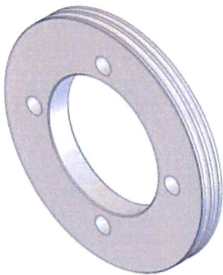


Toolings

Standard toolings

* marked items are made-to-order

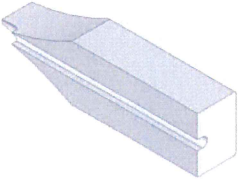
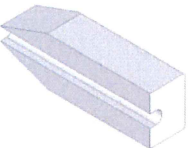
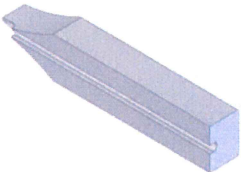
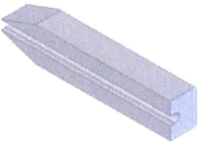
Name	Wire Diameter	Part No.	Remarks	
	1.3/1.4	69X429-1314	*	- High Speed Steel
	1.5/1.6	69X429-1516		- Double-groove
	1.7/1.9	69X429-1719	*	
	1.8/2.0	69X429-1820		
	2.2/2.5	69X429-2225	*	Make sure to choose proper range of wire diameter.
	2.3/2.6	69X429-2326		Refer to the table on the next page.
	2.9/3.0	69X429-2930		
	3.5/4.0	69X429-3540		

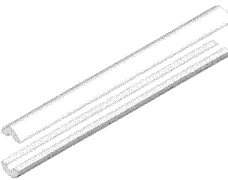
VM-40 Feed roll sizes

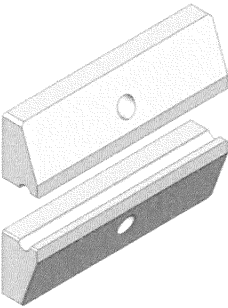
⚠ CAUTION

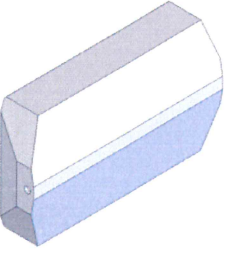
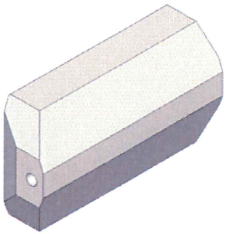
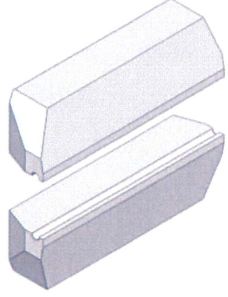
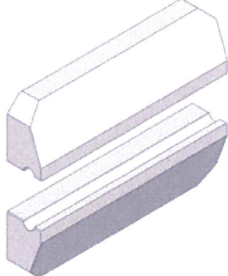
- Make sure to apply proper sized ones.
 Otherwise, the feed unit breaks down.

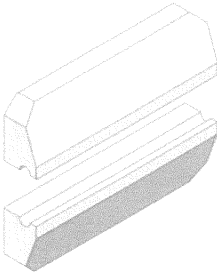
Benchmark dia.(mm)	Wire dia. Applicable (mm)	Part No. (engraved code)	
φ1.3	φ1.27 or more~φ1.37 or less	69X429-1314	*
φ1.4	φ1.37 or more~φ1.47 or less	69X429-1314	*
φ1.5	φ1.47 or more~φ1.57 or less	69X429-1516	
φ1.6	φ1.57 or more~φ1.67 or less	69X429-1516	
φ1.7	φ1.67 or more~φ1.77 or less	69X429-1719	*
φ1.8	φ1.77 or more~φ1.87 or less	69X429-1820	
φ1.9	φ1.87 or more~φ1.97 or less	69X429-1719	*
φ2.0	φ1.97 or more~φ2.07 or less	69X429-1820	
φ2.1	φ2.07 or more~φ2.17 or less	Made-to-order	*
φ2.2	φ2.17 or more~φ2.26 or less	69X429-2225	*
φ2.3	φ2.26 or more~φ2.36 or less	69X429-2326	
φ2.4	φ2.36 or more~φ2.46 or less	Made-to-order	*
φ2.5	φ2.46 or more~φ2.56 or less	69X429-2225	*
φ2.6	φ2.56 or more~φ2.66 or less	69X429-2326	
φ2.7	φ2.66 or more~φ2.76 or less	Made-to-order	*
φ2.8	φ2.76 or more~φ2.86 or less	Made-to-order	*
φ2.9	φ2.86 or more~φ2.96 or less	69X370-2930	
φ3.0	φ2.96 or more~φ3.06 or less	66X370-2930	
φ3.1	φ3.06 or more~φ3.16 or less	Made-to-order	*
φ3.2	φ3.16 or more~φ3.26 or less	Made-to-order	*
φ3.3	φ3.26 or more~φ3.36 or less	Made-to-order	*
φ3.4	φ3.36 or more~φ3.46 or less	Made-to-order	*
φ3.5	φ3.46 or more~φ3.56 or less	69X370-3540	
φ3.6	φ3.56 or more~φ3.66 or less	Made-to-order	*
φ3.7	φ3.66 or more~φ3.76 or less	Made-to-order	*
φ3.8	φ3.76 or more~φ3.86 or less	Made-to-order	*
φ3.9	φ3.86 or more~φ3.96 or less	Made-to-order	*
φ4.0	φ3.96 or more~φ4.06 or less	69X370-3540	

