The Exacta-Set Milling System

exactaform

www.exactaform.com

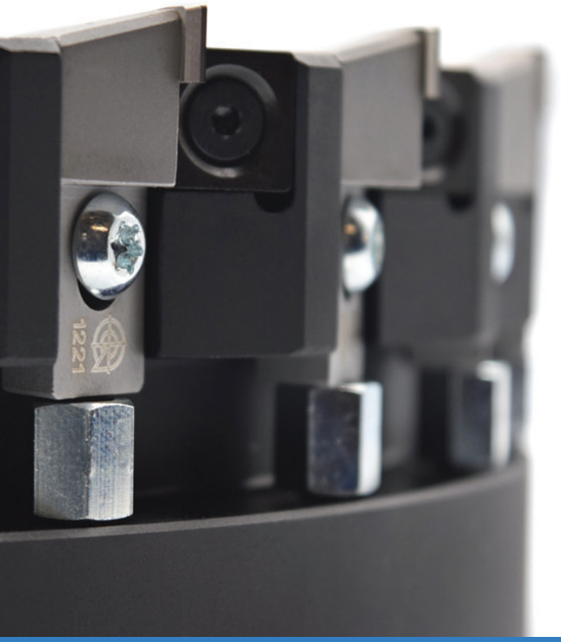
The Exacta-Set Milling System

Advantages

After many years of observing and studying the offerings in the marketplace for PCD milling cutters and with our own experience with monoblock options, we have designed and developed what we believe is the best option that provides a sensible combination of durability, stability, flexibility and simplicity as a platform for cartridge style PCD milling.

We are excited to introduce the Exacta-Set PCD Milling Program exclusively from Exactaform.

We now have the ability to successfully provide all of your tooling needs from start to finish with regard to PCD Milling, PCD Drilling PCD Reaming, PCD Insert Tools and PCD Inserts.



Aluminum Body available for most sizes

- Lightweight - easier on spindle acceleration and deceleration
- Absorbs much of the shock with a machine crash – acts like a fuse
- Anodize hard-coat surface has 70 Rc hardness

Fully Adjustable Axially

- Provides best surface finish for a milling cutter
- Provides best opportunity to longest tool life

Depth of Cut range from 5mm to 13mm

Chip Deflection built into the cutter body to keep cost out of the cartridge

The cutting forces help drive the cartridge into the pocket providing the best stability for the cartridge while in the cut

Five basic cartridge geometries available with multiple nose preparations and wiper configurations to solve most any milling challenge

Ground AND Laser edge options to provide the best quality cut for the application

Simple design

Milling Cutter Program

Imperial Range

PART NO.	SIZE	PILOT Ø	PILOT HEIGHT	KEY WAY WIDTH	SET HEIGHT	COOLANT METHOD	NO. OF STATIONS	BODY MATERIAL
414-50.8.12.7	2.00"	0.50"	0.57"	0.25"	2.00"	Screw	6	Steel
414-63.5.19.05	2.50"	0.75"	0.75"	0.31"	2.00"	Screw	8	Steel
414-76.2.25.4	3.00"	1.00"	0.75"	0.38"	2.00"	Screw	10	Aluminum
414-101.4.31.75	4.00"	1.25"	0.75"	0.50"	2.00"	Screw	12	Aluminum
414-127.0.38.1	5.00"	1.50"	1.00"	0.63"	2.375"	Plate	16	Aluminum
414-152.4.38.1	6.00"	1.50"	1.00"	0.63"	2.375"	Plate	20	Aluminum
414-203.2.63.5	8.00"	2.50"	1.25"	1.00"	2.375"	Plate	24	Aluminum
414-254.0.63.5	10.00"	2.50"	1.25"	1.00"	2.375"	Plate	28	Aluminum
414-304.8.63.5	12.00"	2.50"	1.25"	1.00"	2.375"	Plate	36	Aluminum

