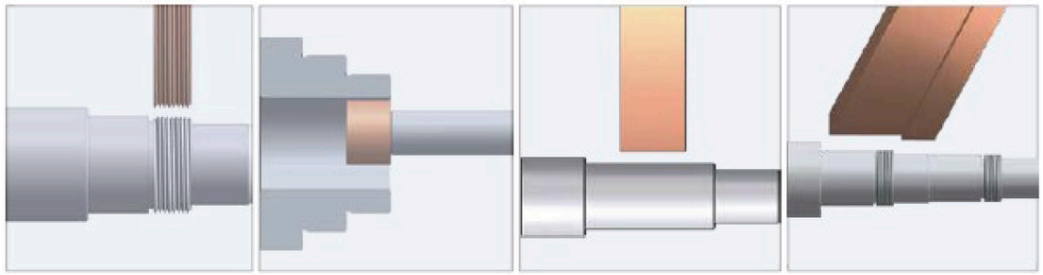
Supertec

Your Source for Grinding Solutions

TURRET TYPE ID/OD GRINDER

PMGII-CNC Series



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Turret Type ID/OD Grinder

PMGII-CNC Series

Features

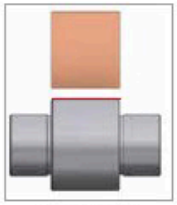
- Taking the leading position of cylindrical grinders in the Taiwan market, we have invested in the design of a ribbed box structure and fully supported table to ensure the integrity of the base rigidity.
- Equipped with i-Grind system and total graphic conversational interface, designed with operator's perspective and the ease of learning, it is not only favored by large amount of users but also enables new user to enter the grinding operation in a very short time.
- The unique design of the B-axis rotary table features high rigidity and positioning accuracy. It is prepared to combined flexible application, meeting the demands of multitask grinding. Unlike other brands, our PMGII series showcases the essential characteristics of a universal cylindrical grinder.

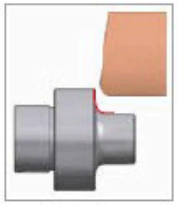
CNC Controller

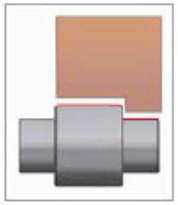
- i-Grind graphic conversational interface, including the function of auto. dressing and compensation.
- Equipped with internal/external straightness offset function.
- X & Z axis with 0.0001mm minimum resolution.
- Data upload and storage function for long-term usage.
- Immediate dressing function to minimize machine setup time.
- Current indicator not only combines with crash control function, but also monitors the changes during the operation and reduces machine setup time.
- Simulate program with MPG before cycle start.
- Large operation panel with 10.4" screen complete grinding cycle with rough, medium, and fine grinding values to increase efficiency and flexibility at the same time.

Standard grinding cycles and multi-steps graphic conversational functions

Wheel T1


Plunge grinding

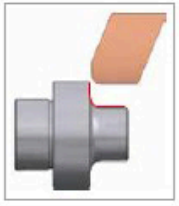

OD + Radius + Face

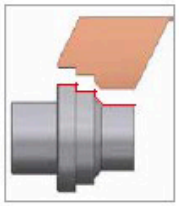

Form grinding


Thread grinding

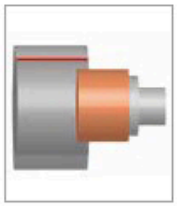
Wheel T2

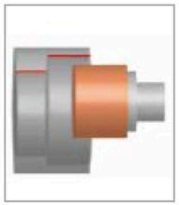

Outer diameter + End face

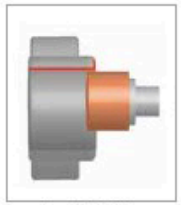

OD + Radius + Face


Form profile grinding

Wheel T3

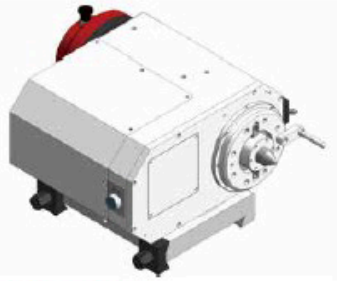

Inner through hole


2 steps straight hole


Inner throgh hole
+ outer end face (gear trip)

