

# Form Tools

for cartridge cavities

## 1 Description

To assist customers who wish to machine their own cartridge cavities, Bucher Hydraulics Inc. offers form tools for sale.

Our selling prices roughly are the same as the cost to us.



**IMPORTANT!:**

A form-tool set normally comprises of 1 form borer and 1 form reamer:

1 x HSS form borer

1 x HSS form reamer or 1 x HM form reamer (carbide)

### 1.1 Usage guide (values based on experience)

Machinability			Material	Cutting speed [m/min]			Coolant / Lubricant	
Good	Fair	Poor		Form borer HSS	Form reamer HSS	Form reamer HM (carbide)	HSS	HM (carbide)
•			Free-cutting steel (11SMnPb30)	25 ... 30	6 ... 8	12 ... 15	Emulsion / cutting oil	
	•		Heat-treatable steel (C45E)	15 ... 20	4 ... 6	7 ... 10	Emulsion / cutting oil	
•			Grey cast iron (EN-JL1040)	18	8 ... 10	10 ... 15	Emulsion / cutting oil	
•			SG iron (EN-GJS-400-18)	15	6 ... 8	7 ... 10	Emulsion / cutting oil	
		•	Stainless steel	5 ... 10	3 ... 5	3 ... 5	Emulsion / cutting oil	
	•		Light-metal alloy	30 ... 45	10 ... 15	15 ... 25	Emulsion / cutting oil	



**IMPORTANT!:** To ensure trouble-free operation of the screw-in cartridge in its cavity, we strongly recommend that pilot drilling, form boring, form reaming and cavity thread-cutting are performed in one setup.



**IMPORTANT!:** To get a good cavity made with these tools, the following conditions must be met:

- Stable machine
- Good external cooling min. 20 l/min
- Stable clamping of workpieces and tool



**IMPORTANT!:**

The tool user must ensure that each finished cavity adheres to the tolerances of the respective cavity drawing. Bucher Hydraulics rejects any liability for insufficient manufacturing results.

## 1.2 Cavity type and form-tool overview

Cavity type for cartridges valves		Part number		
Cavity	Data sheet reference no.	Form borer (HSS)	Form reamer (HSS)	Form reamer carbide (HM)
		Roughing Tool	Finishing Tool	Finishing Tool
C0420	520-P-000100	5202800452	5202800451	5202800450
C0430	520-P-000300	5202800455	5202800454	5202800453
C0820	520-P-000110	5202800460	5202800459	5202800458
C0825	520-P-000210	5202800465	5202800463	5202800461
C0830	520-P-000310	5202800468	5202800467	5202800466
C0840	520-P-000410	5202800471	5202800470	5202800469
C1020	520-P-000120	5202800476	5202800474	5202800472
C1025	520-P-000220	5202800482	5202800480	5202800478
C1030	520-P-000320	5202800487	5202800486	5202800484
C1040	520-P-000420	5202800491	5202800490	5202800488
C1220	520-P-000130	5202800496	5202800495	5202800493
C1225	520-P-000230	5202800500	5202800499	5202800497
C1230	520-P-000330	5202800505	5202800504	5202800502
C1240	520-P-000430	5202800509	5202800508	5202800506
C1620	520-P-000140	5202800514	5202800513	5202800512
C1625	520-P-000240	5202800517	5202800516	5202800515
C1630	520-P-000340	5202800521	5202800520	5202800518
C1640	520-P-000440	5202800525	5202800524	5202800523

Tool shank: cylindrical without internal cooling  
the above tools have 1/2", 5/8", 3/4" or 1" shaft, depending on size and type.

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[www.bucherhydraulics.com/commoncavity](http://www.bucherhydraulics.com/commoncavity)

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Classification: 430.Cavity....