

More economical due to the use of 6 cutting edges

# HRMDouble

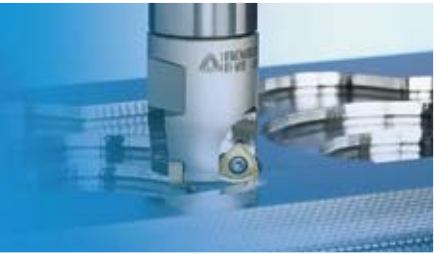


**HRMD is more economical due to the use of 6 cutting edges compared to HRM tool with positive insert**

- High rake angle cutting edge and chip breaker reduce cutting load
- HRMD insert with symmetrical cutting edge is applicable for both RH and LH type machining

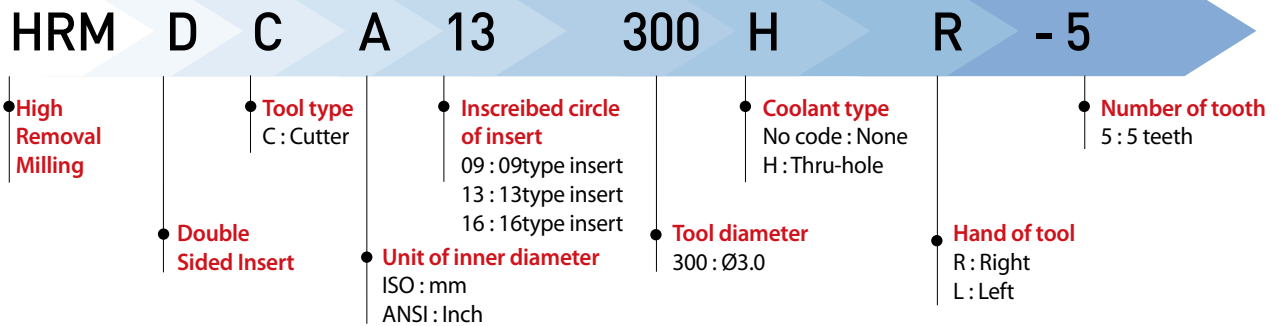


# HRMDouble

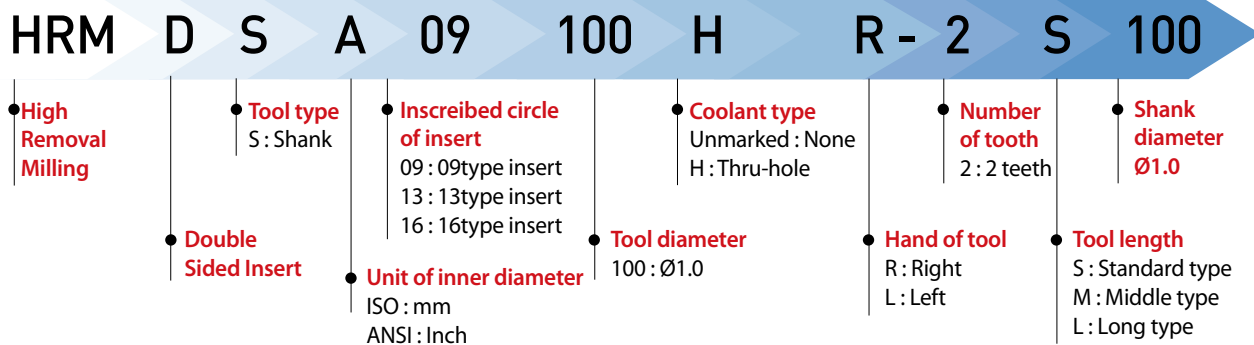


## Code system

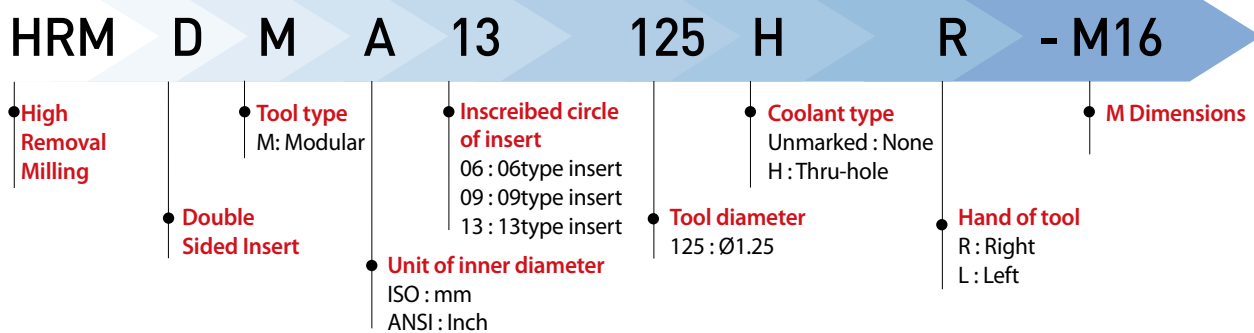
### • Cutter type



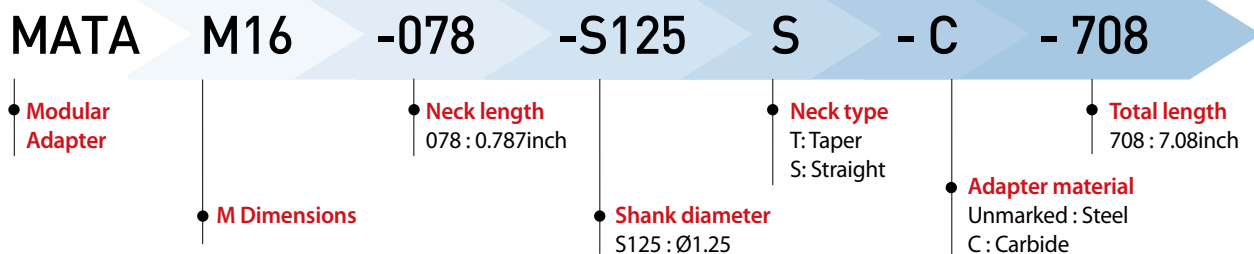
### • Shank type



### • Modular Head



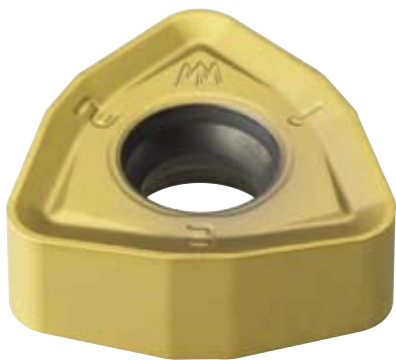
### • Modular Adaptor



## Features

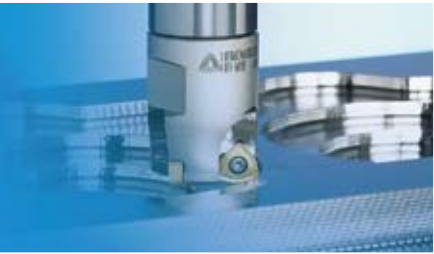
- HRMD is more economical due to the use of 6 cutting edges compared to HRM tool with positive inserts
- High rake angle cutting edge and chip breaker reduce cutting load
- Negative geometry has been designed for rigidity of cutting edge and double sided function
- Simple screw on system and stable support achieves strong clamping force
- Unique insert design for high feed and multifunctional machining
- HRMD insert with symmetrical cutting edge is applicable for both R and L type machining