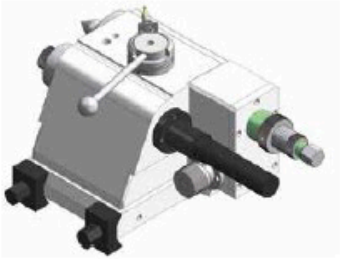

Inner radius grooving

Structure Design



Work Head

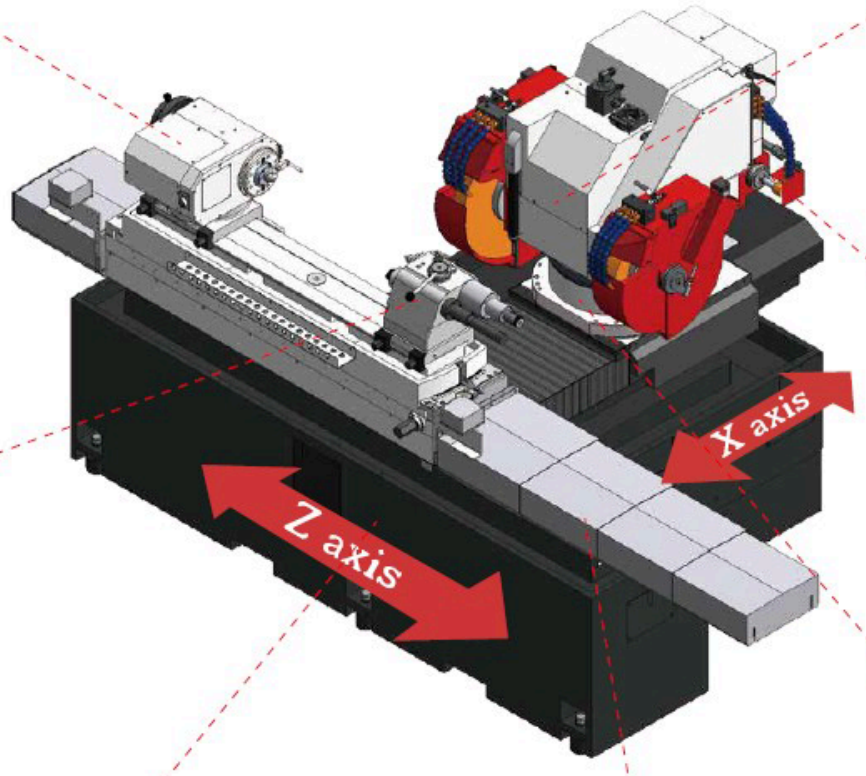
NN bearing designed work spindle offers heavy duty load capacity, optimal rotation accuracy, and high rigidity. The servo motor drive offers stable speed and torque during the grinding operation. It is also provided with a positive air purge system, keeping the grinding debris and coolant out of work head to prolong the workhead longevity.



Tail Stock

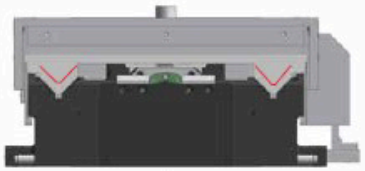
A coolant nozzle is installed on the top of the tailstock for cooling the center tip. An air floating devise allows for smoother movement and protection of the table. It is capable of slightly adjustment and no need to reset dressing zero.

- An optional tailstock quill travel of 50 and 75mm helps to load/unload the workpiece with ease. The quill is oil-bathed to ensure smooth movement.
- An optional tailstock taper adjustment feature allows the operator to easily correct the taper.



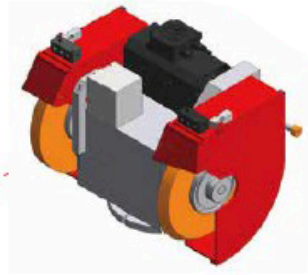
Rigid Machine Base

The machine based is designed with ribbed-box structure which thickness is 25mm, and internalized coolant guide with three outlet. This design provides excellent rigidity and stability of the machine, and also ensure accuracy and quality of grinding.



