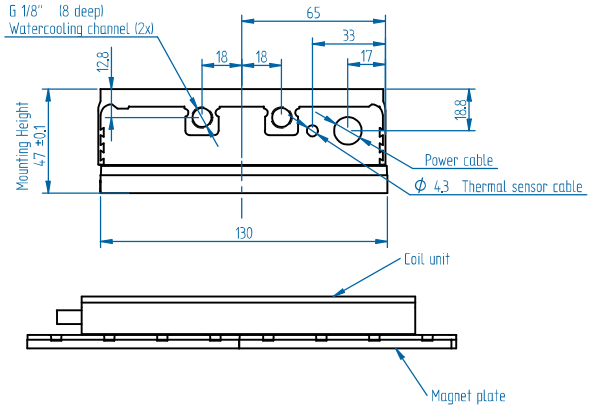
*Max. continuous force depends on the thermal resistance, cooling surface and ambient temperature of your application. Download our simulation tool to check the motor's thermal behavior in the application.

** Actual values depend on bus voltage. Please check the F/V diagram in our simulation tool.

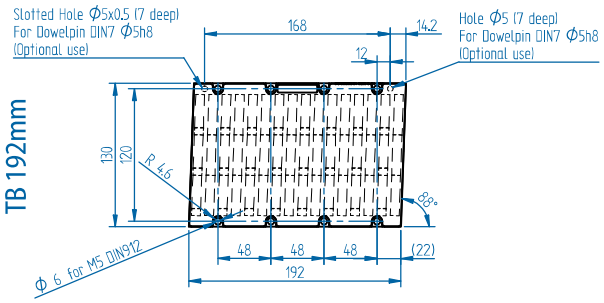
Purchase Source: GROUP SIX (USA & CAN) info@grp6.com 978-752-2255

Mounting instructions and flatness or parallelism requirements can be found in the Iron Core installation manual. CAD files and 3D models can be downloaded from our website.

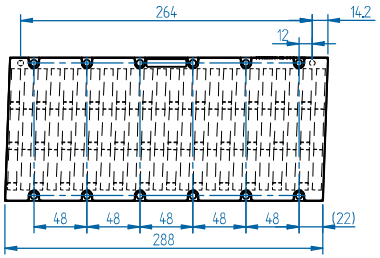
MAGNET PLATES



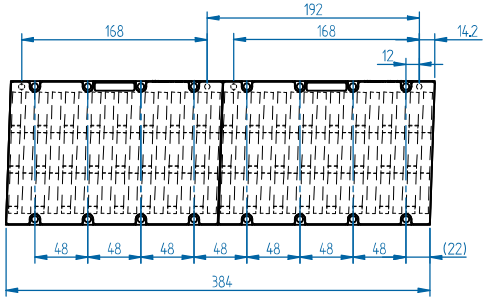
TB 192mm



TB 288mm

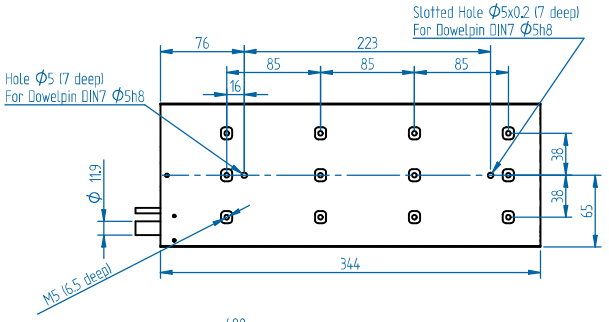


2x TB 192 mm

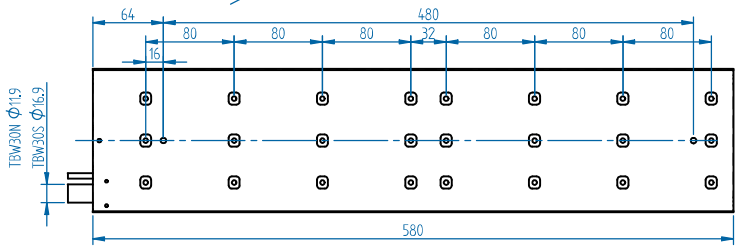


COIL UNITS

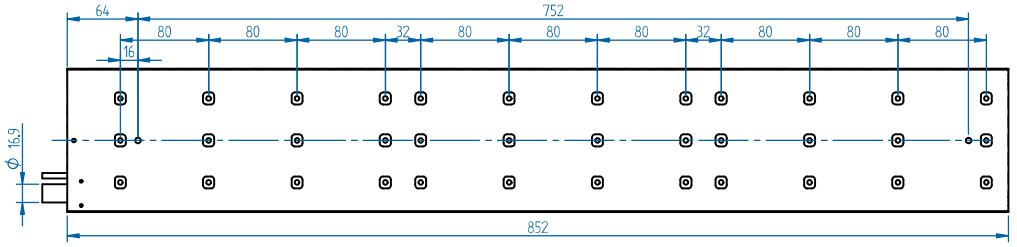
TBW18



TBW30



TBW45



Purchase Source: GROUP SIX (USA & CAN)
info@grp6.com 978-752-2255