## Features of Insert

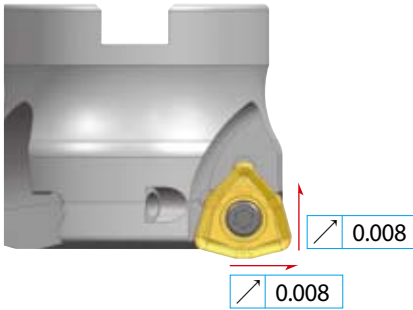


- **Nose-R**
  - Security of rigid edge in ramping Pocket machining
  - Round edge suitable for high feed rates insert geometry
  - Possible to use R/L type machining
- **Clamping surface**
  - Design for stable clamping
  - Prevention of friction by chip
- **Chip breaker**
  - Reduction of cutting load due to high rake angle
  - Improvement of chip flow and evacuation in various applications
  - Prevention of damage on clamping face of insert
- **Major cutting edge**
  - Symmetrical design insert for R/L type tool
  - Superior cutting performance due to high rake angle cutting edge
  - Low cutting resistance in high feeds
  - Special design for decreasing thrust force
- **Minor cutting edge**
  - Improvement of surface roughness in high feed machining
  - Special design for decreasing thrust force
  - Symmetrical insert design for R/L type tool

# HRMDouble



## Features of Cutter



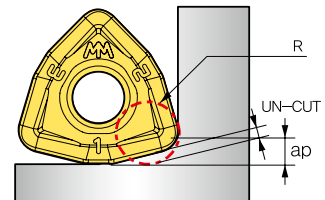
- **Inner coolant system**
  - Improvement of chip control and evacuation
  - Longer tool life due to reduced cutting temperature
- **Simple screw on system**
  - Strong clamping of screw on system
  - Convenient clamping system
  - Wide chip pocket for better chip evacuation
- **3-Surface constrained System**
  - Strong clamping of screw on system
  - Stable clamping system against different cutting resistances in various machining applications

• NOTE : There is lots of repeated information.  
For example : Symmetrical design for R/L type tool is repeated 4 times on this one page

## Corner R programming

Designation	Cutting condition		Approx. R (inch)	
	Max.ap(inch)	Max.fz(ipt)	Input. R	Uncut
WNMX060312ZNN-MM	0.04	0.05	0.07	0.015
WNMX09T316ZNN-MM	0.06	0.08	0.10	0.024
WNMX130520ZNN-MM	0.08	0.12	0.12	0.032
WNMX160720ZNN-MM	0.10	0.14	0.14	0.047

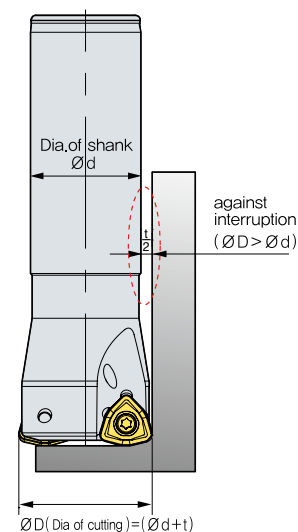
• Information for uncut part by using "Input.R" for CAM program



• Uncut part can be changed by poor machine condition or weak clamp of workpiece, etc

## Interference prevent system

Designation	ØD(inch)	ØD(inch)	t(inch)
HRMDSA06068HR-2□062	0.6880	0.625	0.063
HRMDSA06087HR-2□075	0.8750	0.750	0.125
HRMDSA06112HR-3□100	1.1250	1.000	0.125
HRMDSA06137HR-4□125	1.3750	1.250	0.125
HRMDSA09106HR-2□100	1.0625	1.000	0.060
HRMDSA09131HR-3□125	1.3125	1.250	0.060
HRMDSA09137HR-4□125	1.3750	1.250	0.130
HRMDSA09150HR-4□125	1.5000	1.250	0.250
HRMDSA09200HR-4□150	2.0000	1.500	0.500
HRMDSA13131HR-2□125	1.3130	1.250	0.060
HRMDSA13137HR-2□125	1.3750	1.250	0.130
HRMDSA13150HR-3□125	1.5000	1.250	0.250
HRMDSA13162HR-3□125	1.6250	1.250	0.380
HRMDSA13162HR-3□150	1.6250	1.500	0.130
HRMDSA13200HR-3□150	2.0000	1.500	0.500
HRMDSA13250HR-4□150	2.5000	1.500	1.000

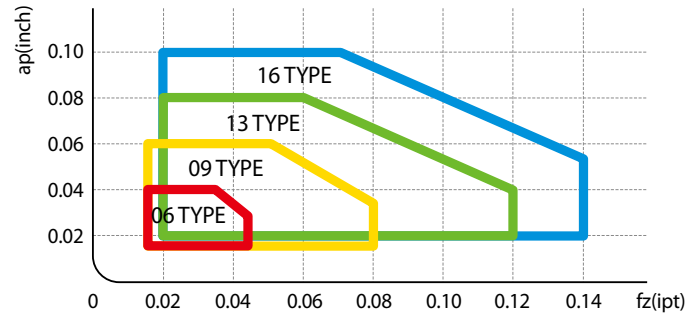
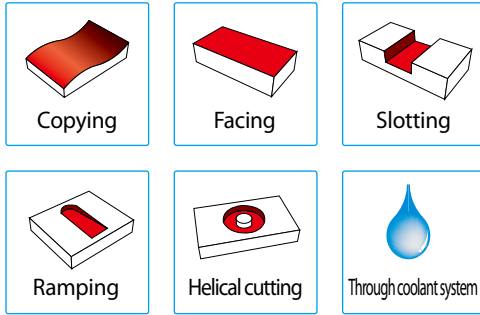


- The side clearance prevents to interference between tool and workpiece even in deep hole machining