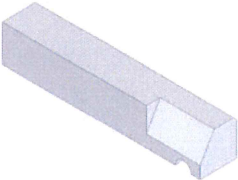
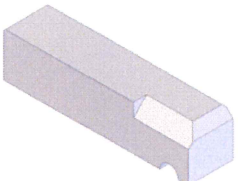
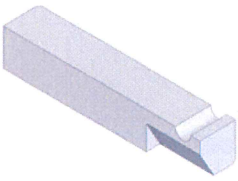
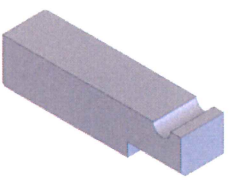
Name	Benchmark w.d.	Part No.	Remarks
Wire guide φ1.6~2.9 	Flat	69X430-F	- Carbide
	1.5	69X430-150	* - Use grooved one along with Flat one
	1.6	69X430-160	
	1.7	69X430-170	*
	1.8	69X430-180	
	1.9	69X430-190	*
	2.0	69X430-200	
	2.2	69X430-220	*
	2.3	69X430-230	
	2.5	69X430-250	*
	2.6	69X430-260	
	2.9	69X430-290	
Wire guide φ3.0~4.0 	Flat	69X431-F	- Carbide
	3.0	69X431-300	* - Use grooved one along with flat one
	3.2	69X431-320	
	3.5	69X431-350	
	4.0	69X431-400	
Name	Benchmark w.d.	Part No.	Remarks
Middle guide φ1.6~2.9 	Flat	69X432-F	- Carbide
	1.5	69X432-150	* - Use grooved one along with flat one
	1.6	69X432-160	
	1.7	69X432-170	*
	1.8	69X432-180	
	1.9	69X432-190	*
	2.0	69X432-200	
	2.2	69X432-220	*
	2.3	69X432-230	
	2.5	69X432-250	*
	2.6	69X432-260	
	2.9	69X432-290	
Middle guide φ3.0~4.0 	Flat	69X433-F	- Carbide
	3.0	69X433-300	* - Use grooved one along with flat one
	3.2	69X433-320	
	3.5	69X433-350	
	4.0	69X433-400	

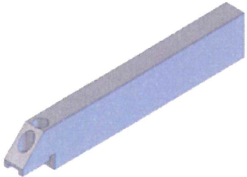
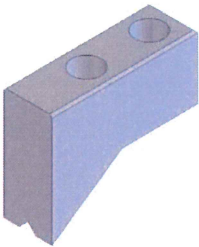
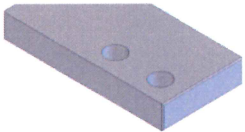
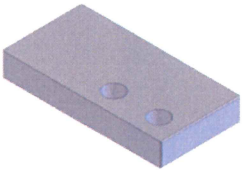
Name	Benchmark w.d.	Part No.	Remarks	
 Quill liner	1.5	69X428-150	*	- Hi Speed Steel
	1.6	69X428-160		- Half timber shape (2pcs/set)
	1.7	69X428-170	*	
	1.8	69X428-180		
	1.9	69X428-190	*	
	2.0	69X428-200		
	2.2	69X428-220	*	
	2.3	69X428-230		
	2.5	69X428-250	*	
	2.6	69X428-260		
	2.9	69X428-290		
	3.0	69X428-300	*	
	3.2	69X428-320		
	3.5	69X428-350	*	
	4.0	69X428-400		

