

切削液收集装置 / Cutting oil collecting unit

型号

HK-400A



HK-400A 用于收集机床溢出的少量切削液。

/ The HK-400A collects small amounts of cutting oil that spill from machine tools.

* 同时兼容油性和水溶性切削液

/ Compatible with oil-based cutting oils and water-soluble cutting oils

● 用磁铁安装于设备的侧面。

/ Install on the side of machines with a magnet.

● 无需空气管道。

/ No air piping required.

● 替代真空喷射器，更省能源。

/ Save energy by switching from vacuum ejectors.

● 配有过滤器，可防止吸入铝屑。

/ Comes with a strainer to prevent suction of cutting chips.

● 可以进行气液混合吸引，

即使空转也不用担心马达烧毁。

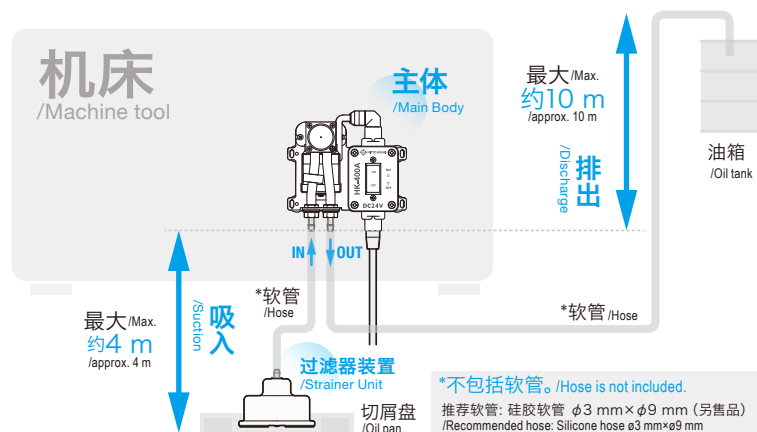
/ Capable of suction of gas & liquid mixture, no worry of motor burns even when idling.

规格 / Specifications

额定电压 / Rated Voltage	24 V DC	
最大电流 (*1、作业压力范围、流体： 水 25℃) / Maximum current (*1, Operating pressure range, Fluid: Water 25℃)	450 mA	
流量 (*1、*3、*4、开放式排液 (0 kPa)、流体： 水 25℃) / Flow rate (*1、*3、*4, open discharge (0 kPa), Fluid: Water 25℃)	400 mL/min 0.0141 cfm	
作业压力范围 (*1、*2、流体：水 25℃) / Operating pressure range (*1、*2, Fluid: Water 25℃)	0 ~ 100 kPa (0 ~ 1 kgf/cm ²) 0 ~ 1 bar 0 ~ 14.2 psig	
自吸力 (*1、*3、流体：空气 20℃) / Self-priming pressure (*1、*3, Fluid: Air 20℃)	40 kPa 0.4 bar 5.69 psig	
额定时间 (流体：水 25℃) / Duty cycle (Fluid: Water 25℃)	连续 / Continuous	
耐用时间 (*5) / Rated performance (*5)	6000 小时 (MTTF) / 6000 hours (MTTF)	
断路器额定电流 / Circuit breaker rated current	1 A	
电源箱防尘防水防护等级 / Circuit Breaker Box protection grade	IP65	
适用流体 / Applicable fluid	切削液 (水溶性和非水溶性) / Cutting oil (water-soluble and water-insoluble)	
推荐流体粘度 (*4、*6) / Recommended fluid viscosity (*4、*6)	30 mPa·s or less	
使用场所 / Place of use	室内 / Indoors	
外观尺寸 / External dimensions	119 mm (L) × 118 mm (W) × 81 mm (H) 4-11/16" (L) x 4-41/64" (W) x 3-3/16"	
重量 / Weight	主体 (泵、电源盒) / Main Body (Pump Unit, Circuit Breaker Box)	0.6 kg 1.32 Lbs
	电源线 / Power Cable	0.3 kg 0.66 Lbs
	过滤装置 / Strainer Unit	0.3 kg 0.66 Lbs



安装示例 / Installation examples



*1: 该条件主要适用于额定电压、冷却装置及初始运行。/ Conditions are for rated voltage, cool unit, and initial operation.

*2: 本产品不可从压力关闭状态重启或于工作压力范围外使用。/ The product cannot be restarted from the closed pressure state or used beyond the working pressure range.

*3: 流体温度下降后，止回阀变硬，流量和自吸力随之降低。/ When the fluid reaches a low temperature, the check valve hardens and the flow rate and self-suction power will decrease.

*4: 收集高粘度切削液 (2 mPa·s 或以上) 时，流量降低。尤其是在使用非水溶性切削液时，流体粘度会随温度变化剧烈波动，因此请检查泵是否可以在实际操作条件下使用。/ When highly viscous cutting oil (2 mPa·s or more) is collected, the flow rate decreases. Especially when using with water-insoluble cutting oil, the fluid viscosity fluctuates significantly according to temperature change, so check whether the pump can be used under actual operating conditions.