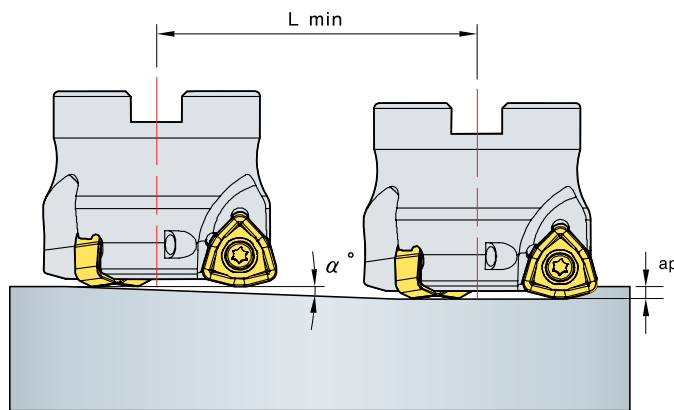
# HRMDouble

## Application area

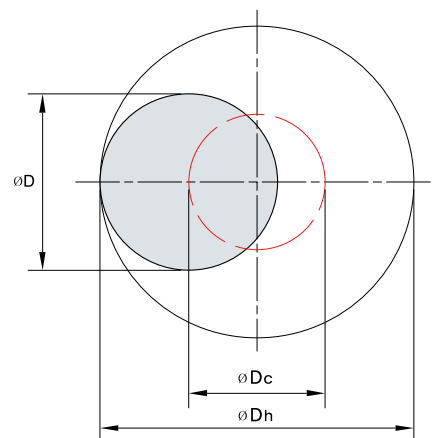


## Ramping & Helical cutting technical data

### • Ramping



### • Helical cutting



$$L \min = \frac{ap}{\tan \alpha} \text{ (inch)}$$

$$\varnothing Dc = \varnothing Dh - \varnothing D$$

$\varnothing Dc$  = Tool pass of tool center

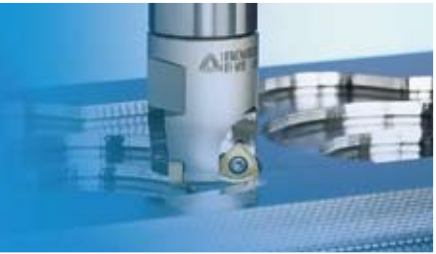
$\varnothing Dh$  = Desirable hole diameter on workpiece

$\varnothing D$  = Tool diameter

- Adjust feed to under 70% of recommended cutting condition when ramping & helical cutting
- In helical ramping, max. cutting depth per 1 helical revolution of cutter should not exceed max. cutting depth as per insert size
- In ramping, max. cutting depth for 1 ramping process should not exceed max. depth of cut as per used insert size

		(inch)						
Designation	Tool diameter $\varnothing D$	Efficient cutting diameter $\varnothing De$	Ramping			Helical ramping		
			Max. ap	Max. angle $\alpha$	Cutting Length $L_{\min}$	Dh Min. Cutting diameter	Dh Max. Cutting diameter	
HRMDSA	06068HR	0.688	0.433	0.039	3.7	0.603	1.052	1.281
	06075HR	0.750	0.495	0.039	3.3	0.676	1.177	1.406
	06087HR	0.875	0.619	0.039	2.1	1.063	1.427	1.656
	06100HR	1.000	0.741	0.039	2.6	0.858	1.677	1.906
	06112HR	1.125	0.866	0.039	1.9	1.175	1.927	2.156
	06125HR	1.250	0.992	0.039	0.6	3.724	2.177	2.406
	06137HR	1.375	1.115	0.039	0.4	5.586	2.427	2.656
	09100HR-2□□□	1.000	0.606	0.059	5.4	0.622	1.480	1.843
	09106HR-2□□□	1.063	0.646	0.059	5.0	0.669	1.559	1.921
	09118HR-3□□□	1.188	0.803	0.059	3.9	0.866	1.874	2.236
	09125HR-3□□□	1.250	0.878	0.059	3.5	0.965	2.031	2.394
	09131HR-3□□□	1.313	0.917	0.059	3.3	1.016	2.110	2.472
	09137HR-4□□□	1.375	1.000	0.059	3.0	1.114	2.268	2.630
	09150HR-4□□□	1.500	1.125	0.059	2.5	1.351	2.512	2.874
	09162HR-4□□□	1.625	1.189	0.059	2.5	1.358	2.661	3.024
	09200HR-□□□	2.000	1.583	0.059	1.8	1.850	3.449	3.811
	13125HR-2□□□	1.250	0.760	0.079	5.7	0.787	1.850	2.362
	13131HR-2□□□	1.313	0.799	0.079	5.4	0.839	1.929	2.441
	13137HR-2□□□	1.375	0.878	0.079	4.8	0.945	2.087	2.598
	13150HR-3□□□	1.500	0.996	0.079	3.7	1.222	2.331	2.843
	13162HR-3□□□	1.625	1.071	0.079	3.7	1.209	2.480	2.992
	13200HR-□□□	2.000	1.457	0.079	2.6	1.732	3.268	3.780
	13250HR-□□□	2.500	1.969	0.079	1.9	2.413	4.291	4.803
HRMDCA	09200HR-□	2.000	1.583	0.059	1.8	1.850	3.449	3.811
	09250HR-□	2.500	2.091	0.059	1.4	2.492	4.472	4.835
	09300HR-□	3.000	2.760	0.059	1.0	3.327	5.811	6.173
	09400HR-□	4.000	3.543	0.059	0.8	4.311	7.386	7.748
	13200HR-□	2.000	1.457	0.079	2.6	1.732	3.268	3.780
	13250HR-□	2.500	1.969	0.079	1.9	2.413	4.291	4.803
	13300HR-□	3.000	2.634	0.079	1.4	3.307	5.630	6.142
	13400HR-□	4.000	3.421	0.079	1.0	4.358	7.205	7.717
	13500HR-□	5.000	4.406	0.079	0.8	4.488	9.173	9.685
	16300HR-□	3.000	2.343	0.098	1.5	3.742	5.134	5.843
	16400HR-□	4.000	3.344	0.098	1.0	5.614	7.134	7.843
	16500HR-□	5.000	4.345	0.098	0.8	7.018	9.134	9.843
	16600R-□	6.000	5.345	0.098	0.6	9.357	11.134	11.843
	16800R-□	8.000	7.346	0.098	0.3	18.716	15.134	15.843
	61000R-□	10.000	9.346	0.098	0.2	28.074	19.134	19.843
161200R-□	12.000	11.346	0.098	0.1	56.149	23.134	23.843	

# HRMDouble



## Recommended cutting condition

	Designation	Hardness	Grades	vc (sfm)	fz (ipt)
P	General structural steel, Mild steel	Under 200HB	PC3500	650(330~750)	1.0 ~ 2.0
			PC3545		
	Carbon steel, Alloy steel	Under 30HRC	PC3500	590(330~720)	1.0 ~ 1.5
			PC3545		
	High Carbon steel, Alloy steel	30~40HRC	PC3500	520(330~660)	0.8 ~ 1.3
			PC3545		
	Pre-hardened steel	40~50HRC	PC3500	390(260~190)	0.6 ~ 1.2
			PC5300		
M	Stainless steel	Under 270HB	PC5300	390(260~490)	0.8 ~ 1.3
			PC3545		
K	Cast iron	Under 350N/mm <sup>2</sup>	PC5300	590(330~720)	1.2 ~ 1.8

## Machining Example - I



- **Work piece** AISI 1045 (SM45C, HRC22)
- **Cutting condition** vc(sfm)=930, fz(ipt)=0.055, vf(ipm)=398  
ap(inch)=0.032, ae(inch)=1.378  
Coolant : Dry, Machining : Copying  
Machine : Horizontal MCT  
Overhang of tool : 10inch
- **Tools** HRMDCM13050HR-4  
WNMX130520ZNN-MM(PC3500)

- **Productivity : 40% increase**
- **Tool cost : 80% decrease**

### • Test result

In comparing HRMD with our competitor using the same cutting conditions, the cutting speed of HRMD was higher with the same depth of cut (ap×ae), the cycle time was reduced by 40% and the tool life was increased to over 60%. HRMD is economically more efficient due to the use of 6 cutting edges compared to EDNW type with positive insert.