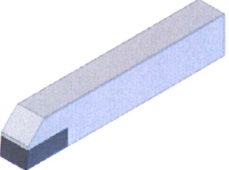
Name	Benchmark w.d.	Part No.	Remarks	
 Sub quill	1.6	69X427-160		- Hi Speed Steel
	1.7	69X427-170	*	- Halved shape (2pcs/set)
	1.8	69X427-180		
	1.9	69X427-190	*	
	2.0	69X427-200		
	2.2	69X427-220	*	
	2.3	69X427-230		
	2.5	69X427-250	*	
	2.6	69X427-260		
	2.9	69X427-290		
	3.0	69X427-300	*	
	3.2	69X427-320		
	3.5	69X427-350		
	4.0	69X427-400		

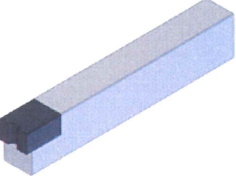
Name	Benchmark w.d.	Part No.	Remarks
Square shaped quill 	1.6	25X751-160R	- Carbide
	1.7	25X751-170R	*
	1.8	25X751-180R	
	1.9	25X751-190R	*
	2.0	25X751-200R	
	2.3	25X751-230R	
	2.6	25X751-260R	
Square shaped quill 	2.9	69X426-290	- Carbide
	3.0	69X426-300	*
	3.2	69X426-320	
	3.5	69X426-350	
	4.0	69X426-400	
Name	Benchmark w.d.	Part No.	Remarks
Halved square quill 	1.5	25X800-150	* - Carbide
	1.6	25X800-160	* - Half timber shaped (2pcs/set)
	1.7	25X800-170	*
	1.8	25X800-180	*
	1.9	25X800-190	*
	2.0	25X800-200	*
	2.1	25X800-210	*
	2.2	25X800-220	*
	2.3	25X800-230	*
	2.4	25X800-240	*
	2.5	25X800-250	*
	2.6	25X800-260	*
Halved square quill 	2.9	69X435-290	* - Carbide
	3.0	69X435-300	* - Half timber shaped (2pcs/set)
	3.2	69X435-320	* - To be used along with
	3.5	69X435-350	* Y69B127 Quill spacer.
	4.0	69X435-400	*

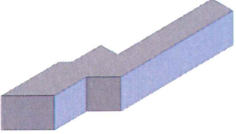
Name	Benchmark w.d.	Part No.	Remarks
Auxiliary quill 	1.5	66X381-150	- Hi Speed Steel
	1.6	66X381-160	- For bending
	1.7	66X381-170	* - Half timber shaped (2pcs/set)
	1.8	66X381-180	
	1.9	66X381-190	* To be used combining with
	2.0	66X381-200	the below listed parts.
	2.2	66X381-220	* • Y69B127 Quill spacer
	2.3	66X381-230	• Auxiliary guide A
	2.4	66X381-240	* • Auxiliary guide B
	2.5	66X381-250	* [for wire dia range 1.5~2.6mm]
	2.6	66X381-260	• Y69B132 Tool spacer
	2.9	66X381-290	• Y69B131 Tool clamp B
	3.0	66X381-300	* [for wire dia range 2.9~4.0mm]
	3.2	66X381-320	• Y69B130 Tool clamp A
	3.5	66X381-350	*
	4.0	66X381-400	

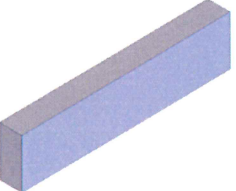
Name	Benchmark w.d.	Part No.	Remarks
Auxiliary guide A 	1.5	66X382-150	- Carbide
	1.6	66X382-160	- For bending
	1.7	66X382-170	*
	1.8	66X382-180	- To be used combining with the below listed parts.
	1.9	66X382-190	*
	2.0	66X382-200	• Auxiliary quill
	2.2	66X382-220	* • Y69B127 Quill spacer
	2.3	66X382-230	• Auxiliary guide B
	2.5	66X382-250	* • Y69B132 Tool spacer
	2.6	66X382-260	• Y69B131 Tool clamp BB
Auxiliary guide A 	2.9	69X404-290	- Carbide
	3.0	69X404-300	* - For bending
	3.2	69X404-320	
	3.5	69X404-350	- To be used combining with the below listed parts.
	4.0	69X404-400	
			• Auxiliary quill • Y69B127 Quill spacer • Auxiliary guide B • Y69B130 Tool clamp A
Name	Benchmark w.d.	Part No.	Remarks
Auxiliary guide B 	1.5	66X383-150	- Carbide
	1.6	66X383-160	- For bending
	1.7	66X383-170	*
	1.8	66X383-180	- To be used combining with the below listed parts.
	1.9	66X383-190	*
	2.0	66X383-200	• Auxiliary quill
	2.2	66X383-220	* • Y69B127 Quill spacer
	2.3	66X383-230	• Auxiliary guide A
	2.5	66X383-250	* • Y69B132 Tool spacer
	2.6	66X383-260	• Y69B131 Tool clamp B
Auxiliary guide B 	2.9	69X405-290	- Carbide
	3.0	69X405-300	* - For bending
	3.2	69X405-320	
	3.5	69X405-350	- To be used combining with the below listed parts.
	4.0	69X405-400	
			• Auxiliary quill • Y69B127 Quill spacer • Auxiliary guide A • Y69B130 Tool clamp A

