

## T20 | P/N: 81401258

### Summary

The Magswitch T20 is our smallest, most compact T-series magnet. The T20 features high precision, repeatable mounting features for material handling of small parts. Additional custom pole shoe geometry allows for extreme flexibility in applications. The added prox cap assembly provides a plug and play solution for detection of the magnet ON and OFF states while reducing your installation time.

#### WARNING!

**Do Not Operate Unless In Contact With Ferrous Target**

### Specifications

<b>Maximum Breakaway Force</b> <sup>1,2,4</sup>	75	lbs	34	kg
<b>Maximum Shear</b> <sup>1,2,4</sup>	22	lbs	10	kg
<b>Minimum Thickness for De-Stack</b> <sup>3</sup>	0.118	in	3.0	mm
<b>Overall Height (Max)</b>	2.1	in	54.0	mm
<b>Overall Length</b>	1.4	in	36.0	mm
<b>Overall Width</b>	1.3	in	32.5	mm
<b>Net Weight</b>	0.42	lbs	0.19	kg
<b>Magnetic Pole Footprint</b>	1.4x0.8	in	36.0x21.0	mm
<b>Max Allowable Pressure</b>	90	psi	0.62	MPa



<b>Material Thickness</b> - mm (in)	0.5 (0.020)	0.6 (0.024)	0.7 (0.028)	0.8 (0.031)	1 (0.039)	1.5 (0.059)	2 (0.079)	3 (0.118)	4 (0.157)
<b>Maximum Force</b> <sup>5</sup> - kg (lbs)	4.1 (9.0)	5.1 (11.2)	6.5 (14.3)	8.2 (18.1)	13.2 (29.1)	17.9 (39.5)	25.6 (56.4)	34.2 (75.4)	34.2 (75.5)
<b>Required Air Pressure</b> - bar (psi)	3.0 (44)	3.0 (44)	2.8 (41)	2.8 (41)	2.6 (38)	2.4 (35)	2.2 (32)	2.2 (32)	2.2 (32)

<sup>1</sup> Determined in laboratory environment on 2" thick SAE1018 Steel with surface roughness 63 micro inches. Many factors contribute to the actual breakaway force and safe working load in each application. Consult a Magswitch Applications Engineer and test the Magswitch in each application before deployment.

<sup>2</sup> All data applies to standard tool.

<sup>3</sup> Determined with SAE1018 Steel L=200mm W=200mm.

<sup>4</sup> Values may vary by +/- 5%.

<sup>5</sup> Maximum forces listed above are not safe lifting forces. Designer must take into account safety factor when specifying tool. Magswitch recommends SWL = 5:1 for most applications.

$$SWL \text{ (Safe Working Load)} = \frac{\text{Maximum Force}^5}{\text{Safety Factor} (\geq 5)}$$



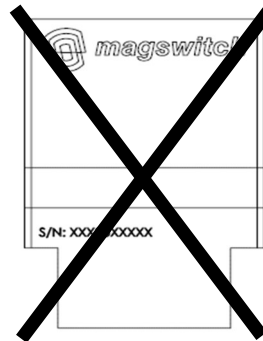
# MAGSWITCH T20 w/ SENSOR KIT, RESISTANT SENSORS, AND CABLE

P/N: 8800915  
+ 1(303) 468.0662  
magswitch.com

## Pole shoes required for operation

Standard kits available:

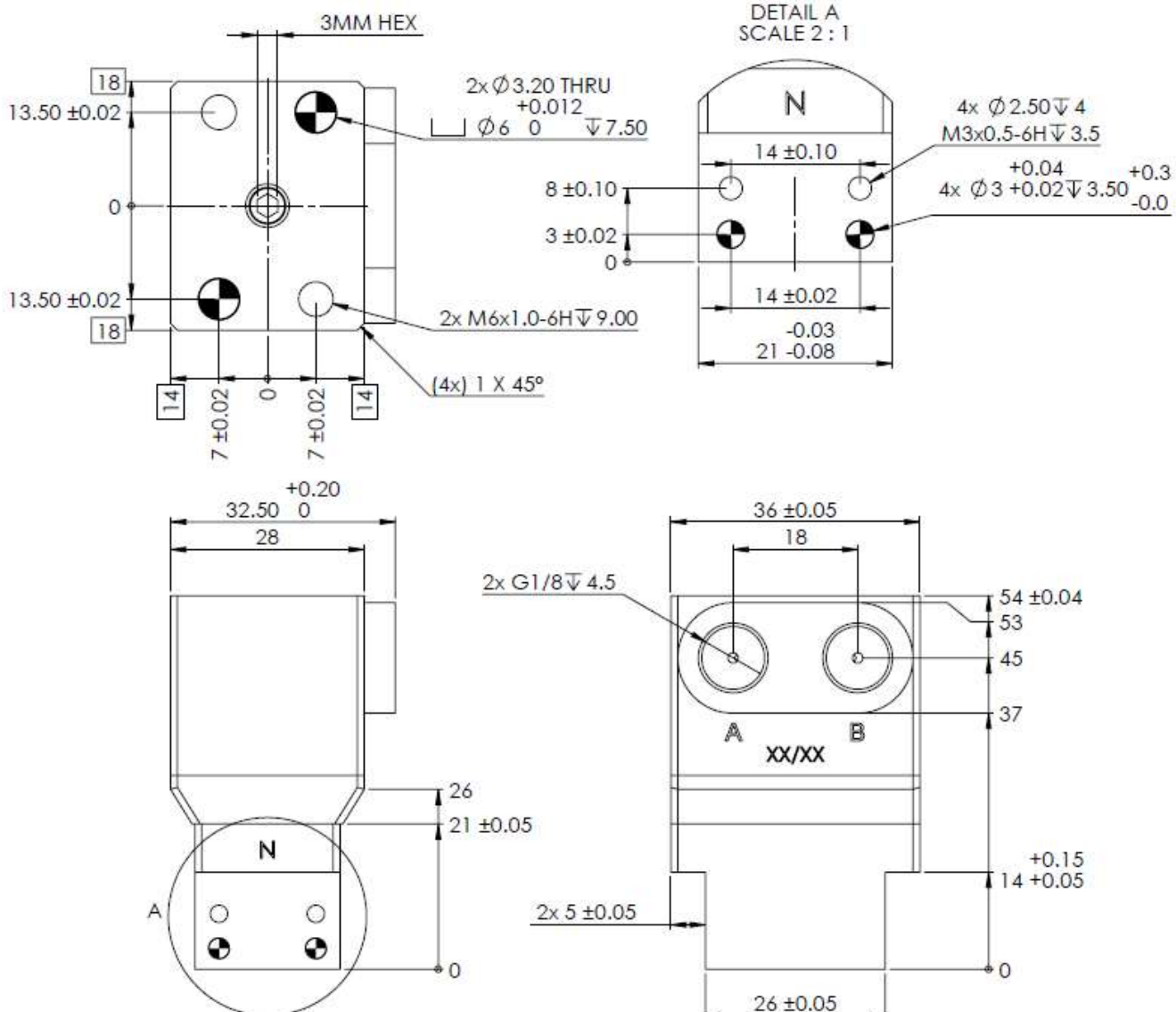
Flat Pole Shoe Kit	8800840
Sensor Cap Kit	8800864
Pin Clamp Pole Shoe Kit	8800906
135Deg V Pole Shoe Kit	88001122
Thin Target Pole Shoe Kit	8800878
Extended Thin Target Pole Shoe Kit	8800874
Armor	88001444
Armor Ready Flat Pole Shoe Kit	88001445
Armor Ready 135Deg V Pole Shoe Kit	88001446
Armor Ready 155Deg V Pole Shoe Kit	88001447



