

## MS SERIES

### MS 90



Ordering-Example:

Special Sizes Available On Request.

#### ACTIVE SAFETY



OPAS



SKUDO

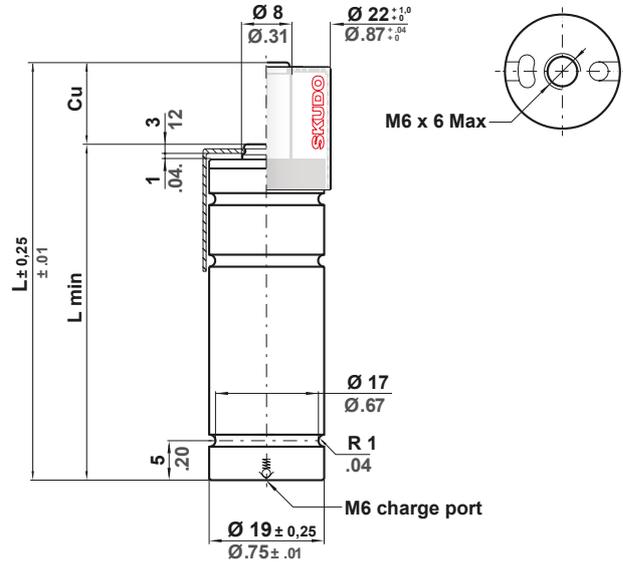
The new code will be supplied only when the old will be out of stock

\* F<sub>1i</sub> =

Isothermal end force at 100% Cu

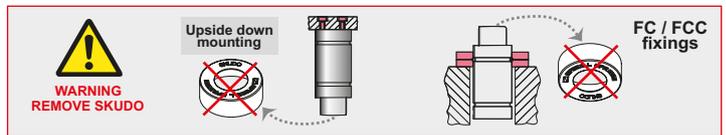
\*\* F<sub>1p</sub> =

Polytropic end force at 100% Cu



Force color code	P		F <sub>0</sub> Initial force ± 5% +20°C +68°F	
	bar	psi	daN	lb
OR	10	145	5	11
PR	20	290	10	22
GR	60	870	30	67
BU	100	1450	50	112
RD	140	2030	70	157
YW	180	2610	90	202
BK	10-180	145-2610	5-90	11-202

Pressure to be specified when ordering.



N2	0 - 80 °C 32 - 176 °F	$\Delta P$ ± 0,33 %/°C	<b>P max</b> 180 bar 2610 psi	<b>P min</b> 10 bar 145 psi	<b>S</b> 0.50 cm <sup>2</sup> 0.078 in <sup>2</sup>	<b>SPM</b> ~ 100 - 150 (at 20°C)	<b>Max Speed</b> 1.8 m/s 70.8 in/s	<b>Maintenance kit</b> Disposable
----	--------------------------	---------------------------	-------------------------------------	-----------------------------------	---	--	--	--------------------------------------

CODE PHASING OUT from 05/2019	NEW	Cu		L		L min		F <sub>1i</sub> End force *		F <sub>1p</sub> End force **		V <sub>0</sub>		~Kg	~lb	PED 2014/68/EU
		mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	cm <sup>3</sup>	in <sup>3</sup>			
MS90 - 007 - A - ...	MS90 - 007 - B - ...	7	0.28	62	2.44	55	2.17	1,19 x F <sub>0</sub>	1,35 x F <sub>0</sub>	2,6	0.16	0,07	0.15	✓		
MS90 - 010 - A - ...	MS90 - 010 - B - ...	9,7	0.38	67,4	2.65	57,7	2.27	1,22 x F <sub>0</sub>	1,40 x F <sub>0</sub>	3,1	0.19	0,08	0.18	✓		
MS90 - 012 - A - ...	MS90 - 012 - B - ...	12	0.47	72	2.83	60	2.36	1,24 x F <sub>0</sub>	1,44 x F <sub>0</sub>	3,5	0.21	0,08	0.18	✓		
MS90 - 022 - A - ...	MS90 - 022 - B - ...	22	0.87	92	3.62	70	2.76	1,30 x F <sub>0</sub>	1,52 x F <sub>0</sub>	5,5	0.34	0,09	0.20	✓		
MS90 - 035 - A - ...	MS90 - 035 - B - ...	35,1	1.38	118,2	4.65	83,1	3.27	1,33 x F <sub>0</sub>	1,57 x F <sub>0</sub>	8,1	0.49	0,11	0.24	✓		
MS90 - 047 - A - ...	MS90 - 047 - B - ...	47	1.85	142	5.59	95	3.74	1,34 x F <sub>0</sub>	1,60 x F <sub>0</sub>	10,4	0.63	0,12	0.26	✓		
MS90 - 060 - A - ...	MS90 - 060 - B - ...	60,5	2.38	172	6.77	111,5	4.39	1,35 x F <sub>0</sub>	1,61 x F <sub>0</sub>	13,4	0.82	0,14	0.31	✓		
MS90 - 077 - A - ...	MS90 - 077 - B - ...	77	3.03	205	8.07	128	5.04	1,36 x F <sub>0</sub>	1,62 x F <sub>0</sub>	16,6	1.01	0,15	0.33	✓		
MS90 - 097 - A - ...	MS90 - 097 - B - ...	97	3.82	245	9.65	148	5.83	1,37 x F <sub>0</sub>	1,64 x F <sub>0</sub>	20,6	1.26	0,17	0.37	✓		
MS90 - 122 - A - ...	MS90 - 122 - B - ...	122	4.80	295	11.61	173	6.81	1,37 x F <sub>0</sub>	1,65 x F <sub>0</sub>	25,5	1.56	0,20	0.44	✓		