## Machining Example - II



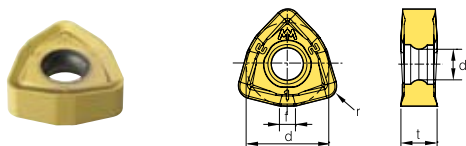
- **Workpiece**      AISI 304 (STS304)
- **Cutting condition**     $vc(\text{sfm})=430$ ,  $fz(\text{ipt})=0.047$ ,  $vf(\text{ipm})=117$   
 $ap(\text{inch})=0.04$ ,  $ae(\text{inch})= 3.15$   
 Machining : Facing and Slotting  
 Machine : Vertical MCT  
 Overhang of tool : 10inch
- **Tools**              HRMDCM13100HR-6  
                              WNMX130520ZNN-MM(PC3545)

- **Productivity : 80% increase**
- **Tool cost : 25% decrease**

### • Test result

In comparing HRMD with our competitor using the same cutting conditions, the cutting speed of HRMD was higher with the same depth of cut ( $ap \times ae$ ), the cycle time was reduced by 80% and the tool life was the same, but HRMD is economically more efficient due to the use of 6 cutting edges compared to SDKN type with positive insert.

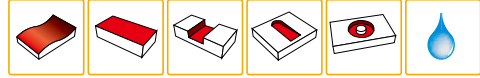
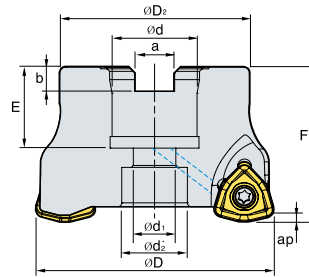
## Applicable inserts



Designation		d	t	r	d <sub>1</sub>	f
WNMX	060312ZNN-MM	0.250	0.125	0.047	0.113	0.047
	09T316ZNN-MM	0.375	0.156	0.063	0.142	0.067
	130520ZNN-MM	0.500	0.219	0.079	0.185	0.098
	160720ZNN-MM	0.630	0.276	0.079	0.228	0.118

# HRMDouble

## HRMDCA09



AR: -7°  
RR: -12°-18°  
AA76°

(inch)

Designation		ØD	ØD <sub>2</sub>	Ød	Ød <sub>1</sub>	Ød <sub>2</sub>	a	b	E	F	ap	lbs	Bolt	
HRMDCA	09200HR-4	4	2.000	1.772	0.750	0.413	0.630	0.315	0.220	0.787	1.75	0.06	0.662	3/8-24UNF
	09200HR-5	5	2.000	1.772	0.750	0.413	0.630	0.315	0.220	0.787	1.75	0.06	0.662	
	09250HR-5	5	2.500	1.772	0.750	0.413	0.630	0.315	0.220	0.787	1.75	0.06	1.103	
	09250HR-6	6	2.500	1.772	0.750	0.413	0.630	0.315	0.220	0.787	1.75	0.06	1.103	
	09300HR-6	6	3.000	2.205	1.000	0.551	0.827	0.374	0.248	0.866	2.00	0.06	3.308	1/2-20UNF
	09300HR-7	7	3.000	2.205	1.000	0.551	0.827	0.374	0.248	0.866	2.00	0.06	3.308	
	09400HR-7	7	4.000	2.874	1.250	0.709	1.024	0.500	0.319	0.866	2.00	0.06	4.631	5/8-18UNF
	09400HR-8	8	4.000	2.874	1.250	0.709	1.024	0.500	0.319	0.866	2.00	0.06	4.631	

### • Parts

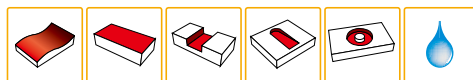
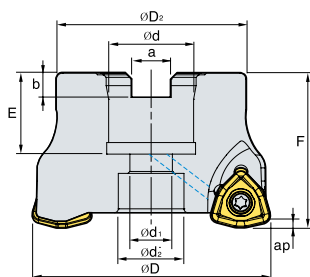
Screw	Wrench
FTKA0307	TW09S

### • Available Inserts

WNMX-MM		Coated							Cermet		Uncoated							
Designation		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX	09T316ZNN-MM				●	●	●	●	●									

●: Stock item

# HRMDCA13



• AR: -7°  
• RR: -12°-4°  
**AA76°**

(inch)

Designation		ØD	ØD <sub>2</sub>	Ød	Ød <sub>1</sub>	Ød <sub>2</sub>	a	b	E	F	ap	lbs	Bolt	
HRMDCA	13200HR-3	3	2.0	1.772	0.75	0.413	0.630	0.315	0.220	0.787	1.75	0.08	0.662	3/8-24UNF
	13200HR-4	4	2.0	1.772	0.75	0.413	0.630	0.315	0.220	0.787	1.75	0.08	0.662	
	13250HR-4	4	2.5	1.772	0.75	0.413	0.630	0.315	0.220	0.787	1.75	0.08	1.103	
	13250HR-5	5	2.5	1.772	0.75	0.413	0.630	0.315	0.220	0.787	1.75	0.08	1.103	1/2-20UNF
	13300HR-5	5	3.0	2.205	1.00	0.551	0.827	0.374	0.248	0.866	2.00	0.08	2.205	
	13300HR-6	6	3.0	2.205	1.00	0.551	0.827	0.374	0.248	0.866	2.00	0.08	2.205	5/8-18UNF
	13400HR-6	6	4.0	2.874	1.25	0.709	1.024	0.500	0.319	0.866	2.00	0.08	3.528	
	13400HR-7	7	4.0	2.874	1.25	0.709	1.024	0.500	0.319	0.866	2.00	0.08	3.528	3/4-16UNF
	13500HR-7	7	5.0	3.433	1.50	0.827	1.220	0.626	0.394	1.181	2.50	0.08	4.410	
13500HR-8	8	5.0	3.433	1.50	0.827	1.220	0.626	0.394	1.181	2.50	0.08	4.410		

## • Parts

Screw 	Wrench 
FTKA0412B	TW15S

## • Available Inserts

WNMX-MM

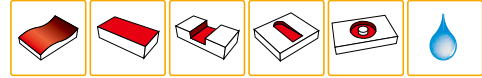


Designation	Coated							Cermet	Uncoated								
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX 130520ZNN-MM				●	●	●	●										

