



# KCG Series

## Centerless Grinder



KCG-12 | KCG-18S | KCG-20S | KCG-24S

# KCG-12S

## Quick Overview

Diameter Grinding Capacity:	0.04"-1"
Grinding Wheel Size:	12" x 6" x 5"
Regulating Wheel Size:	8" x 6" x 3.5"
Main Grinding Wheel Motor:	7.5 hp
Compact Design	Spindle Oil Circulation
Hydrostatic Bearings	Auto Lubrication with Saftey Interlock
Sem-Hydrualic Float Bearings	Hydraulic Dresser for Grinding and
Slide Device	Regulating Wheels



# KCG-18S

## Quick Overview

Diameter Grinding Capacity:	0.04"-1"
Grinding Wheel Size:	18" x 8" x 9"
Regulating Wheel Size:	10" x 8" x 4"
Main Grinding Wheel Motor:	15 hp
Compact Design	Spindle Oil Circulation
Hydrostatic Bearings	Auto Lubrication with Saftey Interlock
Sem-Hydrualic Float Bearings	Hydraulic Dresser for Grinding and
Slide Device	Regulating Wheels

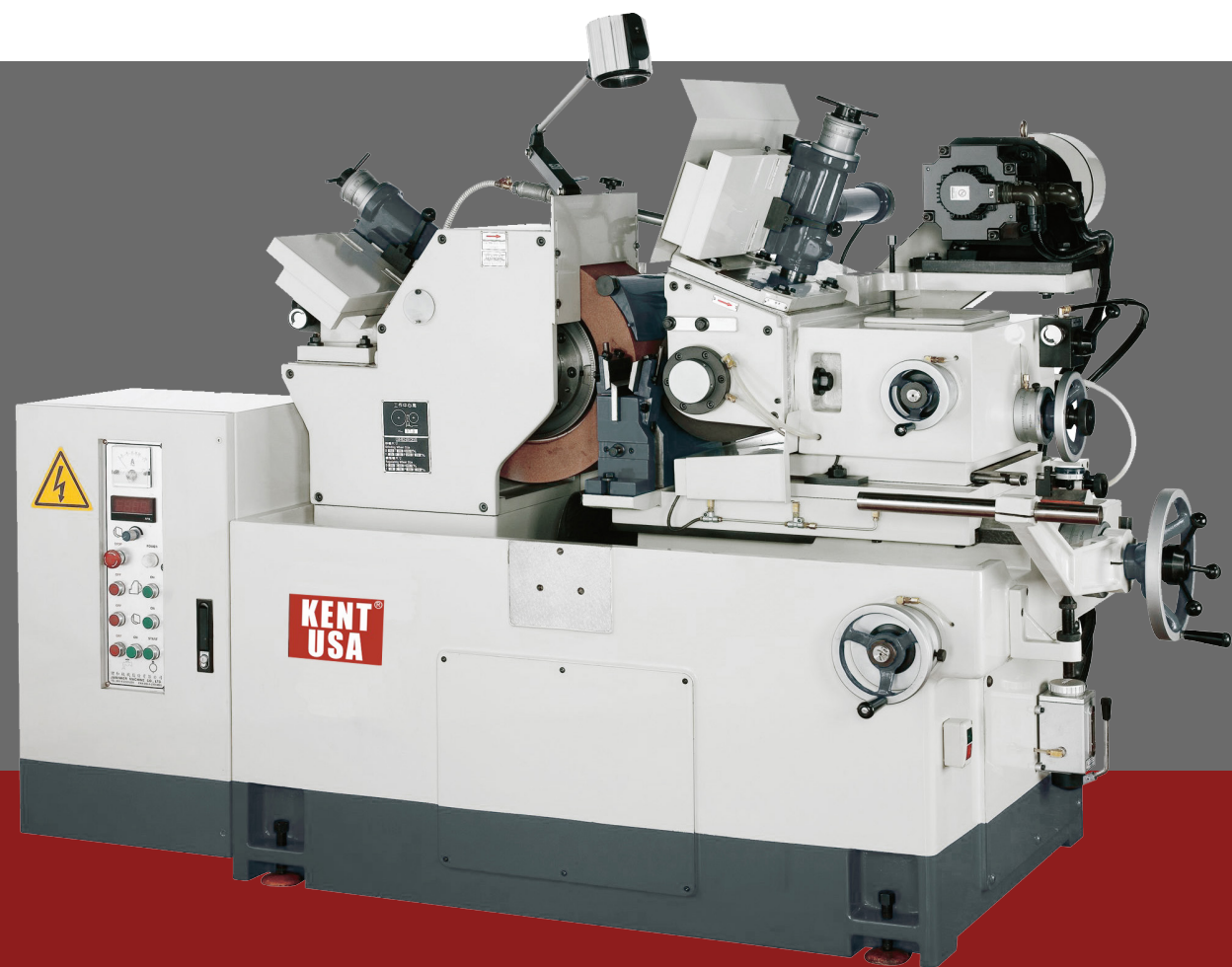




# KCG-20S

## Quick Overview

Diameter Grinding Capacity:	0.04"-1"
Grinding Wheel Size:	20" x 8" x 12"
Regulating Wheel Size:	12" x 8" x 5"
Main Grinding Wheel Motor:	20 hp
Compact Design	Spindle Oil Circulation
Hydrostatic Bearings	Auto Lubrication with Saftey Interlock
Sem-Hydrualic Float Bearings	Hydraulic Dresser for Grinding and
Slide Device	Regulating Wheels



# KCG-24S

## Quick Overview

Diameter Grinding Capacity:	2"-6"
Grinding Wheel Size:	24" x 12" x 12"
Regulating Wheel Size:	12" x 12" x 5"
Main Grinding Wheel Motor:	25 hp (Opt: 30 hp)
Compact Design	Spindle Oil Circulation
Hydrostatic Bearings	Auto Lubrication with Saftey Interlock
Sem-Hydrualic Float Bearings	Hydraulic Dresser for Grinding and
Slide Device	Regulating Wheels



# Features

## Grinding Wheel Spindle

The Grinding Wheel Spindle runs on hydrostatic bearings with a high pressure oil film for added precision under heavy loads. It substantially reduces wear while prolonging spindle trueness. SNCM-210H carbon steel hardened beyond HRC60 yields high torsion resistance.

## Hydrostatic Bearing

These grinders are equipped with hydrostatic bearings to substantially decrease heat deformation. This aids with extending tool life under heavy cut loads.

## Semi-Hydraulic Float Bearings

These bearings are made of SNCM-220H Ni-Cr-Mo alloy steel and case-hardened, carbonized, then computerize sub-zero degree treated to surface hardness over HRC 62 at 0.04” depth. Core hardness is kept at about HRC 25-30 to ensure consistency of high precision grinding operation. Spindles that withstand high torsion have a longer and lasting life. They are made of KJ-4 alloy bushing with a three point hydraulic cycle system. The Semi-Hydraulic Float Spindle is protected by an oil membrane which results in minimal contract friction. This device is specially designed for high speed and heavy load operations.

## Regulating Wheel Drive

These grinders are equipped with a Variable Vane Type Oil Pump for the hydraulic dressing and to enforced spindle oil circulation. The oil tank is located outside of the machine for easy maintenance. Two filter layers plus a pressure regulator ensure the cleanliness of spindle oil and the consistency of oil film thickness. This extends the service life of the wheel spindle and the steadiness of accuracy.



# Accessories

## Standard Accessories

- |   |                              |
|---|------------------------------|
| 1. Grinding Wheel and Wheel Flange              | 7. Diamond Tool              |
| 2. Regulating Wheel and Regulating Wheel Flange | 8. Thrufeed Safety Device    |
| 3. Thrufeed Standard Workrest and blade         | 9. Flange Extractor          |
| 4. Infeed Standard Workrest and blade           | 10. Leveling Screws and Pads |
| 5. Tool box with Tools                          | 11. Thrufeed Process Gauge   |
| 6. Work Lamp                                    |                              |