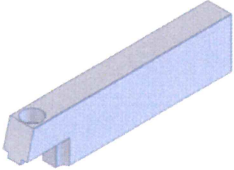
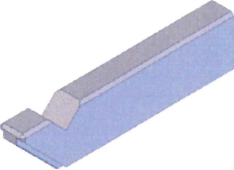
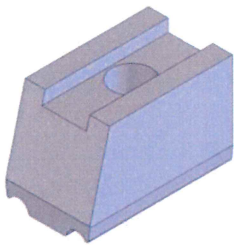
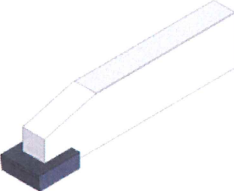
Name	Benchmark w.d.	Part No.	Remarks
Bending tool holder 		69X406	For bending Fit 69X407 Bending tool with C-M6*15L (2pcs).
Name	Benchmark w.d.	Part No.	Remarks
Bending tool 		69X407	- Hi Speed Steel - For bending Fit this on 69X406 Bending tool holder with C-M6*15L (2pcs).
Name	Benchmark w.d.	Part No.	Remarks
Pitch tool 45° 		69X408-45	- Carbide - To be used for Right winding.
Name	Benchmark w.d.	Part No.	Remarks
Pitch tool 90° 		69X408-90	- Carbide - To be used for Left winding.

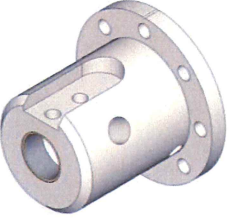
Name	Benchmark w.d.	Part No.	Remarks
Cutting tool 		69X413	- Carbide applied

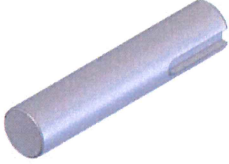
Name	Benchmark w.d.	Part No.	Remarks
Off-cut tool 	2.0	69X414-20	- Carbide applied
	2.2	69X414-22	
	2.3	69X414-23	
	2.5	69X414-25	
	2.6	69X414-26	
	2.9	69X414-29	
	3.0	69X414-30	
	3.2	69X414-32	
	3.5	69X414-35	
	4.0	69X414-40	

Name	Benchmark w.d.	Part No.	Remarks
Off-German hooking tool 		69X403	- Carbon tool steel

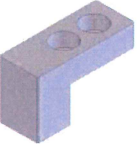
Name	Summary	Part No.	Remarks
Tool blank 	16×22×L120	69X415-S	- Carbon tool steel
	16×35×L150	69X415-L	

Name	Benchmark w.d.	Part No.	Remarks
Point holder 0° 		69X410	Fit 69X411 Body point with C-M8*20L.
Body point holder 45° 		69X439	Fit 69X411 Body point with C-M8*20L.
Name	Benchmark w.d.	Part No.	Remarks
Body point 	1.5	69X411-150	- Carbide
	1.6	69X411-160	- Double-groove
	1.7	69X411-170	*
	1.8	69X411-180	- Fit a body point on
	1.9	69X411-190	69X410 Body point holder 0°
	2.0	69X411-200	Or
	2.2	69X411-220	69X439 Body point holder 45°
	2.3	69X411-230	With C-M8*20L.
	2.5	69X411-250	*
	2.6	69X411-260	
	2.9	69X411-290	
	3.0	69X411-300	*
	3.2	69X411-320	
	3.5	69X411-350	
	4.0	69X411-400	
Name	Benchmark w.d.	Part No.	Remarks
Auxiliary point 		69X412	- Carbide applied


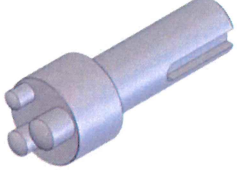
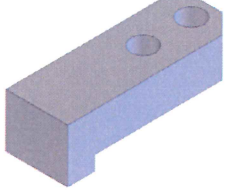
Name	Benchmark w.d.	Part No.	Remarks
Arbor holder A 		69X416	- Carbon tool steel - To be used along with 69X420 Arbor blank tool, or 69X421-**** & 69X424 at a time.