NO POLE SHOES



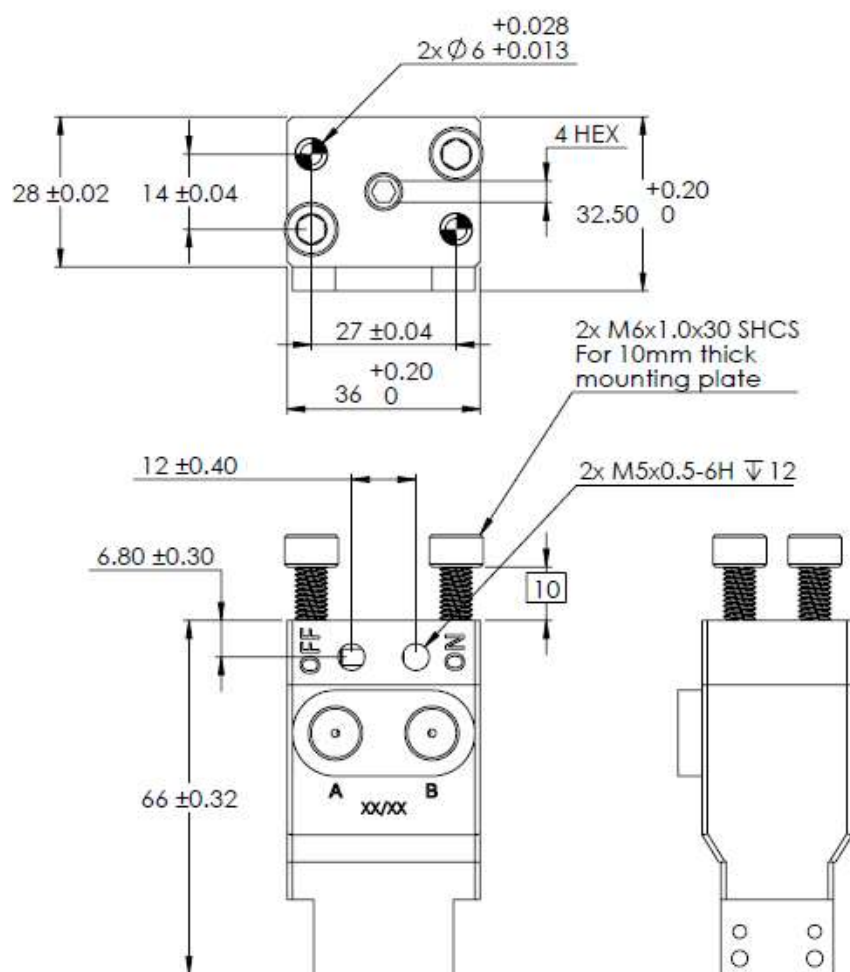
POLE SHOES ATTACHED  
(SOLD SEPARATELY)



## T20 Proximity Cap Kit | P/N: 8800864

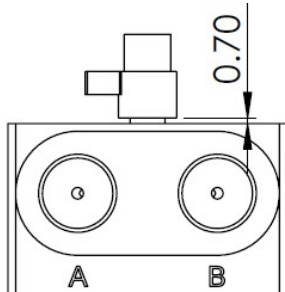
### Specifications

Proximity Sensor Bore Type	M5x0.5 threaded barrel	
Recommended Proximity Sensor Sensing Distance	0.5mm - 3.0mm	
Top Surface Mounting Pattern	See dowel and fastener pattern below	
Net Weight	0.11 lbs	0.05 kg



## Installation Instructions

- Actuate the T20 tool to the OFF state.
- Remove the T20 tool from preexisting mounting surfaces as required to expose the top surface of the tool. Ensure dowel and fastener holes are clean. Confirm the top surface of the tool is flat and smooth.
- Insert the sensor flag into the hexagonal bore with the steel tab pointing to the left or port A when the tool is viewed from the front. This is a transitional fit and the hexagonal features may require light pressure and wiggling to ensure they are mated.
  - There will be a gap of approximately 0.7mm between the circular bottom surface of the flag and the top face of the T20 actuator.