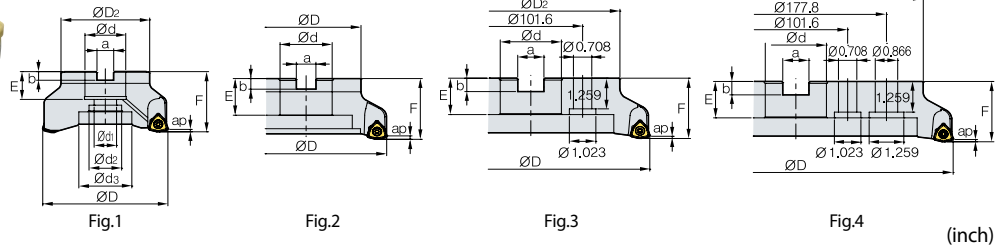
● : Stock item

# HRMDouble

## HRMDCA16



AR: -7°  
RR: -12°-4°  
AA76°



Designation		ØD	ØD <sub>2</sub>	Ød	Ød <sub>1</sub>	Ød <sub>2</sub>	Ød <sub>3</sub>	a	b	E	F	ap	lbs	Bolt	Fig.
HRMDCA 16300HR-4	4	3.0	2.362	1.00	0.551	0.827	-	0.374	0.248	0.866	2.00	0.098	1.94	1/2-20UNF	1
16300HR-5	5	3.0	2.362	1.00	0.551	0.827	-	0.374	0.248	0.866	2.00	0.098	1.81		
16400HR-5	5	4.0	3.346	1.25	0.709	1.024	-	0.500	0.319	0.866	2.00	0.098	3.77	5/8-18UNF	1
16400HR-6	6	4.0	3.346	1.25	0.709	1.024	-	0.500	0.319	0.866	2.00	0.098	3.86		
16500HR-6	6	5.0	3.937	1.50	0.827	1.220	2.205	0.626	0.394	1.181	2.50	0.098	7.23	3/4-16UNF	1
16500HR-7	7	5.0	3.937	1.50	0.827	1.220	2.205	0.626	0.394	1.181	2.50	0.098	7.25		
16600R-7	7	6.0	5.039	2.00	-	3.543	-	0.752	0.433	1.181	2.50	0.098	8.99	1-14UNF	2
16600R-8	8	6.0	5.039	2.00	-	3.543	-	0.752	0.433	1.181	2.50	0.098	9.13		
16800R-8	8	8.0	5.701	2.50	-	5.197	-	1.000	0.551	1.496	2.50	0.098	14.7	-	3
16800R-10	10	8.0	5.701	2.50	-	5.197	-	1.000	0.551	1.496	2.50	0.098	14.79		
161000R-10	10	10.0	7.480	2.50	-	7.087	-	1.000	0.551	1.496	2.50	0.098	24.98	-	3
161000R-12	12	10.0	7.480	2.50	-	7.087	-	1.000	0.551	1.496	2.50	0.098	24.89		
161200R-12	12	12.0	9.646	2.50	-	9.370	-	1.000	0.551	1.496	2.50	0.098	37.15	-	4
161200R-14	14	12.0	9.646	2.50	-	9.370	-	1.000	0.551	1.496	2.50	0.098	37.39		

### • Parts

Screw 	Wrench 
FTGA0513-P	TW20-100

### • Available Inserts

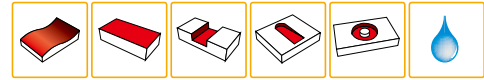
WNMX-MM



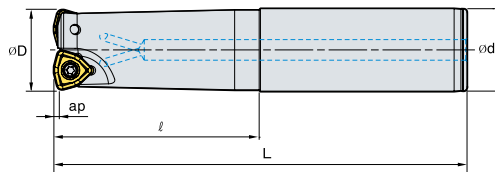
Designation	Coated							Cermet	Uncoated								
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX 160720ZNN-MM					●	●											

● : Stock item

# HRMDSA06





•AR: -7°  
•RR: -17°~25°  
**AA76°**



(inch)

Designation	Flutes	ØD	Ød	ℓ	L	ap	lbs
HRMDSA 06068HR-2S062	2	0.688	0.625	0.787	4.331	0.039	0.32
06068HR-2M062	2	0.688	0.625	0.787	5.906	0.039	0.44
06068HR-2L062	2	0.688	0.625	0.787	7.874	0.039	0.60
06075HR-2S075	2	0.750	0.750	1.969	5.118	0.039	0.55
06075HR-2M075	2	0.750	0.750	3.937	7.087	0.039	0.75
06075HR-2L075	2	0.750	0.750	5.118	9.843	0.039	1.06
06087HR-2S075	2	0.875	0.750	0.787	5.118	0.039	0.59
06087HR-2M075	2	0.875	0.750	0.787	7.087	0.039	0.82
06087HR-2L075	2	0.875	0.750	0.787	9.843	0.039	1.14
06100HR-3S100	3	1.000	1.000	2.362	5.512	0.039	1.01
06100HR-3M100	3	1.000	1.000	3.150	7.087	0.039	1.31
06100HR-3L100	3	1.000	1.000	4.724	9.843	0.039	1.84
06112HR-3S100	3	1.125	1.000	1.181	5.512	0.039	1.09
06112HR-3M100	3	1.125	1.000	1.181	7.087	0.039	1.40
06112HR-3L100	3	1.125	1.000	1.181	9.843	0.039	1.95
06125HR-4S125	4	1.250	1.250	2.756	5.906	0.039	1.76
06125HR-4M125	4	1.250	1.250	3.937	7.874	0.039	2.38
06125HR-4L125	4	1.250	1.250	7.087	11.811	0.039	3.58
06137HR-4S125	4	1.375	1.250	1.575	7.874	0.039	2.53
06137HR-4M125	4	1.375	1.250	1.575	9.843	0.039	3.17
06137HR-4L125	4	1.375	1.250	1.575	11.811	0.039	3.81

## • Parts

Screw	Wrench
 ETNA02506	 TW07S

## • Available Inserts

WNMX-MM

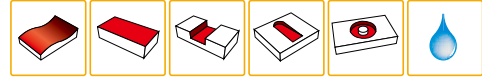


Designation	Coated							Cermet	Uncoated								
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX 060312ZNN-MM					●	●											

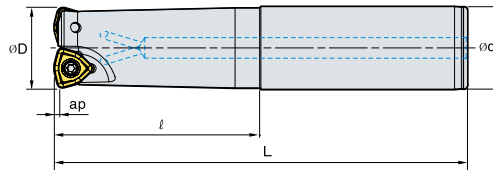
● : Stock item

# HRMDouble

## HRMDSA09



AR: -7°  
RR: -17°-25°  
AA76°



(inch)

	Designation		ØD	Ød	l	L	ap	lbs
HRMDSA	09100HR-2S100	2	1.0000	1.00	2.362	5.512	0.06	1.103
	09100HR-2M100	2	1.0000	1.00	4.724	7.874	0.06	1.323
	09100HR-2L100	2	1.0000	1.00	7.087	11.811	0.06	2.205
	09106HR-2S100	2	1.0625	1.00	2.362	5.512	0.06	1.103
	09106HR-2M100	2	1.0625	1.00	2.362	7.874	0.06	1.544
	09106HR-2L100	2	1.0625	1.00	2.362	11.811	0.06	2.205
	09118HR-3S125	3	1.1875	1.25	2.756	5.906	0.06	1.764
	09118HR-3M125	3	1.1875	1.25	4.724	7.874	0.06	2.205
	09118HR-3L125	3	1.1875	1.25	7.087	11.811	0.06	3.308
	09125HR-3S125	3	1.2500	1.25	2.756	5.906	0.06	1.764
	09125HR-3M125	3	1.2500	1.25	4.724	7.874	0.06	2.426
	09125HR-3L125	3	1.2500	1.25	7.087	11.811	0.06	3.749
	09131HR-3S125	3	1.3125	1.25	2.756	5.906	0.06	1.764
	09131HR-3M125	3	1.3125	1.25	2.756	7.874	0.06	2.426
	09131HR-3L125	3	1.3125	1.25	2.756	11.811	0.06	3.749
	09137HR-4S125	4	1.3750	1.25	1.969	5.906	0.06	1.985
	09137HR-4M125	4	1.3750	1.25	1.969	7.874	0.06	2.426
	09137HR-4L125	4	1.3750	1.25	1.969	11.811	0.06	3.749
	09150HR-4S125	4	1.5000	1.25	1.969	5.906	0.06	1.985
	09150HR-4M125	4	1.5000	1.25	1.969	9.843	0.06	3.308
	09150HR-4L125	4	1.5000	1.25	1.969	11.811	0.06	3.969
	09200HR-4S150	4	2.0000	1.50	1.575	5.906	0.06	3.087
	09200HR-4M150	4	2.0000	1.50	1.575	9.843	0.06	5.292
	09200HR-4L150	4	2.0000	1.50	1.575	11.811	0.06	6.395
09200HR-5S150	5	2.0000	1.50	1.575	5.906	0.06	3.087	
09200HR-5M150	5	2.0000	1.50	1.575	9.843	0.06	5.292	
09200HR-5L150	5	2.0000	1.50	1.575	11.811	0.06	6.395	

