

HIGH-SPEED JIG GRINDER

# PLANET Series

## Air System



Turns Milling Machine into Jig Grinding Machine, Lathe into Internal Grinding Machine.

### PLANET 400

35,000~45,000 min<sup>-1</sup>



### PLANET 550

50,000~65,000 min<sup>-1</sup>



### PLANET 850

70,000~90,000 min<sup>-1</sup>



### PLANET 2000

180,000~200,000 min<sup>-1</sup>



1
E-max
ROTUS
ESPERT
VIVA-MATE 3
PNEU-SONIC
IMPULSE
PRESTO MIRACLE
SHEENUS
SONIC CUTTER
2
ASTRO-E 500Z
ASTRO-E 800Z
ASTRO-E 2550
ASTRO-E 250
ASTRO-E 6040
3
ASTRO SYSTEM
φ22.8
φ25
φ30
ASTRO SERIES
φ19.05
φ20
φ23
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HIGH OUTPUT
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# "PLANET SERIES" HIGH-SPEED JIG GRINDER

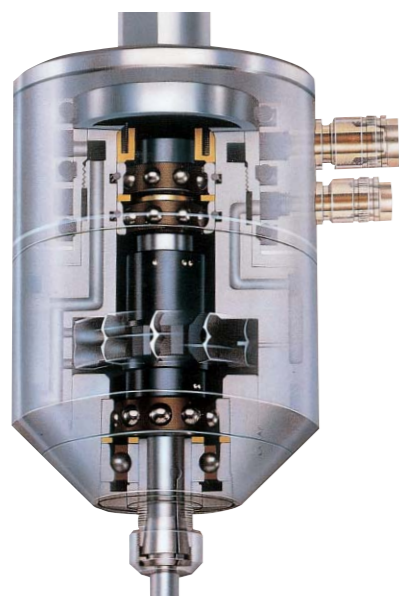
- 4 types of models are available.
- Easily mounted on available boring head.

PLANET 400 : 35,000~ 45,000 min<sup>-1</sup>  
 PLANET 550 : 50,000~ 65,000 min<sup>-1</sup>  
 PLANET 850 : 70,000~ 90,000 min<sup>-1</sup>  
 PLANET 2000 : 180,000~200,000 min<sup>-1</sup>

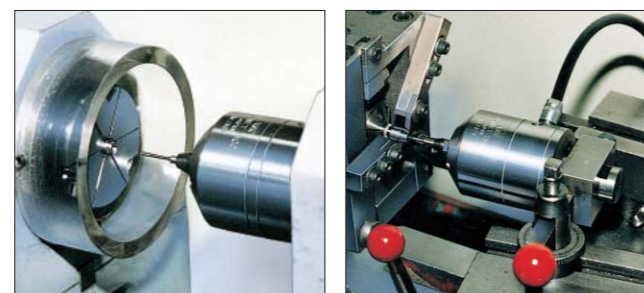
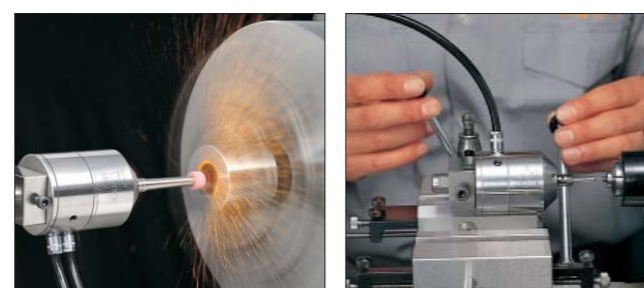
## PLANET Series Features & Examples of Applications

- Energy saving mechanism operated by a compact compressor {Min. 0.4 kw~Max. 3.7 kw (1/2HP~5HP)} with small air consumption.
- The PLANET 550 System has adopted an exhaust air silencer system keeping noise to a minimum.
- Excellent performance for relatively low cost.
- Turns a milling machine, etc. into a jig grinding machine by simply attaching a boring head obtained in the market and PLANET Series.
- If mounted on a lathe, this grinder can be used as a precision internal grinder.
- Can be used for the high-speed rotating portions of various kinds of specialized machine.
- By changing the chucks, tools in the market can be used. Standard size chucks are  $\phi 1.6$ ,  $\phi 2.35$ ,  $\phi 3.0$ ,  $\phi 3.175$ ,  $\phi 6.0$ ,  $\phi 6.35$  mm. Optional size chucks are also available.
- The chuck is replaceable.