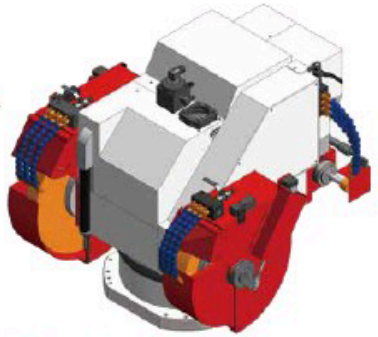
X-axis Guideway

The hand scraped guideway on the X axis is designed specially comparing with other manufacturers. It is made it with a Double V in order to provide a perfect balance and stability on the machine. Moreover, it provides an outstanding perpendicularity with the Z axis in both horizontal and veritcal direction.



Wheel Head

T1 and T2 share the same spindle with NN bearing design, ensuring the best rigidty and accuracy during grinding operation. Additionally, it provides a bigger power output to increase the grinding efficiency. (Standard linear velocity: 45m/sec)



ID Grinding Spindle

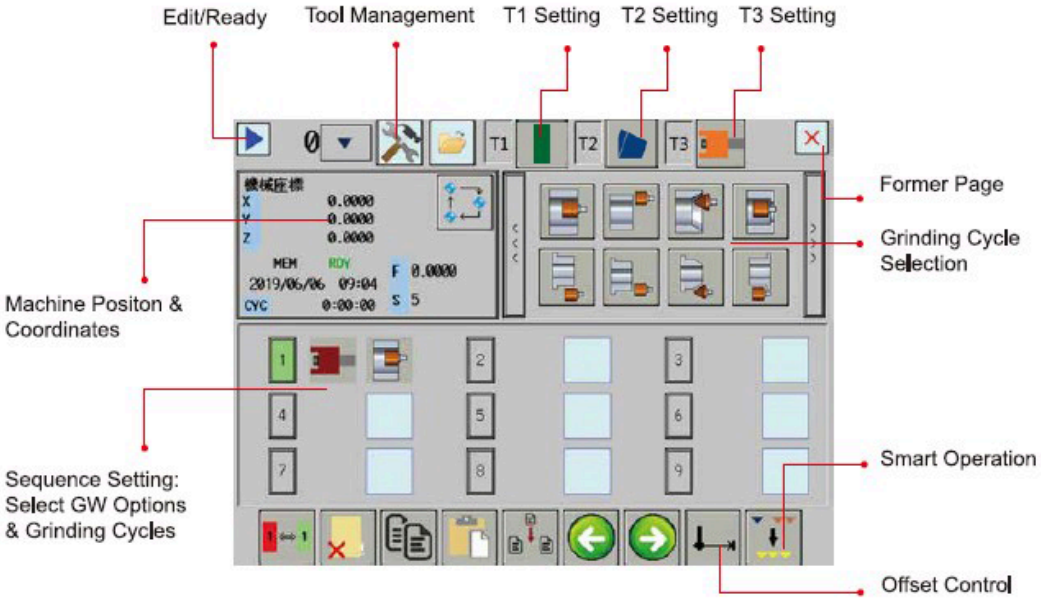
The T3 axis uses a belt-driven internal grinding spindle, which facilitates easier replacement. Driven by a servo motor, it provides constant speed and torque output, enhancing grinding efficiency and quality. Additionally, built-in internal spindle can be equipped as an option.

Rotary Index Table

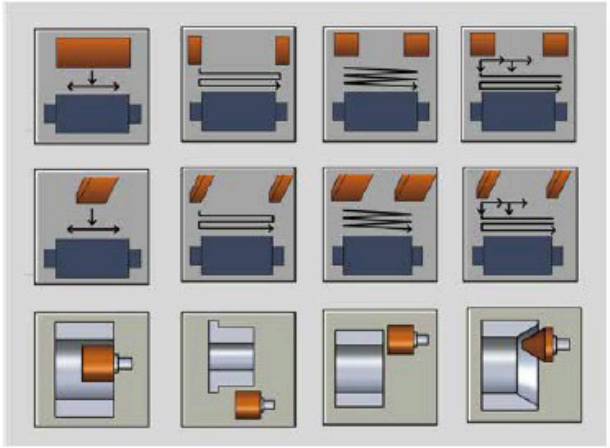
The rotary table is equipped with a direct dive motor and chiller. The high rigidty it performs comes from its bearing that possessed high accuracy on both radial and axial direction. Plus, a high accuracy absolute encoder and powerful braking system, it features outstanding precisenss, high RPM and torque.