### • Parts

 Screw	 Wrench
FTKA0307	TW09S

### • Available Inserts

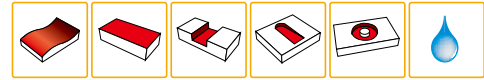
WNMX-MM



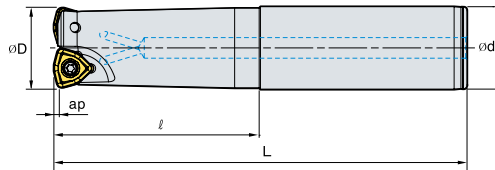
Designation	Coated						Cermet	Uncoated								
	NCM325	NCM335	NC5330	PC3500	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX 09T316ZNN-MM				●	●	●	●	●								

● : Stock item

# HRMDSA13



• AR: -7°  
• RR: -14°-16° AA76°



(inch)

Designation		$\phi D$	$\phi d$	$\ell$	L	ap	lbs
HRMDSA 13125HR-2S125	2	1.250	1.250	2.756	5.906	0.08	1.764
13125HR-2M125	2	1.250	1.250	4.724	7.874	0.08	2.205
13125HR-2L125	2	1.250	1.250	7.087	11.811	0.08	3.528
13131HR-2S125	2	1.313	1.250	2.756	5.906	0.08	1.754
13131HR-2M125	2	1.313	1.250	2.756	7.874	0.08	2.426
13131HR-2L125	2	1.313	1.250	2.756	11.811	0.08	3.749
13137HR-2S125	2	1.375	1.250	1.969	5.906	0.08	1.764
13137HR-2M125	2	1.375	1.250	1.969	7.874	0.08	2.426
13137HR-2L125	2	1.375	1.250	1.969	11.811	0.08	3.749
13150HR-3S125	3	1.500	1.250	1.969	5.906	0.08	1.764
13150HR-3M125	3	1.500	1.250	1.969	9.843	0.08	3.087
13150HR-3L125	3	1.500	1.250	1.969	11.811	0.08	3.749
13150HR-3S150	3	1.500	1.500	2.362	5.906	0.08	2.646
13150HR-3M150	3	1.500	1.500	5.118	9.843	0.08	4.631
13150HR-3L150	3	1.500	1.500	7.087	11.811	0.08	5.733
13162HR-3S125	3	1.625	1.250	1.969	5.906	0.08	1.985
13162HR-3M125	3	1.625	1.250	1.969	9.843	0.08	2.646
13162HR-3L125	3	1.625	1.250	1.969	11.811	0.08	3.969
13162HR-3S150	3	1.625	1.500	1.969	5.906	0.08	2.867
13162HR-3M150	3	1.625	1.500	1.969	9.843	0.08	4.851
13162HR-3L150	3	1.625	1.500	1.969	11.811	0.08	5.954
13200HR-3S150	3	2.000	1.500	1.969	5.906	0.08	2.426
13200HR-3M150	3	2.000	1.500	1.969	9.843	0.08	3.749
13200HR-3L150	3	2.000	1.500	1.969	11.811	0.08	4.410
13200HR-4S150	4	2.000	1.500	1.969	5.906	0.08	3.308
13200HR-4M150	4	2.000	1.500	1.969	9.843	0.08	5.292
13200HR-4L150	4	2.000	1.500	1.969	11.811	0.08	6.395
13250HR-4S150	4	2.500	1.500	1.969	5.906	0.08	3.087
13250HR-4M150	4	2.500	1.500	1.969	9.843	0.08	4.631
13250HR-4L150	4	2.500	1.500	1.969	11.811	0.08	5.292
13250HR-5S150	5	2.500	1.500	1.969	5.906	0.08	3.969
13250HR-5M150	5	2.500	1.500	1.969	9.843	0.08	6.174
13250HR-5L150	5	2.500	1.500	1.969	11.811	0.08	7.056

## • Parts

Screw 	Wrench 
FTKA0412B	TW15S

## • Available Inserts

### WNMX-MM

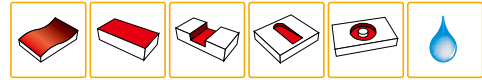
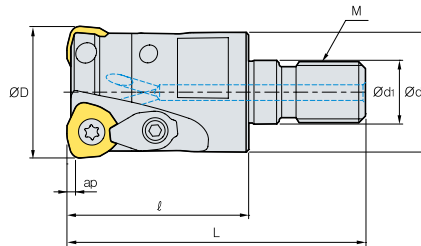
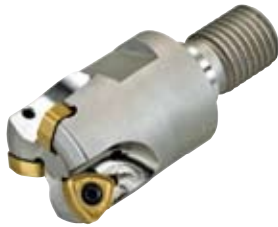


Designation	Coated							Cermet	Uncoated								
	NCM325	NCM335	NC5330	PC3500	PC3300	PC3400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX 130520ZNN-MM				●	●	●	●										

● : Stock item

# HRMDouble

## HRMDMA06



AR: -7°  
RR: -18°-25°  
AA76°

(inch)

Designation		ØD	Ød	Ød <sub>1</sub>	l	L	M	ap	lbs
HRMDMA 06068HR-M08	2	0.688	0.571	0.335	0.984	1.654	M08	0.039	0.07
06075HR-M10	2	0.750	0.689	0.413	1.181	2.008	M10	0.039	0.13
06087HR-M10	2	0.875	0.709	0.413	1.181	2.008	M10	0.039	0.15
06100HR-M12	3	1.000	0.906	0.492	1.378	2.323	M12	0.039	0.23
06112HR-M12	3	1.125	0.906	0.492	1.378	2.323	M12	0.039	0.28
06125HR-M16	4	1.250	1.142	0.669	1.575	2.638	M16	0.039	0.45
06137HR-M16	4	1.375	1.142	0.669	1.575	2.638	M16	0.039	0.51

### • Parts

Screw 	Wrench 
ETNA02506	TW07S

### • Available Inserts

WNMX-MM

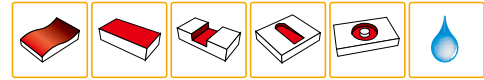
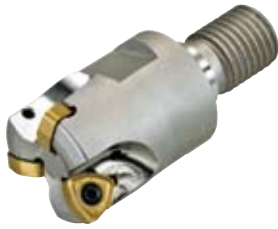