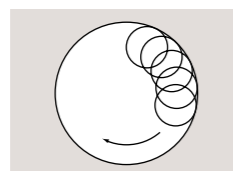
**Built-in special high speed ball bearing withstands long continuous operation.**  
 Ultra-precision special ball bearing accomplished by many years of joint study between NSK and ball bearing manufacturers.



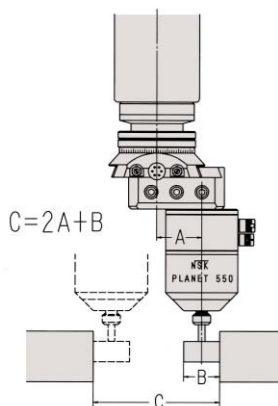
Typical application example of precision machining finish after hardening.



► General Application of PLANET Series  
 Remove the boring bite from a general micro boring head and replace with PLANET grinder.



2A (amount of eccentricity) + B (grindstone diameter)  
 = C (hole diameter)

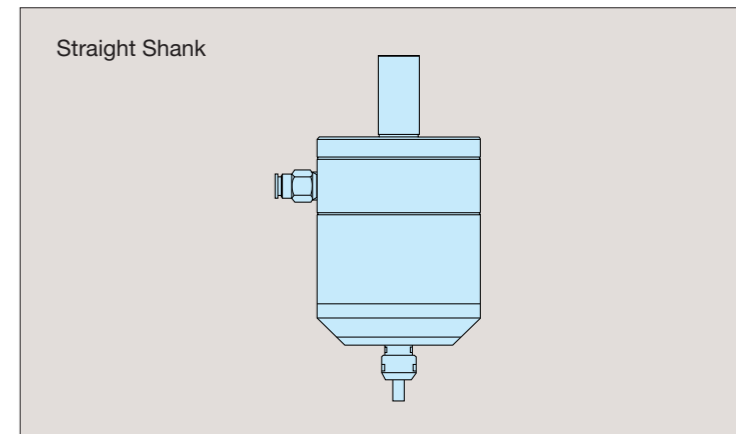


# "PLANET 400" HIGH-SPEED JIG GRINDER

- Motor Speed is 35,000~45,000 min<sup>-1</sup>
- Shank type is provided only straight.
- Use with compact compressor (3.7 kw)
- Make possible for grinding from small diameter hole to a large diameter hole more than  $\phi 6 \sim \phi 70$  mm.

## PLANET 400

35,000~45,000 min<sup>-1</sup>



### Processable Range

Processable Diameter	$\phi 6 \sim \phi 70$ mm
Processable Depth	60 mm
Max. Grindstone Diameter	$\phi 20$ mm

### Specifications

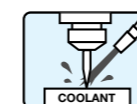
Speed	35,000~45,000 min <sup>-1</sup>
Proper Air Pressure	0.3MPa~0.5MPa
Air Consumption	300NL/min (0.5MPa)
Weight	3 kg
Hose	Inlet Air $\phi 6.0$ mm (O.D.) · 2 m

### PLANET 400

CAT. No.	Shank	Model
1171	$\phi 20 \times 40$ mm	PL400-M2040

### Standard Equipment · Accessories

- Collet Chuck  $\phi 6.0$  mm (CHK-6.0),  $\phi 3.0$  mm (CHK-3.0) : 1 pc. each
  - Chuck Nut (K-265) : 1 pc.
  - Inlet Air Hose (K-215) :  $\phi 6$  mm x 2 m
  - Anti-swivel Bar
  - Spanner (12 x 14) : 2 pcs.
- < Optional >
- Collet Chuck (CHK-□□)  $\phi 0.5$  mm~ $\phi 6.0$  mm in 0.1 mm increments and  $\phi 2.35$ ,  $\phi 3.175$ ,  $\phi 6.35$  mm
  - Chuck Nut (K-265)



PLANET Series can be used in conjunction with water or oil based coolants.