iGrind Graphic Conversational Screen

- **Operation set-up through simple graphic display icons for easy learning progress.**

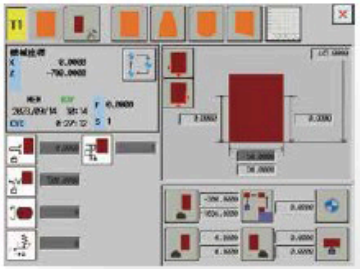


- **Grinding cycle selection**

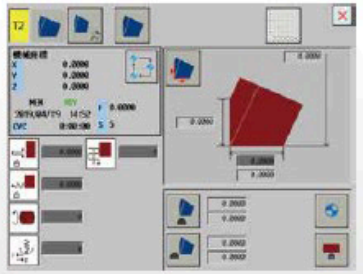


Grinding Wheel Dressing

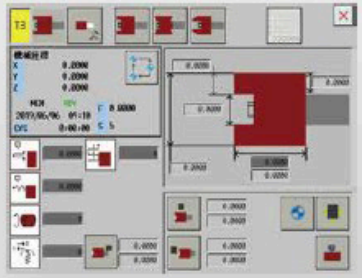
The best advantage in iGrind is that Supertec not only made a wide range of standard forming cycles, but also a free forming software which allows the operators to form the wheel into their own desired shape. It also includes a new wheel forming cycle to provide the best efficiency by reducing its setting and dressing cycle time, and increases the grinding efficiency. The operators are only required to input the wheel specification and geometric data to build up a complete forming cycle.