Metric Range

PART NO.	SIZE	PILOT Ø	PILOT HEIGHT	KEY WAY WIDTH	SET HEIGHT	COOLANT METHOD	NO. OF STATIONS	BODY MATERIAL
414-50.0.16.0	50mm	16mm	17mm	8mm	50mm	Screw	6	Steel
414-63.0.22.0	63mm	22mm	19mm	10mm	50mm	Screw	8	Steel
414-80.0.27.0	80mm	27mm	21mm	12mm	50mm	Screw	10	Aluminum
414-100.0.32.0	100mm	32mm	24mm	14mm	50mm	Screw	12	Aluminum
414-125.0.40.0	125mm	40mm	27mm	16mm	63mm	Plate	16	Aluminum
414-160.0.40.0	160mm	40mm	27mm	16mm	63mm	Plate	20	Aluminum
414-200.0.60.0	200mm	60mm	40mm	25.4mm	63mm	Plate	24	Aluminum
414-250.0.60.0	250mm	60mm	40mm	25.4mm	63mm	Plate	28	Aluminum
414-300.0.60.0	300mm	60mm	40mm	25.4mm	63mm	Plate	36	Aluminum

Hybrid Range

PART NO.	SIZE	PILOT Ø	PILOT HEIGHT	KEY WAY WIDTH	SET HEIGHT	COOLANT METHOD	NO. OF STATIONS	BODY MATERIAL
414-80.0.25.4	80mm	25.4mm	22mm	9.5mm	50mm	Screw	10	Aluminum
414-100.0.31.75	100mm	31.75mm	30mm	12.7mm	50mm	Screw	12	Aluminum
414-125.0.38.1	125mm	38.1mm	34mm	15.9mm	63mm	Plate	16	Aluminum
414-160.0.38.1	160mm	38.1mm	34mm	15.9mm	63mm	Plate	20	Aluminum

Hardware

PART NO.	SIZE
MHC-001	Adjusting Nut Post – 2.00° or 50mm Set Height Milling Cutter
MHC-002	7mm Hexagon Adjustment Nut
MHC-003	Shim Plate
MHC-004	Shim plate retaining screw M3X8
MHC-005	Cartridge Clamp Screw M4X12
MHC-006	Coolant Plate Machine Screw, M4x30

Exacta-Set Milling Cutter Assembly Adjusting Process

1. **Load** new cartridge into pocket and snug the **Cartridge Mounting Screw** using a T20 Torx Wrench.
2. **Raise the cartridge** using the **7mm Axial Adjusting nut** and a 7mm Open End Wrench to within **0.025mm** (0.0010") of the Final Set Height.
3. **Torque** the **Cartridge Mounting Screw** to 45 in/lbs or 5.0 Nm^2 using a pre-set torque wrench fitted with a T20 Torx bit.
4. **Raise** the cartridge using the **7mm Axial Adjusting Nut** and a 7mm Open End Wrench to the Final Set height for the milling cutter assembly to **+/- 0.003mm** (+/- 0.0001").*

* If the cartridge is adjusting too far above the final set height, loosen the Cartridge Mounting Screw and lower the cartridge to re-start the Milling Cutter Assembly Adjustment Process

Through Coolant Accessories

Imperial Range

MILLING CUTTER SIZE	SHOWER SCREW PART NUMBER	SHOWER PLATE PART NUMBER	SHOWER SCREW THREAD	BODY MATERIAL
2.00″	414-50.8-SS	N/A	1/4 x 28	Steel
2.50″	414-63.5-SS	N/A	3/8 x 24	Steel
3.00″	414-76.2-SS	N/A	1/2 x 20	Steel
4.00″	414-101.4-SS	N/A	5/8 x 18	Steel
5.00″	414-127.0-SS	414-127.0.CP	3/4 x 16	Steel Screw + Aluminum Plate*
6.00″	414.152.4-SS	414-152.4.CP	3/4 x 16	Steel Screw + Aluminum Plate*
8.00″	N/A	414.203.2.CP	N/A	Aluminum
10.00″	N/A	414-254.0.CP	N/A	Aluminum
12.00″	N/A	414-304.8.CP	N/A	Aluminum