## Optional Accessories

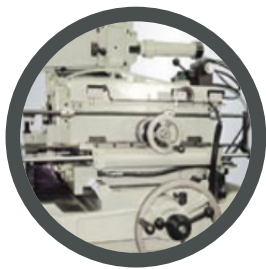
- |   |   |
|---|---|
| 1. Magnetic Separator                           | 12. Auto Infeed Forming Grinding              |
| 2. Paper Filter Coolant                         | 13. Wheel Balancing Arbor                     |
| 3. Hydrocyclone Coolant Filtering Unit          | 14. Wheel Balancing Base                      |
| 4. Work Ejector Device                          | 15. Non-Contract O.D. Measuring System        |
| 5. Forming Dressing Device                      | 16. Grinding Wheel Automatic Balancing System |
| 6. Long V-shaped Support                        | 17. Oil Cooler                                |
| 7. Manual Parts Feeder for Infeed Grinding      | 18. Rotary Type Grinding Wheel Dressing       |
| 8. Automatic Receiver for Thrufeed Grinding     | 19. Jib Crane & Hook for Grinding Wheel       |
| 9. Automatic Thrufeed Device                    | 20. Grinding Balancer for wheels              |
| 10. Vibratory Parts Feeder/Straight Line Feeder | 21. Oil Mist/Vapour Receiver                  |
| 11. Auto Thrufeed Taper Grinding Device         |   |