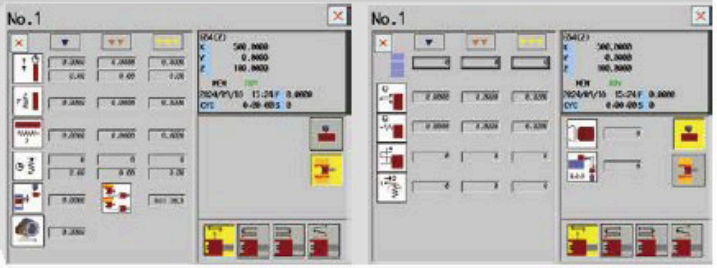
T1 OD wheel parameter setting

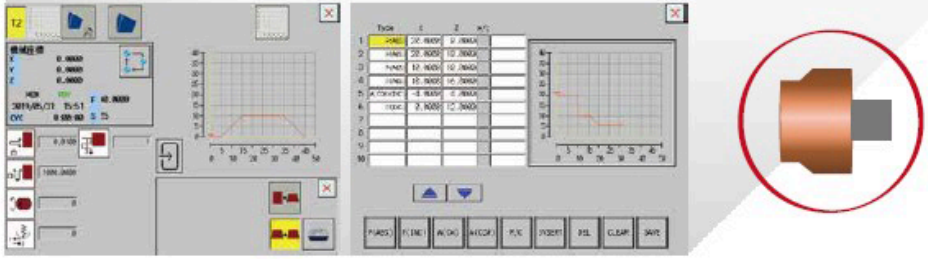


T2 Angular wheel parameter setting



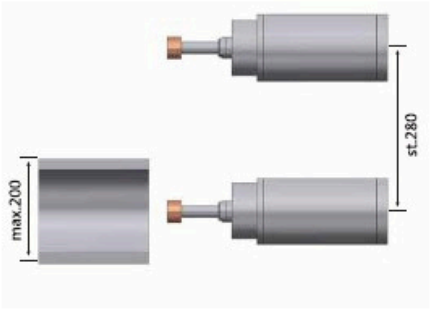
T3 ID wheel parameter setting



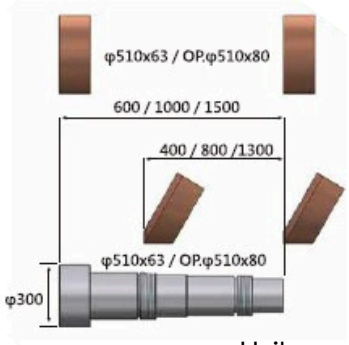


Profile grinding customization

Grinding Range

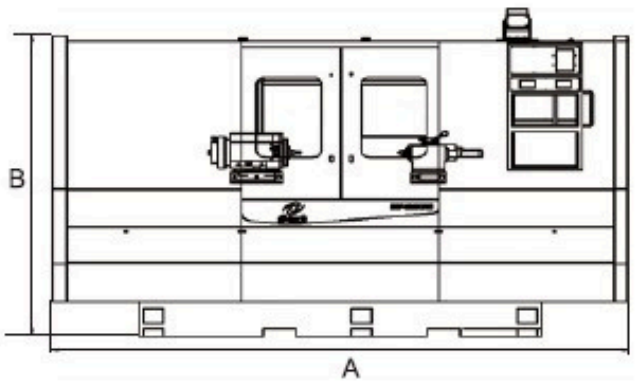


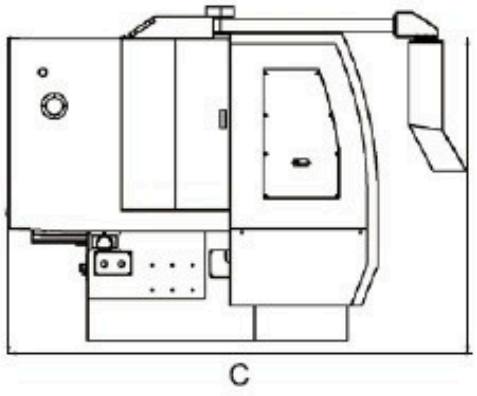
Process ID φ6~φ150mm (Wheel diameter max.60mm)
Max. travel 600mm (Exclude chuck)

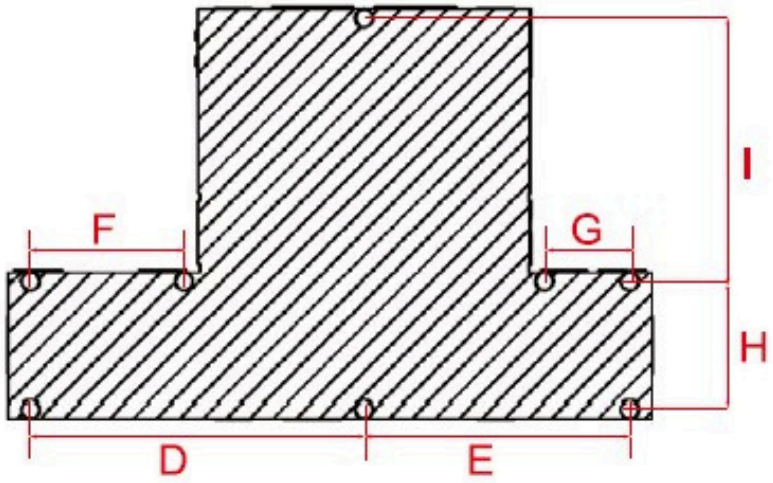


Unit: mm

Measurement







	A	B	C	D	E	F	G	H	I
PMGII-60CNC	3700	1800	2760	1270	1010	585	325	480	1000
PMGII-100CNC	4500	1800	2760	1670	1410	985	725	480	1000
PMGII-150CNC	5804	1800	2760	2270	2010	1585	1325	480	1000