Metric Range

MILLING CUTTER SIZE	SHOWER SCREW PART NUMBER	SHOWER PLATE PART NUMBER	SHOWER SCREW THREAD	BODY MATERIAL
50mm	414-50.0-SS	N/A	M8 x 1.25	Steel
63mm	414-63.0-SS	N/A	M10 x 1.5	Steel
80mm	414.80.0-SS	N/A	M12 x 1.75	Steel
100mm	414-100.0-SS	N/A	M16 x 2.0	Steel
125mm	414-125.0-SS	414-125.0.CP	M20 x 2.5	Steel Screw + Aluminum Plate*
160mm	414.160.0-SS	414.160.0.CP	M20 x 2.5	Steel Screw + Aluminum Plate*
200mm	N/A	414.200.0.CP	N/A	Aluminum
250mm	N/A	414-2250.0.CP	N/A	Aluminum
300mm	N/A	414-300.0.CP	N/A	Aluminum

Hybrid Range

MILLING CUTTER SIZE	SHOWER SCREW PART NUMBER	SHOWER PLATE PART NUMBER	SHOWER SCREW THREAD	BODY MATERIAL
80mm	414-80.0-SS	N/A	M12 x 1.75	Steel
100mm	414-100.0-SS	N/A	M16 x 2.0	Steel
125mm	414-125.0-SS	414-125.0.CP	M20 x 2.5	Steel Screw + Aluminum Plate*
160mm	414-160.0-SS	414-125.0.CP	M20 x 2.5	Steel Screw + Aluminum Plate*

* Must use the Shower Screw and the Shower Plate together to function properly.

Application Details

Recommended Cutting Data

MATERIAL	SURFACE SPEED (M/MIN)	SURFACE SPEED (FT/MIN)	FEED PER TOOTH (MM/TOOTH)	FEED PER TOOTH (IN/TOOTH)
AL LESS THAN 8% SILICON CONTENT				
Low (thin Part or fixture issues)	600	1950	0.05 to 0.1	0.002 to 0.004
Starting	1250	4100	0.15 to 2.0	0.006 to 0.008
Progressive	3050	10000	0.15 to 2.0	0.006 to 0.008
AL 8-10% SILICON CONTENT				
Low (thin Part or fixture issues)	600	1950	0.05 to 0.1	0.002 to 0.004
Starting	900	2950	0.15 to 2.0	0.006 to 0.008
Progressive	1850	6050	0.15 to 2.0	0.006 to 0.008
AL GREATER THAN 8% SILICON CONTENT				
Low (thin Part or fixture issues)	300	1000	0.05 to 0.1	0.002 to 0.004
Starting	450	1500	0.15 to 2.0	0.006 to 0.008
Progressive	600	1950	0.15 to 2.0	0.006 to 0.008
COPPER - BRONZE - ZINC				
Low (thin Part or fixture issues)	300	980	0.025 to 0.05	0.001 to 0.002
Starting	450	1500	0.05 to 0.075	0.002 to 0.003
Progressive	750	2460	0.10 to 0.15	0.004 to 0.006
GREEN CARBIDE AND GREEN CERAMIC				
Low (thin Part or fixture issues)	150	490	0.05 to 0.1	0.002 to 0.004
Starting	300	980	0.1 to 0.15	0.004 to 0.006
Progressive	450	1470	0.15 to 0.2	0.006 to 0.008
CARBON FIBER COMPOSITES				
Low (thin Part or fixture issues)	450	1480	0.05 to 0.075	0.002 to 0.003
Starting	750	2450	0.075 to 0.1	0.003 to 0.004
Progressive	1500	4900	0.1 to 0.13	0.004 to 0.05

Component details:
Aluminum Valve Body

Tool used:
Exactaset 8″ to completely cover component

Methodology:
Roughing in one pass one direction
Finishing in one pass opposite direction

Result:
Increased tool life by 400%

Component details:
Hardened Carbon Fiber Brake Rotor

Tool used:
6″ Exactaset milling cutter

Methodology:
0.050: depth of cut one pass
S2500 – F40″/min

Result:
30% increased tool life

exactaform

UK Headquaters
Unit J, 2 Prologis Park
Central Boulevard
Coventry, CV6 4QL

024 7666 5823
sales@exactaform.co.uk

www.exactaform.com

Exactaform Inc.
2044 Business Campus Drive
Murfreesboro, TN 37130

(615) 624-8709
sales.usa@exactaform.com