Automatic Grinding  
Wheel Balancing System



Rotary Type Grinding  
Wheel Dressing Attachment



Automatic Thrufeed  
Taper Grinding Device

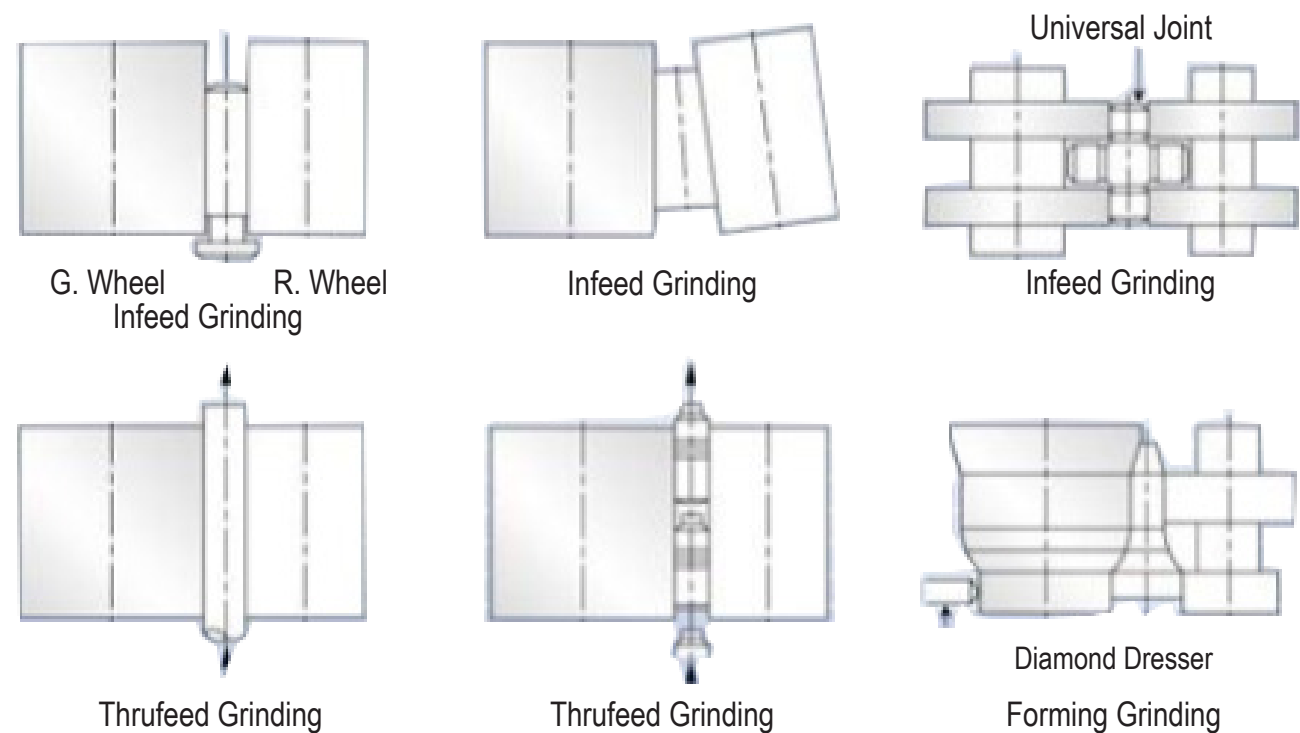


Automatic Infeed  
Forming Grinding



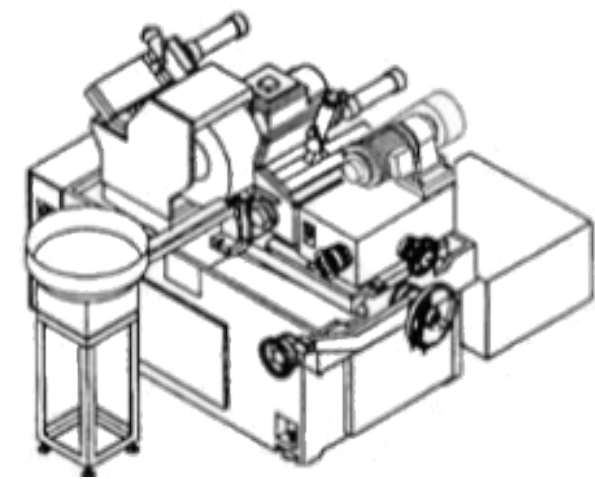
# Operation Applications

## Grinding Approach



## Grinding