# "PLANET 550" HIGH-SPEED JIG GRINDER

- Motor Speed is 50,000~65,000 min<sup>-1</sup>
- Shank type is provided only straight.
- Use with compact compressor (2.2 kw)
- Best for the internal grinding of small diameter (ø3~ø70 mm)

## PLANET 550

50,000~65,000 min<sup>-1</sup>



- Mount on boring head available from market.
- Most suitable for deep hole grinding. Capable of grinding up to a depth of 60 mm with a bore of ø14 mm or more.
- Most suitable for jig grinding by mounting on a boring head due to minimum rotary ring resistance.
- Capable of grinding min. bore of ø3.0 mm to Max. ø70 mm.
- Usable with a compact compressor of 3HP output.
- Low noise level due to exhaust air recovery.
- Collet Chuck : Standard size ø6.0 mm (CH5-6.0), ø3.0 mm (CH5-3.0)
- Special size (CH5-□□) : ø2.35, ø3.175, ø6.35 mm, ø0.3~ø6.0 mm (in 0.1 mm increments)
- Special Grindstone Axis for Slot : 42 mm, 52 mm, 62 mm
- Simple replacement of chuck and grindstone axis.

### Processable Range

Processable Diameter	ø3~ø70 mm
Processable Depth	60 mm
Max. Grindstone Diameter	ø16 mm

### Specifications

Speed	50,000~65,000 min <sup>-1</sup>
Proper Air Pressure	0.3MPa~0.5MPa
Air Consumption	235NL/min (0.5MPa)
Weight	1,640 g
Hose	Inlet Air ø7.0 mm (O.D.) · 2 m Exhaust Air ø8.0 mm (O.D.) · 1 m

### PLANET 550

CAT. No.	Shank (øD x L)	Model
1257	ø18 x 27 mm	PL550-M1827
1258	ø20 x 40 mm	PL550-M2040

### Standard Equipment · Accessories

- Collet Chuck ø6.0 mm (CH5-6.0), ø3.0 mm (CH5-3.0) : 1 pc. each
- Chuck Nut (K-218) : 1 pc. ● Inlet Air Hose (K-257) : ø7 mm x 2 m
- Exhaust Air Hose (K-258) : ø8 mm x 1 m
- Grindstone with Axis (ø6.0 mm) : 5 pcs.
- Replacement Grindstone ø16 mm (PG-03), ø12 mm (PG-01) : 5 pcs. each
- Anti-swivel Bar ● Pin Spanner (K-222) : 1 pc. ● Spanner (10 x 10) : 1 pc.
- Grindstone Axis (PV-70) : 1 pc. ● Filter Joint (FJ-03)
- < Optional >
- Collet Chuck (CH5-□□) ø0.3 mm~ø6.0 mm in 0.1 mm increments and ø2.35, ø3.175, ø6.35 mm
- Chuck Nut (K-218) ● Special Grindstone Axis for Slot (AX42, AX52, AX62)

# "PLANET 850" HIGH-SPEED JIG GRINDER

- Motor Speed is 70,000~90,000 min<sup>-1</sup>
- Shank type is provided only straight.
- Use with compact compressor (1.47 kw)
- Best for the internal grinding of small diameter (ø2~ø30 mm)

## PLANET 850

70,000~90,000 min<sup>-1</sup>



- Suitable for internal grinding jig borer, jig milling machine and lathe.
- Use with compact compressor (1.47 kw)
- Collet Chuck : Standard size ø3.0 mm (CHA-3.0).  
Special size ø0.5~ø4.0 mm (Optional)