Unit: mm

Specifications

Item \ Machine type		Unit	PMGII-60CNC	PMGII-100CNC	PMGII-150CNC
Grinding	Swing over table	mm(in)	φ380(φ15")		
Capacity	Distance between centers	mm(in)	600(23.6")	1000(39.4")	1500(59")
	Max. Grinding diameter	mm(in)	φ360(φ14.1")		
	Max. load held between center	Kg(lbs.)	150(330)		
	Center distance between spindle & slide table	mm(in)	192(7.5")		
Grinding Wheel	Diameter x Width x Bore Wheel	mm(in)	L φ510x50x φ152.4(φ20"x2"xφ6") R φ405x50x φ152.4(φ16"x2"xφ6")		
	Motor rated power / max. torque	Kw(Hp)/ Nm	7.5(10)/49		
	Wheel speed	rpm	1250(Opt.1650)		
Workhead	Swiveling angle	deg	90		
	Spindle speed (infinite variable)	rpm	10~600		
	Motor rated power	Kw	1.5		
	Center taper	-	MT4(Opt.MT5)		
	Spindle type	-	Fixed or Rotary		
	Diameter of bore	mm(in)	φ26(φ1.023")		
Tailstock	Quill travel	mm(in)	25(1")(Opt.50(2")/75(3"))		
	Cente taper	-	MT4(Opt.MT5)		
X Axis	Travel	mm(in)	280(11")		
	Max. rapid federate	m/min(in /min)	6 (236)		
	Heidenhain linear scale resolution	um(in)	0.05(0.000002")		
	Min. increment	mm(in)	0.0001(0.000004")		
	Servo motor rated power	Kw	1.8(F)/2.2(M)		
Z Axis	Travel	mm(in)	1100(43.3")	1450(57")	2050(80.7")
	Swiveling angle	deg	±9°	±7°	±5°
	Max. rapid federate	m/min(in /min)	8 (315)		
	Min. increment	mm(in)	0.0001(0.000004")		
	Servo motor rated power	Kw	1.8(F)/2.2(M)	1.8(F)/2.2(M)	2.2(F)/3.5(M)
B Axis	Swiveling angle	deg	-30~+210		
	Max. rotation speed	rpm	15		
	Min. increment	deg	1		
	Servo motor rated power	Kw	1.2(F)/1.5(M)		
Motor	Hydraulic pump	Kw(Hp)	0.38(1/2)		
	Guide way lubrication pump	Kw(Hp)	0.2(1/4)		
	Coolant pump	Kw(Hp)	0.2(1/4)		
Machine	Net Weight (semi-enclosed splash guard)	Kg(lbs.)	6500 (14330)	7500 (16534)	8700 (19180)
	Gross Weight	Kg(lbs.)	7000 (15432)	8100 (17857)	9400 (20723)

Note: The manufacturer reserves the right to alter the specification on design and the mechanics thereof to improve machine performance without the need of any previous notice.

Standard Accessories

- Mitsubishi controller (M80) iGrind program
- T1 Plunge type wheel + 6"wheel flange
- T2 Angular type wheel + 6"wheel flange
- T3 Internal std. wheel w/o spindle + quill
- Automatic multiple step wheel speed change
- Infinite variable workhead w/servo motor MT4
- X Axis Renishaw linear scale (resolution 0.05 um)
- B axis rotary index table -30~+210 degree
- Diamond dresser and stand
- Grinding wheel extractor
- Standard coolant tank 140L
- Carbide center tip MT4/C14
- LED working light
- Operating manual and part list
- Standard hydraulic tank (cooling fan)
- Tools and Tool Box
- Electricity cabinet w/ heat exchanger
- Balancing arbor & stand
- 4-color indication signal light

Optional Accessories

- Mitsubishi controller (M80) iGrind conversational program
- including radius / taper / multiple step / form shape dressing
- Mitsubishi controller (M80) iGrind thread grinding program
- Workhead upgrade to MT5
- Tailstock upgrade to MT5
- ID built-in type sipindle 20,000 ~ 40,000 rpm (w/ dressing seat)
- ID built-in type sipindle 40,000 ~ 60,000 rpm (w/ dressing seat)
- Automatic 3-jaw hydraulic chuck
- Manual 3-jaw scroll chuck
- Workpiece carrier
- Workpiece supporting seat, 2pc / set
- 2 Point Steady Rest (Ø20~70mm)
- 2 Point Steady Rest (Ø70~120mm)
- 3-point steady rest (Ø70~120mm)
- 3-point steady rest (Ø120~200mm)
- Diamond roller dressing device (Brand: Taiwanese maker)
- Diamond roller dressing device (Brand: Dr. Kaiser, Germany)
- Coolant system with magnetic separator 80L/min
- Coolant system with paper filter 210L
- Coolant system with magnetic separator 120L/min
- Coolant system with paper filter 260L
- Grinding wheel dynamic balance system
- Gap & crash control device
- BS VM15 Integration system
- (OD gauging+ crash & gap control)
- BS VM25 Integration system
- (OD gauging+ crash & gap control + dynamic balance system)
- Full-enclosure splash guard
- Spare grinding wheel flange 152.4
- Z Axis Renishaw linear scale - 600CNC
- Z Axis Renishaw linear scale - 1000CNC
- Hydraulic tailstock (w/ foot pedal)
- Auto gauging device
- Tailstock micro-taper adjustment
- Oil & mist collecting system
- Touch probe
- Electrical cabinet air conditioner
- Full-Carbide center tip