Accuracy

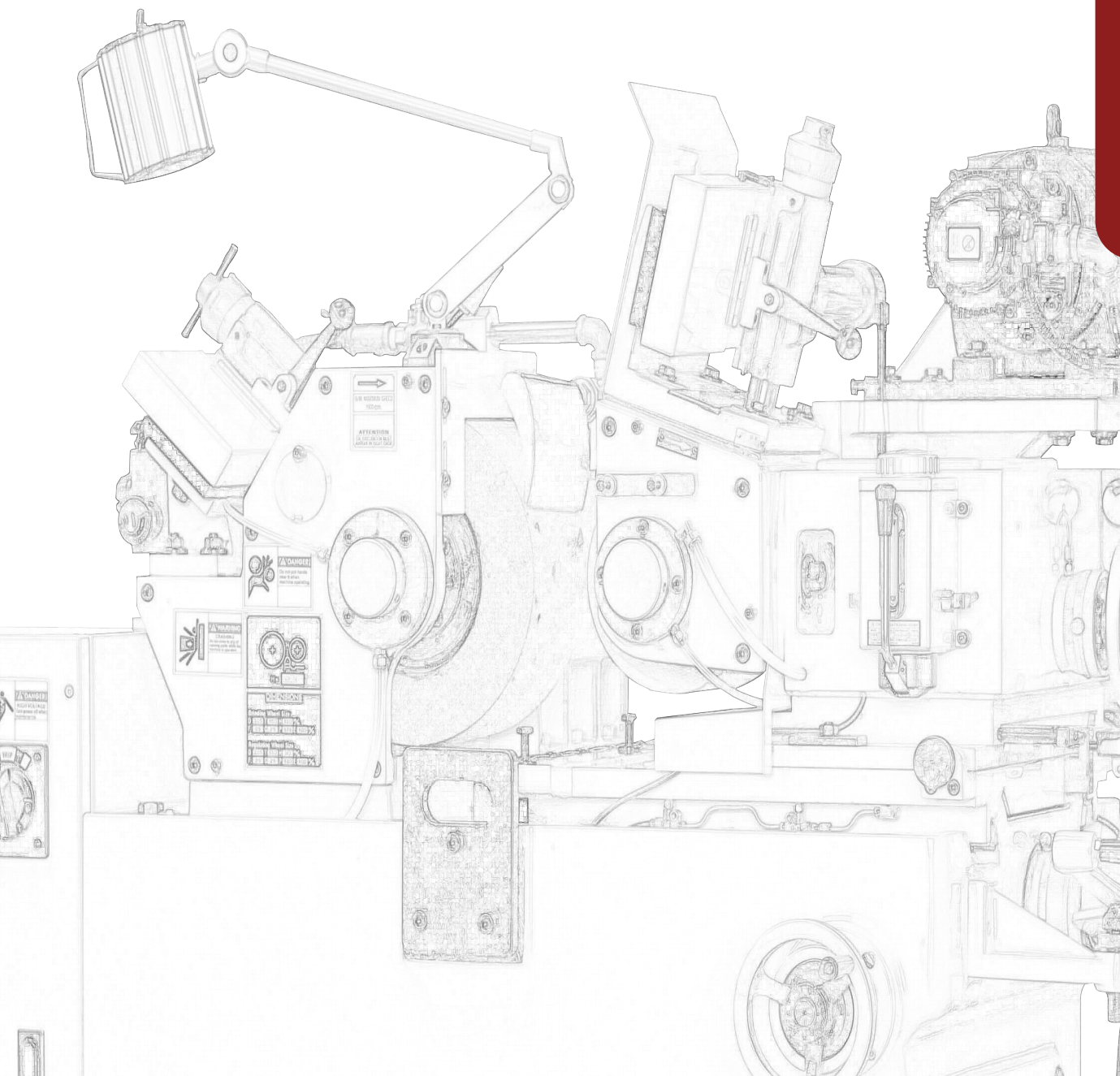
Workpiece	Ø 2 x 20e
Metal	SUJ-2
Hardness	HRC-62
Grind Wheel WA #1000	
Cut Off	0.0098"
Traversing Length	0.4"
Mag	10000
Ra	0.02µm
RMax	0.28µm
Rz	0.24µm
RMS	0.02µm
Rt	0.22µm
Rtm	0.20µm
Material	SCM415H
Hardness	HRC59-64
Stock Removal	0.008" - 0.012"
Cycle Time	040 sec/pc