### Processable Range

Processable Diameter	ø2~ø30 mm
Processable Depth	20 mm
Max. Grindstone Diameter	ø7.0 mm (with ø3.0 mm mounted wheel)

### Specifications

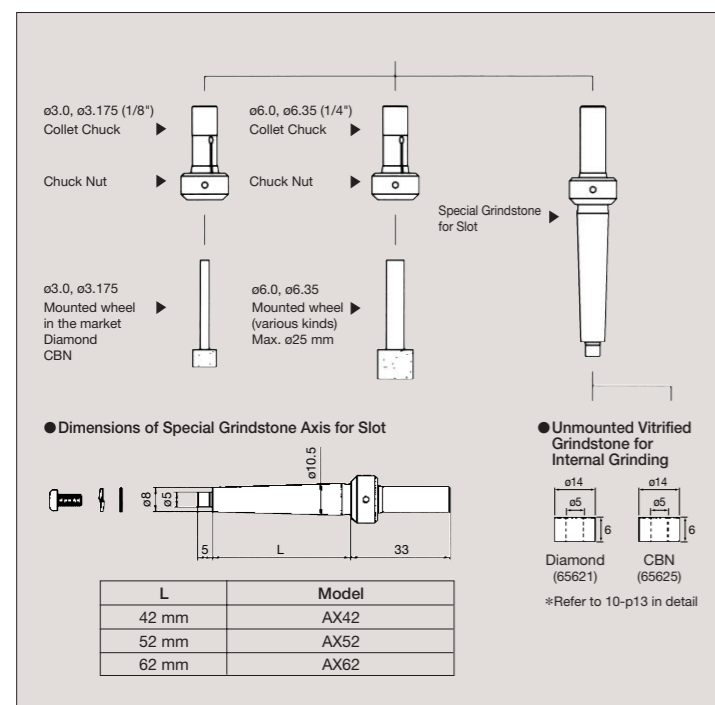
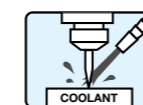
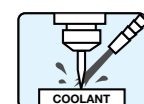
Speed	70,000~90,000 min <sup>-1</sup>
Proper Air Pressure	0.3MPa~0.5MPa
Air Consumption	150NL/min (0.5MPa)
Weight	1,230 g
Hose	Inlet Air ø6.0 mm (O.D.) · 2 m

### PLANET 850

CAT. No.	Shank (øD x L)	Model
1193	ø18 x 27 mm	PL850-M1827
1194	ø20 x 40 mm	PL850-M2040

### Standard Equipment · Accessories

- Collet Chuck ø3.0 mm (CHA-3.0) : 1 pc. ● Chuck Nut (K-263) : 1 pc. ● Grindstone with Axis (ø3.0 mm) : 6 pcs.
- Inlet Air Hose (K-259) : ø6 mm x 2 m ● Anti-swivel Bar ● Spanner (10 x 10), (8 x 5) : 1 pc. each ● Filter Joint (FJ-01)
- < Optional >
- Collet Chuck (CHA-□□) ø0.5 mm~ø4.0 mm in 0.1 mm increments and ø2.35, ø3.175 mm ● Chuck Nut (K-263)



# "PLANET 2000" HIGH-SPEED JIG GRINDER & SPECIAL AXIS

- Mount on boring head available from market.
- Energy saving mechanism usable with a compact air compressor of 0.4 kw (1/2HP)
- Suitable for internal grinding of extremely small hole ( $\phi 0.5$  mm or over), ceramic, cemented carbide alloy, etc. due to the super high-speed rotation. ● Chuck diameter :  $\phi 1.6$  mm
- As tip tools, mounted wheel of  $\phi 1.6$  mm, diamond, CBN and special tools can be used.