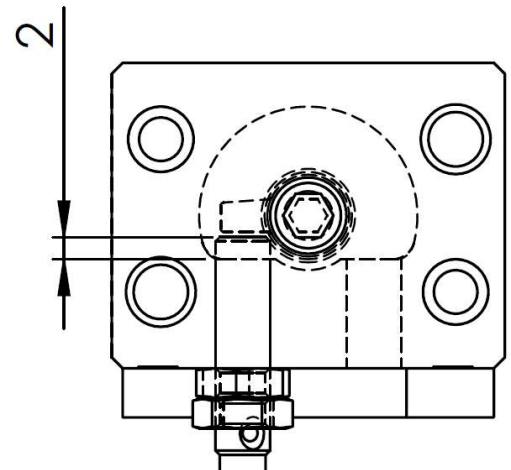
- Orient the aluminum proximity cap with the "OFF" and "ON" engravings and proximity sensor bores on the same face as pneumatic ports "A" and "B." Slide the aluminum proximity cap over the proximity flag and push the preinstalled dowels into the top surface of the T20. This is a transitional fit and may require firm pressure and wiggling to fully seat the cap. Ensure there is no gap between the proximity cap and the top surface of the T20 tool.
- Thread the "OFF" state M5 proximity sensor into the "OFF" port until resistance is felt. Unthread the sensor ¼ turn and test its function, then tighten the locking nut to secure it at the proper depth.
- Actuate the T20 tool ON so the flag is now in front of the "ON" port.
- Thread the "ON" state M5 proximity sensor into the "ON" port until resistance is felt. Unthread the sensor ¼ turn and test its function, then tighten the locking nut to secure it at the proper depth.
- **WARNING: If the sensor is set too deep, it can rub or be impacted by the rotating flag and damage the T20. If the sensor is set too shallow, it may not register the presence of the flag.**
- For mounting the T20 using the top dowel holes, use the provided M6x1.0x30, 18-8 stainless steel socket head cap screws with a mounting plate that is 10mm thick. If other thicknesses of mounting plate are used, the length of these fasteners should be 20mm + the thickness of the mounting plate. Install your M6 mounting dowels into the top dowel holes and thread the longer fasteners through the mounting plate and proximity cap into the threaded bores of the T20 underneath.
- Torque all screws to 5Nm. There should be no visible gaps between the tool, proximity cap, or mounting surfaces.

2x M6x1.0x30 SHCS  
18-8 Stainless Steel  
Replace with longer  
screws if mounting  
plate is thicker than  
10mm