*5: 耐用时间 (MTTF: 平均失效前时间) 是指在额定电压、开放式排液 (0 kPa) 和 25℃ 水温下，流量降低到规定值的 80% (320 mL/min) 或以下时已累积作业时间的平均值。耐用时间因作业条件 (作业压力、作业流体温度、作业流体粘度、作业环境等) 而异。/ Rated performance (MTTF: Mean Time to Failure) is the mean value of the accumulated operating time at the rated voltage, open discharge (0 kPa) and water temperature of 25℃ and when the flow rate becomes 80% (320 mL/min) or less of the specified value.

*6: 动粘度 [mm²/s] 到粘度 [mPa·s] 的换算请参照以下公式。

粘度 [mPa·s] = 动粘度 [mm²/s] × 密度 [g/cm³] (动粘度 : 1 mm²/s = 1 cSt 粘度 : 1 mPa·s = 1 cP)

/The rated performance varies depending on the operating conditions (operating pressure, operating fluid viscosity, operating environment, etc.).

Refer to the following formula for conversion from Kinematic viscosity [mm²/s] to viscosity [mPa·s].

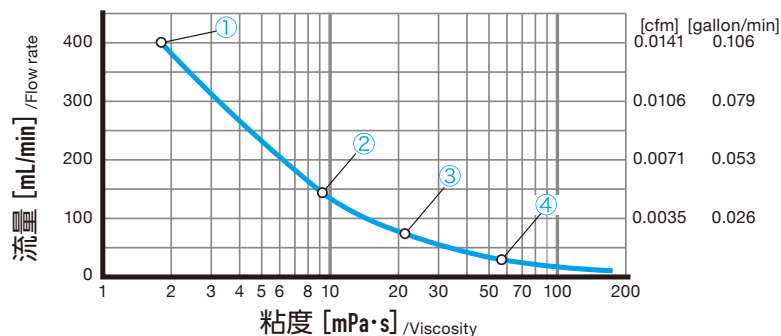
Viscosity [mPa·s] = Kinematic viscosity [mm²/s] × Density [g/cm³]

(Kinematic viscosity: 1 mm²/s = 1 cSt Viscosity: 1 mPa·s = 1 cP)

* 请参考以下特性图和换算公式, 确认产品是否适用。/ *Refer to the characteristic diagram and conversion formula below and consider whether the product can be used or not.

/Viscosity vs. Flow Rate Characteristics

· 配管条件... 硅胶软管内径/Silicone hose Inner diameter
/Piping conditions : $\phi 3$ mm, 长度/length: 4 m
无扬程负荷/No lifting load



	液体种类 Liquid type	动粘度 Kinematic viscosity [cSt] [mm ² /s] (40°C)	粘度 Viscosity [mPa·s] (24±1°C)	流量 Flow rate [mL/min] (24±1°C)
①	水 /Water	—	1.9	400
②	样品A /Sample A	7.0	9.4	145
③	样品B /Sample B	15.0	21.9	74
④	样品C /Sample C	32.5	56.8	27

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- 使用爱宕株式会社的数字粘度计VISCO低粘度样品适配器 (ULA) 的测量值。
- 动粘度到粘度的换算请参照上述公式。有关所用切削油动粘度和密度的相关信息，请联系切削油制造商。
- 特性图仅供参考，非保证值。
- 基于不同的作业条件（作业环境、液体类型、管道材料），可能无法达到上述性能。
- 尤其是使用不溶性切削油时，流体粘度会随温度变化剧烈波动，
- 因此请于实际作业条件下确认泵是否可用。
- Viscosity is measured with the digital viscositymeter VISCO Low Viscosity Sample Adapter (ULA) manufactured by Atago Co., Ltd.
- Refer to the above formula for conversion from kinematic viscosity to viscosity. For the kinematic viscosity and density of the cutting oil used, contact the cutting oil manufacturer.
- Characteristic diagrams are for reference only and are not guaranteed values.
- The above performance may not be attained depending on the operating conditions (operating environment, liquid type, piping material). Especially when using water-insoluble cutting oil, the fluid viscosity fluctuates significantly depending on the

选购件 /Optional accessory

部件名称/Part Name	部件编号/Part No.		部件名称/Part Name	部件编号/Part No.	
泵单元/Pump Unit	LB09133		串联过滤器/Inline Filter	LB09137	
过滤单元/Filter Unit	LB09141		穿孔金属板/Filter Cover [部件构成] 穿孔金属板、螺丝 /[Components] Filter Cover, Screw	LB09139	
电源线 (5 m) /Power Cable (5 m)	LB09140		断路器盒 /Circuit Breaker Box	LB09608	
过滤器装置/Strainer Unit [部件构成] 过滤器、过滤单元、 金属网、穿孔金属板、螺丝 /[Components]Strainer, Filter Unit, Screw, Wire Mesh, Filter Cover	LB09134		金属网/Wire Mesh	LB09138	
连接器盖/Connector Cover	LB09994				

部件名称/Part Name	部件编号/Part No.	
硅胶软管 /Silicone Hose (ø3×9×4000 mm)	LB09135	



主体/Main Body ASSY