## PLANET 2000

180,000~200,000 min<sup>-1</sup>



### Processable Range

Processable Diameter	$\phi 0.5$ ~ $\phi 5.0$ mm
Processable Depth	8.0 mm
Max. Grindstone Diameter	$\phi 2.0$ mm

### Specifications

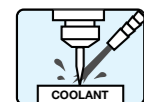
Speed	180,000~200,000 min <sup>-1</sup>
Proper Air Pressure	0.2MPa~0.3MPa
Air Consumption	45NL/min (0.3MPa)
Weight	200 g
Hose	Inlet Air $\phi 6$ mm (O.D.) · 2 m

### PLANET 2000

CAT. No.	Shank	Model
1275	$\phi 12$ mm	PL2000-M1227

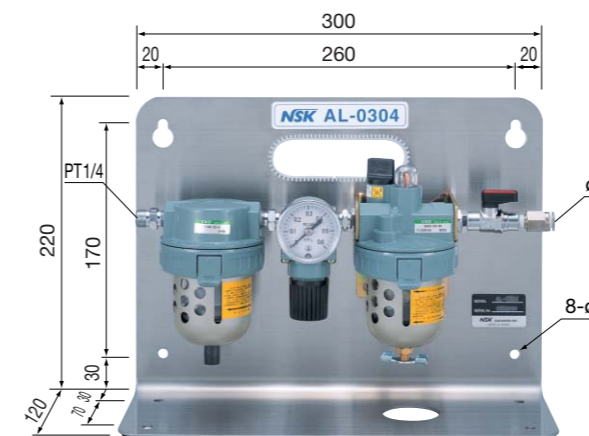
### Standard Equipment · Accessories

- Collet Chuck  $\phi 1.6$  mm (CH20-1.6) : 1 pc. ● Grindstone Axis for Special Purpose ( $\phi 1.0$  mm,  $\phi 1.4$  mm) : 1 pc. each ● Grindstone with Axis ( $\phi 1.6$  mm) : 3 pcs. ● Inlet Air Hose (K-259) :  $\phi 6$  mm x 2 m
- Anti-swivel Bar ● Spanner (K-220) : 1 pc. ● Filter Joint (FJ-01)



# "PLANET SERIES" AIR LINE KIT & OIL

## CAT. No. 1542 AIR LINE KIT AL-0304



- The AL-0304 is a system supplying oil to the motor side automatically by regulating the air pressure. However, in some cases the filter of AL-0304 may not provide sufficient filter effects, and it is recommended to install either an air dryer or a large air filter between the compressor and AL-0304.

### Air Line Kit (For $\phi 6$ mm, $\phi 8$ mm Hose · Filter Mesh 0.3 $\mu$ m)

CAT. No.	Model	Standard Equipment · Accessories
1542	AL-0304	<ul style="list-style-type: none"> <li>● Air Filter ● Air Regulator</li> <li>● Air Pressure Gauge ● Lubricator</li> <li>● Air ON-OFF Valve</li> <li>● Hose for Piping (K-260) : 2 m</li> <li>● Lubricating Oil (K-211) : 1 pc. ● Reducer</li> </ul>

\* Reducer ( $\phi 8$  -  $\phi 6$  mm Adaptor) is provided.

## LUBRICATING OIL

- Use ISO VG15 Liquid Paraffin (Shell Ongina oil #15) for lubricator.