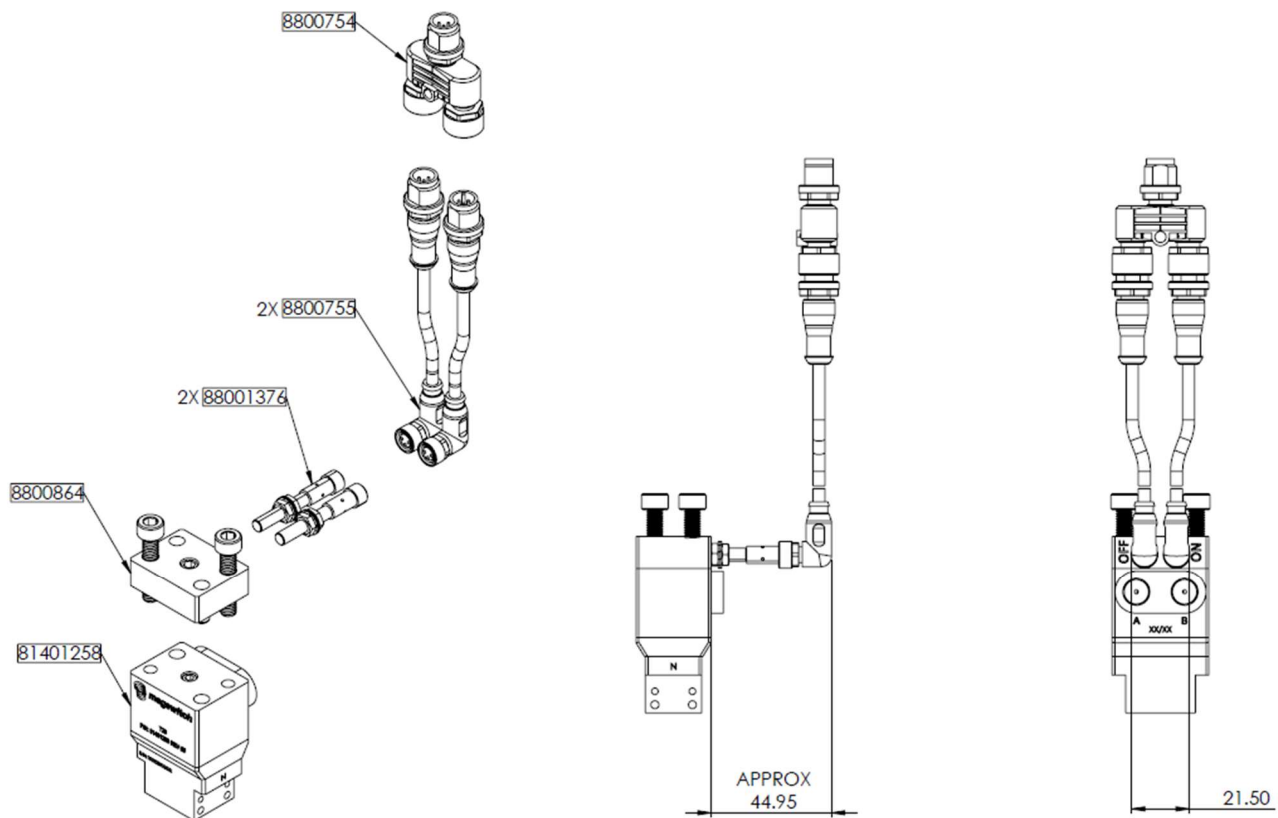
Aluminum cap with  
captive PTFE bushing  
and pressed dowels

Sensor flag rotates  
180° clockwise when  
tool is turned ON

Magswitch T20  
81401258



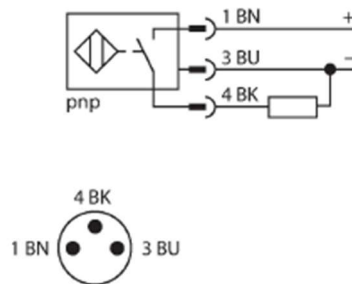
## T20 Sensor and Cable Kit | P/N: 8800915



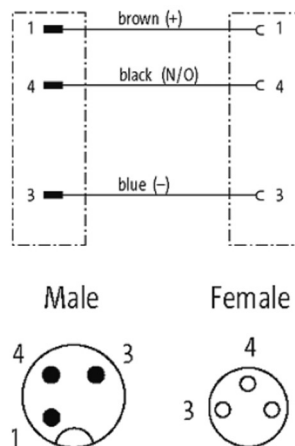
81401258	T20
8800864	T20 Prox Cap Kit
88001376	SENSOR, INDUCTIVE, M5X0.5 BARREL, M8X1 CONNECTOR
8800755	CABLE, M12 MALE STRAIGHT, M8 FEMALE 90DEG
8800754	COUPLER, T SHAPE, M12 MALE, M12 FEMALE

## Wiring Diagrams

### 88001376 - SENSOR, INDUCTIVE, M5X0.5 BARREL, M8X1 CONNECTOR



### 8800755 - CABLE, M12 MALE STRAIGHT, M8 FEMALE 90DEG



### 8800754 - COUPLER, T SHAPE, M12 MALE, M12 FEMALE

