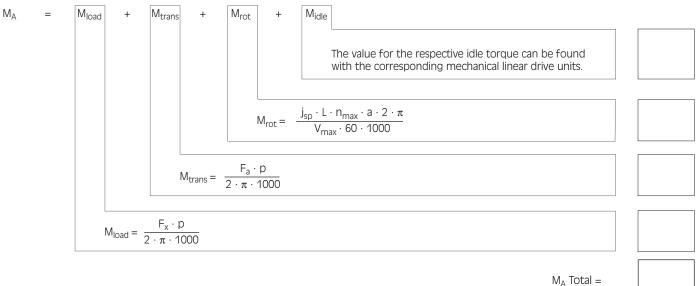
## **Drive selections** for linear drive units with screw drive

Feed force F <sub>x</sub> [N]	Acceleration force F <sub>a</sub> [N]	Power from torque and rotational speed [kW]	
$\mathbf{F}_{\mathbf{X}} = \mathbf{M} \cdot \mathbf{g} \cdot \boldsymbol{\mu}$	$F_a = m \cdot a$ In vertical applications, the mass acceleration a must be added to the acceleration due to gravity g [9.81 m/s <sup>2</sup> ].	$P = \frac{M_{A} \cdot n_{\max} \cdot 2 \cdot \pi}{60 \cdot 1000}$	
Definitions			
$M_A$ = Required drive moment [Nm]		m = Mass to be transported [kg]	
$M_{load}$ = Moment resulting from the various loads [Nm]		a = Acceleration [m/s <sup>2</sup> ]	
M <sub>idle</sub> = Idle torque [Nm]		p = Screw pitch [mm]	
M <sub>rot</sub> = Rotational acceleration moment [Nm]		P = Power [kW]	
M <sub>trans</sub> = Translational acceleration moment [Nm]		L = WIESEL® length [mm]	
$F_x$ = Feed force [N]		n <sub>max</sub> = Maximum rotational speed [rpm]	
$F_a = Acceleration force [N]$		$\mu$ = Friction factor	
g = Acceleration due to gravity [m/s <sup>2</sup> ]		$j_{sp}$ = Mass moment of inertia of the screw per meter [kgm <sup>2</sup> /m]	
V <sub>max</sub> = Maximum linear speed [m/s]			

## Calculating the drive moment $M_A$ [Nm]

The required drive moment is composed of the "load moment", the "acceleration moment" and the "idle torque".



## Friction factor $\boldsymbol{\mu}$

## Mass moment of inertia j<sub>sp</sub>

Values for $\mu$ lubricated	
0.05	
0.1	
Friction value of the external guide	
0.3	

Туре	P [mm]	j <sub>sp</sub> [kgm²/m]
WIESEL <i>POWERLine®</i> WM60 WIESEL <i>DYNALine®</i> WV60 WIESEL <i>VARIOLine®</i> WZ60 WIESEL® W02	5, 20, 50	8.8 · 10 <sup>-5</sup>
WIESEL <i>POWERLine®</i> WM80 WIESEL <i>DYNALine®</i> WV80 WIESEL <i>VARIOLine®</i> WZ80 WIESEL <i>FORCELine®</i> MLSM60 KGT	5, 10, 20, 50	2.25 · 10 <sup>-4</sup>
WIESEL POWERLine® WM120 WIESEL DYNALine® WV120	5 10, 20, 40	6.41 · 10 <sup>-4</sup> 6.28 · 10 <sup>-4</sup>
WIESEL POWERLine® W00/WM40	5	1.13 · 10 <sup>-5</sup>