### Lubricating Oil (70 cc)

CAT. No.	Model	Product
1057	K-211	

### Lubricating Oil (1L)

CAT. No.	Model	Product
1058	K-202	

## Special Axis for PLANET 2000

### ● CBN Coated (1 pc./pack)

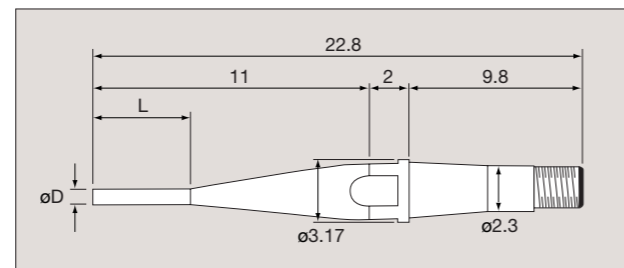
CAT. No.	Model	L (mm)	$\phi D$ (mm)	#
65501	BY-04	4	0.5	600
65502	BY-06	4	0.73	325~400
65503	BY-08	5	0.96	230~270
65504	BY-10	6	1.3	140~170
65505	BY-12	7	1.5	140~170
65506	BY-14	8	1.7	140~170
65507	BY-16	9	1.9	140~170
65508	BY-18	10	2.1	140~170
65509	BY-20	10	2.3	140~170

### ● Electroplated Diamond Coated (1 pc./pack)

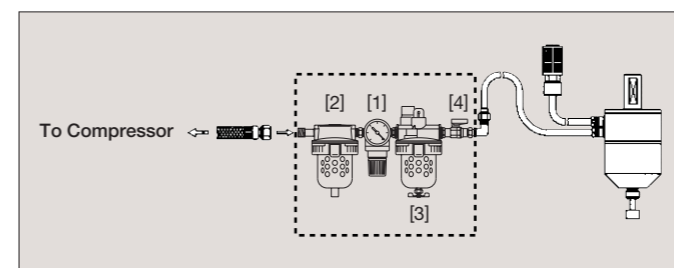
CAT. No.	Model	L (mm)	$\phi D$ (mm)	#
65511	PY-4D	4	0.5	600
65512	PY-6D	4	0.73	325~400
65513	PY-8D	5	0.96	230~270
65514	PY-10D	6	1.3	140~170
65515	PY-12D	7	1.5	140~170
65516	PY-14D	8	1.7	140~170
65517	PY-16D	9	1.9	140~170
65518	PY-18D	10	2.1	140~170
65519	PY-20D	10	2.3	140~170

### ● Blank (5 pcs./pack)

CAT. No.	Model	L (mm)	$\phi D$ (mm)	#
65521	PY-4L	4	0.4	---
65522	PY-6L	4	0.6	---
65523	PY-8L	5	0.8	---
65524	PY-10L	6	1.0	---
65525	PY-12L	7	1.2	---
65526	PY-14L	8	1.4	---
65527	PY-16L	9	1.6	---
65528	PY-18L	10	1.8	---
65529	PY-20L	10	2.0	---



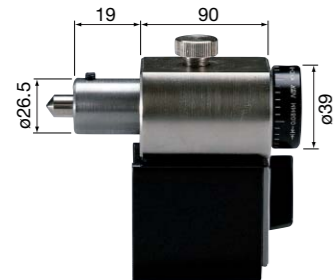
## PLANET Air System



"PLANET air line kit system" is a mechanism that allows a smooth operation of a high-speed grinder for long hours. By a simple connection to a compressor, stable air is provided through the air regulator [1] and the rotating speed is adjustable as desired. Moreover, it provides filter effects with the air filter [2], automatically lubricates air tool with the lubricator [3], and turns rotation ON/OFF with the switch [4].

● "SHIN-SENSOR SS-200" enables accurate measurements with a simple operation.

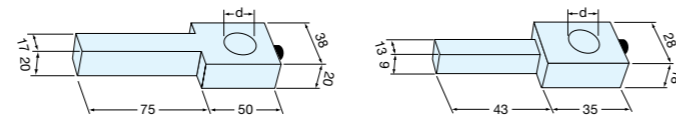
## CAT. No. 1252 DRESSING UNIT



## LATHE HOLDER



● A special holder is required for internal and end face grinding finish with a lathe.