Vibratory Parts Feeder and Straight Line Feeder

# Specifications

Model	KCG-12S	KCG-18S	KCG-20S	KCG-24S
Grinding Range (Standard Work Rest)	Ø 0.04" – 1"	Ø 0.04" – 2"	Ø 0.04" – 2"	Ø 0.078" – 2.36"
Grinding Range (Special Work Rest)	Ø 1" – 1.96"	Ø 1.5" – 4"	Ø 1.5" – 4"	Ø 2" – 6"
Grinding Wheel Size	12" x 6" x 5"	18" x 8" x 9"	20" x 8" x 12"	24" x 8" x 12" (Opt: 24" x 12" x 12")
Regulating Wheel Size	8" x 6" x 3.5"	10" x 8" x 4"	12" x 8" x 5"	12" x 8" x 5" (Opt: 12" x 12" x 5")
Grinding Wheel Speed	1900 rpm	1200 rpm	1200 rpm	1050 rpm
Regulating Wheel Speed	7 Steps 20-337 rpm Infinitely Var. 10-300 rpm (S Model)	10 Steps 13-316 rpm Infinitely Var. 10-250 rpm (S Model)	10 Steps 13-316 rpm Infinitely Var. 10-250 rpm (S Model)	10 - 250 rpm Infinitely Var. speed
Grinding Wheel Motor	7.5 hp	15 hp	20 hp	25 hp (Opt. 30 hp)
Regulating Wheel Motor	2 hp	2 hp	3 hp	3.8 hp (Opt. 5 hp) Servo Motor
Hydraulic Pump Motor	1 hp	1 hp	1 hp	-
Coolant Pump Motor	1/8 hp	1/4 hp	1/4 hp	1/2 hp
Upper Slide Feed Graduation	0.0001" (0.200" Per Rev)	0.0001" (0.200" Per Rev)	0.0001" (0.200" Per Rev)	0.00004" (grad) (0.0008" per rev)
Lower Slide Feed Graduation	0.0002" (0.400" Per Rev)	0.0002" (0.400" Per Rev)	0.0002" (0.400" Per Rev)	0.0004" (grad) (0.098" per rev)
Lower Slide Micro Feed	0.000050" (Grad), 0.010" (Rev)	0.000050" (Grad) 0.010" (Rev)	0.000050" (Grad) 0.010" (Rev)	0.00004" (grad) (0.0008" per rev)
Dressing Device Graduation	0.0005" (Grad) 0.050" (Rev)	0.0005" (Grad) 0.050" (Rev)	0.0005" (Grad) 0.050" (Rev)	0.00004" (grad) 0.079" (rev)
Regulating Wheel Tile Angle	+5 ~ -3°	+5 ~ -3°	+5 ~ -3°	+5 ~ -3°
Regulating Wheel Swivel Angle	± 5°	± 5°	± 5°	± 1°
Net Weight	3520 lbs	6160 lbs	7040 lbs	14300 lbs
Floor Space	71" x 55" x 55"	91" x 79" x 60"	71" x 55" x 55"	110" x 79" x 51"
Case Size	90" x 43" x 71"	125" x 55" x 75"	91" x 43" x 71"	118" x 71" x 77"



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