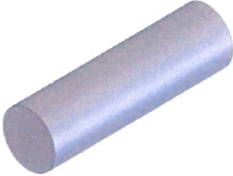
Name	Benchmark w.d.	Part No.	Remarks
Arbor blank tool Inner/Outer individual operation 		69X420	- Alloy tool steel - Edge dia.: 18mm - To be used along with 69X416 Arbor holder.

Name	適応線径と概要	Part No.	Remarks
Slotted arbor Inner/Outer individual operation 	1.15~1.64	69X421-1216	- Alloy tool steel
	Groove width: 1.7		- Edge dia.: 18mm
	Inner R1.0 • Inner R1.5		- To be used along with 69X416 Arbor holder.
	1.65~1.94	69X421-1719	
	Groove width: 2.1		
	Inner R1.5 • Inner R2.5		
	1.95~2.64	69X421-2026	
	Groove width: 2.8		
	Inner R1.5 • Inner R2.5		
	2.65~3.24	69X421-2932	
	Groove width: 3.6		
	Inner R2.5 • Inner R3.0		
	3.25~4.0	69X421-3540	
	Groove width: 4.5		
	Inner R2.5 • Inner R3.0		

Name	Benchmark w.d.	Part No.	Remarks
Pawl for Arbor holder A 		69X424	- Alloy tool steel - Fit it on 69X416 Arbor holder A with C-M6*8L (2pcs).

Name	Benchmark w.d.	Part No.	Remarks
Arbor holder B 		69X417	- Carbon tool steel - To be used along with 69X419-A Arbor blank tool and 69X419-B or 69X434 with S-M10*15L (3pcs) at a time.
Name	Summary	Part No.	Remarks
Arbor blank tool For Inner/Outer moving as one 	φ18× L57	69X419-A	- Alloy tool steel
	φ18× L80	69X419-B	- To be used along with 69X417 Arbor holder B at a time.
Name	Benchmark w.d.	Part No.	Remarks
Arbor blank tool B For Inner/Outer moving as one 		69X434	- Alloy tool steel - Edge diameter: 30mm - To be used along with 69X417 Arbor holder B with 6×6×20L Square key at a time.
Name	Benchmark w.d.	Part No.	Remarks
Arbor holder blank 		69X418	- Carbon tool steel - Edge diameter: 47mm

Name	Benchmark w.d.	Part No.	Remarks
3-Pin arbor holder 		69X422	- Carbon tool steel - To be used along with 69X423 Arbor 3-pin tool and 69X425 Pawl for 3-pin arbor holder at a time.
Name	Benchmark w.d.	Part No.	Remarks
Arbor 3-pin tool 		69X423	Tempered pin of $\phi 6$, $\phi 8$ and $\phi 10$ already inserted. To be used along with 69X422 3-pin arbor holder at a time.
Name	Benchmark w.d.	Part No.	Remarks
Pawl for 3-pin arbor holder 		69X425	- Alloy tool steel - Fit it on 69X422 3-pin arbor Holder with C-M6*15L (2pcs).

Name	Outside diameter	Part No.	Remarks	
- Carbide Pin 	3.5	75X893-350	*	- Carbide
	3.6	75X893-360	*	- Length: 24mm
	3.7	75X893-370	*	- O.D. Tolerance: $-0.01 \sim 0.00$ mm
	3.8	75X893-380	*	- Put a pin into a hole which is made on an arbor holder blank.
	3.9	75X893-390	*	
	4.0	75X893-400	*	
	4.1	75X893-410	*	
	4.2	75X893-420	*	
	4.3	75X893-430	*	
	4.4	75X893-440	*	
	4.5	75X893-450	*	
	4.6	75X893-460	*	
	4.7	75X893-470	*	
	4.8	75X893-480	*	
	4.9	75X893-490	*	
	5.0	75X893-500	*	
	5.1	75X893-510	*	
	5.2	75X893-520	*	
	5.3	75X893-530	*	
	5.4	75X893-540	*	
	5.5	75X893-550	*	
	5.6	75X893-560	*	
	5.7	75X893-570	*	
	5.8	75X893-580	*	
	5.9	75X893-590	*	
	6.0	75X893-600	*	
	6.1	75X893-610	*	
	6.2	75X893-620	*	
	6.3	75X893-630	*	
	6.4	75X893-640	*	
	6.5	75X893-650	*	
	6.6	75X893-660	*	
	6.7	75X893-670	*	
	6.8	75X893-680	*	
	6.9	75X893-690	*	
	7.0	75X893-700	*	