### For General Lathe

CAT. No.	d	Model
1843	φ14 mm	HM-14
1844	φ16 mm	HM-16
1845	φ18 mm	HM-18
1847	φ20 mm	HM-20

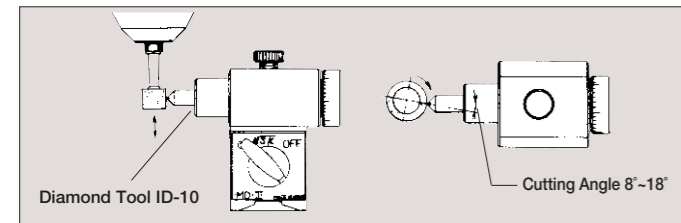
### For Bench Lathe

CAT. No.	d	Model
1860	φ12 mm	HS-12
1862	φ14 mm	HS-14
1863	φ16 mm	HS-16
1864	φ18 mm	HS-18

### Procedures for Grindstone Dressing

Clamp the turning spindle of the milling machine, etc. and fix the adjustable dresser near the grindstone (see drawing). Turn the knob to move the diamond forward to cut (0.03 mm per graduation) and slowly move the grindstone up and down.

\* As precaution for the dressing, start dressing at a low speed in the beginning (air pressure 0.15~0.25MPa or so), and finish with a high-speed rotation.



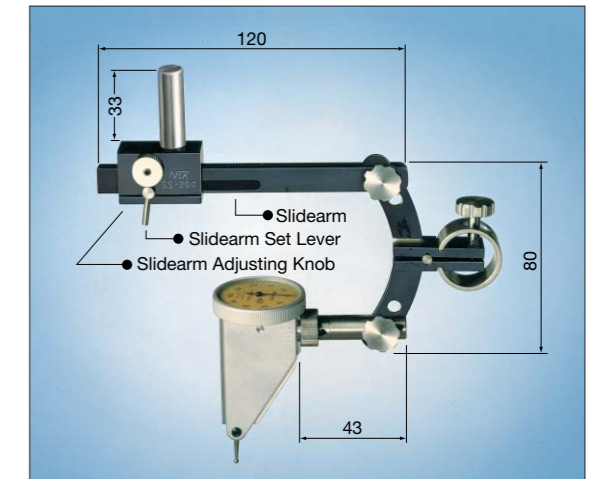
CAT. No.	Accessories
1252	KMD-8 Adjustable Infeed Dressing Unit (Diamond Dresser : Optional) Refer to 10-p17

## Natural Diamond Single Stone Dresser (for KMD-8 Adjustable Infeed Dressing Unit)

Product	Description	CAT. No.	Model	Carat	External Diameter (mm)
	Natural Diamond Single Stone Dresser	57551	—	1/4 (0.25ct)	φ75
		57552	—	1/2 (0.5ct)	φ150~φ200
		57553	—	3/4 (0.75ct)	φ255~φ300
		57554	—	1ct	φ300~φ355

## Features & Application Examples

- Precision and lightweight construction enables easy handling and accurate measurement with a simple operation.
- Measurements of small to large diameters, as well as circumference can be made by turning the knob on slide arm.
- Simple system allows clamping of slidearm adjusting knob at any point on the slidearm.
- The final adjustment is made by adjusting the probe shown on the dial gauge to the ideal position with the fine adjustment screw.
- Vertical type dial gauge enables the viewing from any position for accurate measurement and ensures high workability.



### Specifications

Weight	Shank Diameter	Measuring Range	Minimum Scale
320 g	φ10 mm	Outside Diameter φ0.1~φ300 mm Inside Diameter φ3~φ300 mm	0.002 mm (2 μm)

CAT. No.	Model	Main Features · Specifications · Accessories
1249	SS-200	<ul style="list-style-type: none"> <li>● Accurate measurement with high precision, lightweight and simple operation</li> <li>● Shank Diameter : φ10 mm</li> <li>● Outside Diameter of Measuring Range : φ0.1~φ300 mm</li> <li>● Inside Diameter : φ3~φ300 mm</li> <li>● Dial Indicator : 0~0.2</li> <li>● Minimum Scale : 0.002 mm</li> <li>● Weight : 320 g</li> <li>● * With Dial Gauge</li> </ul>