Designation	Coated							Cermet	Uncoated								
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
WNMX 060312ZNN-MM					●	●											

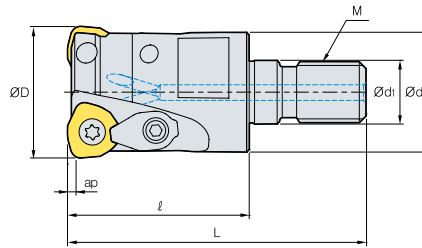
●: Stock item



# HRMDMA09/13



• AR: -7°  
• RR: -18°~25°  
AA76°



(inch)

Designation		ØD	Ød	Ød1	ℓ	L	M	ap	lbs	
HRMDMA	09100HR-M12	2	1.000	0.906	0.492	1.378	2.323	M12	0.06	0.22
	09106HR-M12	2	1.063	0.906	0.492	1.378	2.323	M12	0.06	0.24
	09118HR-M16	3	1.188	1.142	0.669	1.575	2.638	M16	0.06	0.42
	09125HR-M16	3	1.250	1.142	0.669	1.575	2.638	M16	0.06	0.44
	09131HR-M16	3	1.313	1.142	0.669	1.575	2.638	M16	0.06	0.46
	09137HR-M16	4	1.375	1.142	0.669	1.575	2.638	M16	0.06	0.49
	09150HR-M16	4	1.500	1.142	0.669	1.575	2.638	M16	0.06	0.55
	13125HR-M16	2	1.250	1.142	0.669	1.575	2.638	M16	0.08	0.44
	13131HR-M16	2	1.313	1.142	0.669	1.575	2.638	M16	0.08	0.44
	13137HR-M16	2	1.375	1.142	0.669	1.575	2.638	M16	0.08	0.49
13150HR-M16	3	1.500	1.142	0.669	1.772	2.835	M16	0.08	0.57	

## • Parts

Type	Screw	Wrench
09 Type	FTKA0307	TW09S
13 Type	FTKA0412B	TW15S

## • Available Inserts

WNMX-MM



Type	Designation	Coated						Cermet	Uncoated								
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
09 Type	WNMX 09T316ZNN-MM			●	●	●	●										
13 Type	130520ZNN-MM			●	●	●	●										

● : Stock item

# HRMDouble

## MATA (Steel Shank type)

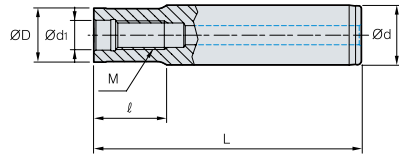


Fig.1

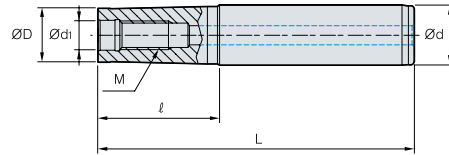


Fig.2

(inch)

Designation	ØD	Ød	Ød <sub>1</sub>	ℓ	L	M	Fig.
<b>MATA</b> M06-078-S038S	0.354	3/8	0.256	0.787	2.756	M06	1
M06-157-S050T	0.354	1/2	0.256	1.575	3.780	M06	1
M06-255-S063T	0.354	5/8	0.256	2.559	4.921	M06	1
M6B-078-S050S	0.433	1/2	0.256	0.787	2.992	M06	1
M6B-157-S050S	0.433	1/2	0.256	1.575	3.780	M06	1
M6B-255-S063T	0.433	5/8	0.256	2.559	4.921	M06	1
M6B-315-S063T	0.433	5/8	0.256	3.150	5.512	M06	1
M08-078-S063S	0.571	5/8	0.335	0.787	3.150	M08	2
M08-157-S063T	0.571	5/8	0.335	1.575	3.937	M08	2
M08-255-S063T	0.571	5/8	0.335	2.559	4.921	M08	2
M08-315-S075T	0.571	3/4	0.335	3.150	5.906	M08	2
M08-433-S100T	0.571	1	0.335	4.331	7.480	M08	2
M10-118-S075S	0.689	3/4	0.413	1.181	3.937	M10	2
M10-196-S075T	0.689	3/4	0.413	1.969	4.724	M10	2
M10-275-S075T	0.689	3/4	0.413	2.756	5.512	M10	2
M10-354-S100T	0.689	1	0.413	3.543	6.693	M10	2
M10-433-S100T	0.689	1	0.413	4.331	7.480	M10	2
M10-511-S125T	0.689	1 1/4	0.413	5.118	8.661	M10	2
M12-118-S100S	0.906	1	0.492	1.181	4.331	M12	2
M12-196-S100T	0.906	1	0.492	1.969	5.118	M12	2
M12-275-S100T	0.906	1	0.492	2.756	5.906	M12	2
M12-354-S100T	0.906	1	0.492	3.543	6.693	M12	2
M12-433-S125T	0.906	1 1/4	0.492	4.331	7.874	M12	2
M12-689-S150T	0.906	1 1/2	0.492	6.890	11.811	M12	2
M16-137-S125S	1.142	1 1/4	0.669	1.378	4.921	M16	2
M16-216-S125T	1.142	1 1/4	0.669	2.165	5.709	M16	2
M16-315-S125T	1.142	1 1/4	0.669	3.150	6.693	M16	2
M16-472-S125T	1.142	1 1/4	0.669	4.724	8.268	M16	2
M16-689-S150T	1.142	1 1/2	0.669	6.890	11.811	M16	2

- S : Straight Neck Adapter
- T : Taper Neck Adapter

## MATA-C (Carbide Shank type)

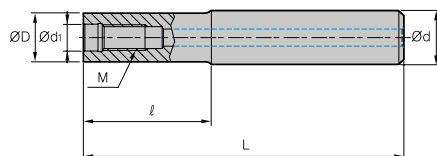


Fig.1

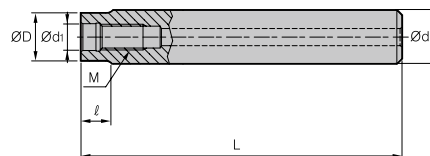
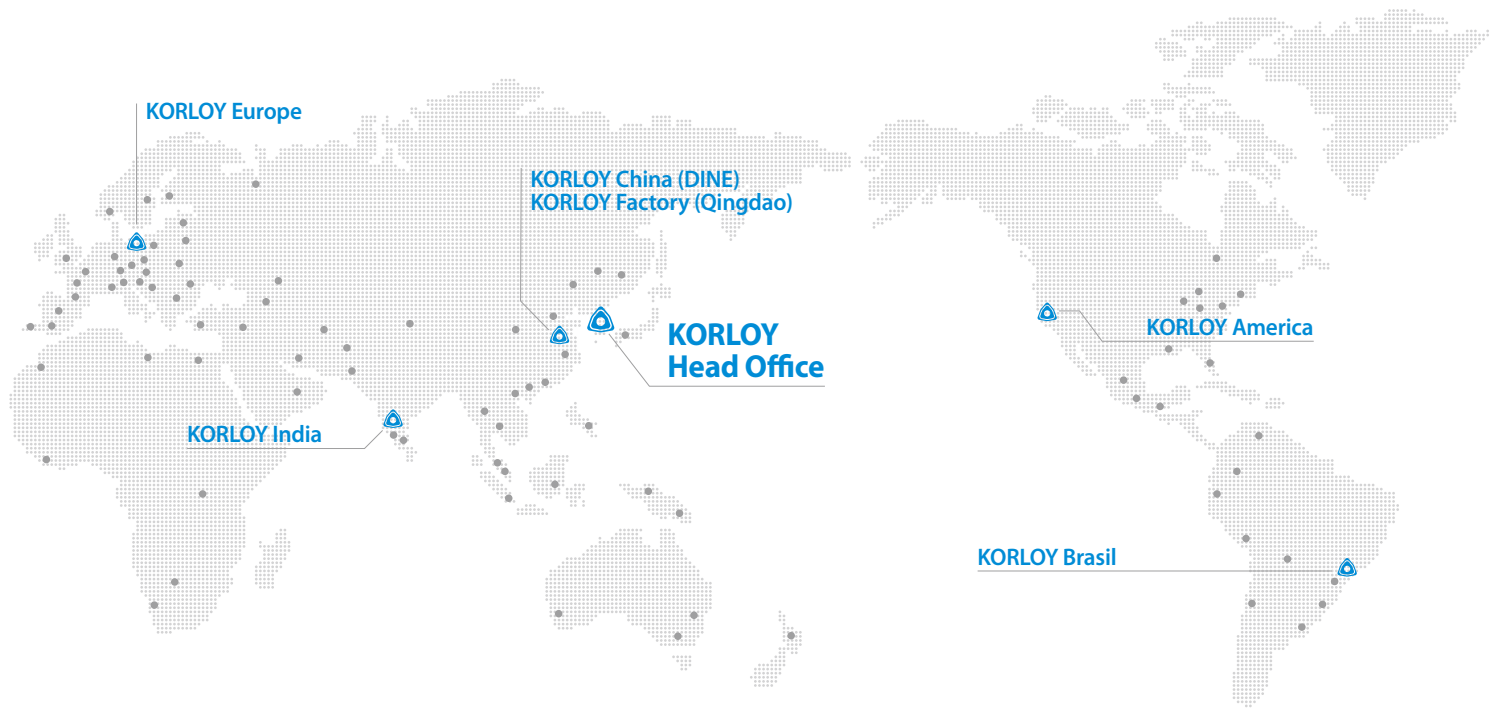


Fig.2

		(inch)						
	Designation	$\varnothing D$	$\varnothing d$	$\varnothing d_1$	$\ell$	L	M	Fig.
MATA	M08-315-S063S-C	0.571	5/8	0.335	3.150	5.906	M08	1
	M08-433-S063S-C	0.571	5/8	0.335	4.331	7.087	M08	1
	M08-590-S063S-C	0.571	5/8	0.335	5.906	9.843	M08	1
	M08-394-S063S-C-590	0.571	5/8	0.335	0.394	5.906	M08	2
	M08-394-S063S-C-708	0.571	5/8	0.335	0.394	7.087	M08	2
	M08-394-S063S-C-984	0.571	5/8	0.335	0.394	9.843	M08	2
	M10-354-S075S-C	0.689	3/4	0.413	3.543	6.693	M10	1
	M10-433-S075S-C	0.689	3/4	0.413	4.331	7.874	M10	1
	M10-689-S075S-C	0.689	3/4	0.413	6.890	11.811	M10	1
	M10-394-S075S-C-669	0.689	3/4	0.413	0.394	6.693	M10	2
	M10-394-S075S-C-787	0.689	3/4	0.413	0.394	7.874	M10	2
	M10-394-S075S-C-1181	0.689	3/4	0.413	0.394	11.811	M10	2
	M12-354-S100S-C	0.906	1	0.492	3.543	6.693	M12	1
	M12-433-S100S-C	0.906	1	0.492	4.331	7.874	M12	1
	M12-689-S100S-C	0.906	1	0.492	6.890	11.811	M12	1
	M12-059-S100S-C-669	0.906	1	0.492	0.591	6.693	M12	2
	M12-059-S100S-C-787	0.906	1	0.492	0.591	7.874	M12	2
	M12-059-S100S-C-1181	0.906	1	0.492	0.591	11.811	M12	2
	M16-354-S125S-C	1.142	1 1/4	0.669	3.543	7.087	M16	1
	M16-472-S125S-C	1.142	1 1/4	0.669	4.824	8.268	M16	1
M16-689-S125S-C	1.142	1 1/4	0.669	6.890	11.811	M16	1	
M16-078-S125S-C-708	1.142	1 1/4	0.669	0.787	7.087	M16	2	
M16-078-S125S-C-826	1.142	1 1/4	0.669	0.787	8.268	M16	2	
M16-078-S125S-C-1181	1.142	1 1/4	0.669	0.787	11.811	M16	2	



#### Head Office

Holystar B/D, 1350, Nambusunhwan-ro, Geumcheon-gu, Seoul, 153-823, Korea  
 Tel : +82-2-522-3181 Fax : +82-2-522-3184, +82-2-3474-4744  
 Web : www.korloy.com E-mail : export@korloy.com

#### Cheongju Factory

55, Sandan-ro, Heungdeok-gu, Cheongju-si,  
 Chungcheongbuk-do, 361-290, Korea  
 Tel : +82-43-262-0141 Fax : +82-43-262-0146

#### Jincheon Factory

54, Gwanghyewonsandan 2-gil, Gwanghyewon-myeon, Jincheon-gun,  
 Chungcheongbuk-do, 365-831, Korea  
 Tel : +82-43-535-0141 Fax : +82-43-535-0144

#### R & D Institute

55, Sandan-ro, Heungdeok-gu, Cheongju-si,  
 Chungcheongbuk-do, 361-290, Korea  
 Tel : +82-43-262-0141 Fax : +82-43-262-0711



Heinrich-Lanz-Allee 12, 60437 Frankfurt am Main, Germany  
 Tel : +49-69-5069-887-0 Fax : +49-69-5069-887-29  
 www.korloyeurope.com E-mail : sales@korloyeurope.com



Ground Floor, Property No. 217, Udyog Vihar Phase 4, Gurgaon 122016, Haryana, INDIA  
 Tel : +91-124-4050030 Fax : +91-124-4050032  
 www.korloyindia.com E-mail : sales.kip@korloy.com



Av. Aruana 280, conj.12, WLC, Alphaville, Barueri, CEP06460-010, SP, Brasil  
 Tel : +55-11-4193-3810  
 E-mail : vendas@korloy.com



Ground Dongjing Road 56 District Free Trade Zone. Qingdao, China  
 Tel : +86-532-86959880 Fax : +86-532-86760651  
 E-mail : kyccpjh@korloy.com



620 Maple Avenue, Torrance, CA 90503, USA  
 Tel : +1-310-782-3800 Toll Free : +1-888-711-0001 Fax : +1-310-782-3885 E-mail : sales@korloy.us  
 www.korloyamerica.com



Head Office



KORLOY Engineering Center



Cheongju  
 Research & Development



Jincheon Factory Office



Jincheon Factory