

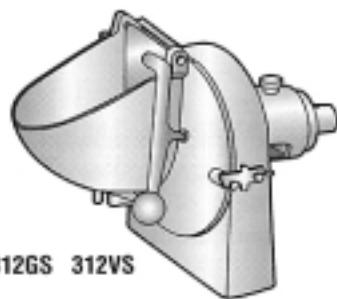


INSTRUCTIONS FOR OPERATION AND CARE

312GS GRATER/SHREDDER AND 312VS SLICER ATTACHMENTS

NSF

Our versatile grater/shredder attachments can be used to grate and shred cheeses, raw vegetables, nuts, breadcrumbs, etc. depending on the plate or disc selected. Our S/S discs are available with 1/2", 1/4", 3/16", 3/32", 5/16", or 5/64" size holes and a special grating disc for breadcrumbs & hard cheeses. A disc holder with shaft and one 3/16" disc are included with the 312GS attachments.

**312GS 312VS**

Our slicer attachments can be used for slicing potatoes (from 1/16" to 5/8" thickness); cutting vegetables for salads and coleslaw; or for slicing fruits and nuts.

An adjustable slicer plate with shaft are included with the 312VS attachments.

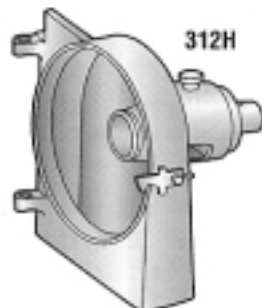
WARNING

There are sharp rotating knives behind the front door; keep hands out of hopper and use a feed pusher or stomper to push product into the hopper – do not use your fingers. Always stop power unit before opening front for changing, cleaning, or servicing anything on this unit. Only trained and qualified persons 18 years and older should use these attachments.

These attachments are made up of the following four basic components:

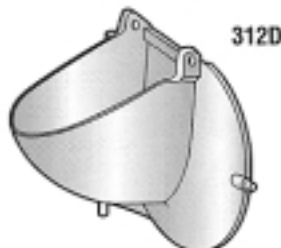
1. 312H Housing or Back Case.
2. 312D Front Door or Hopper (resembles a pelican's beak)
3. 312P Pusher Plate
4. Disc Holder or Slicer Shaft units:
 1. Adjustable Slicer Shaft # 312KDS with S/S "S" knife
 2. Shredder Disc Holder # 312DH

Note: Size 12 hub is 9/16" square;

**312H**

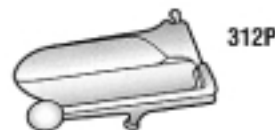
HOUSING OR BACK CASE

The housing or back case mounts into the attachment socket of a mixer, food cutter or power drive unit and is retained by the pointed thumbscrew that goes through the attachment hole into the indentation on the neck of the machine. Size 12 hub takes an attachment with a hub shaft 9/16" square.

**312D**

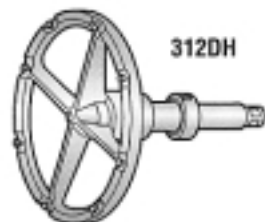
DOOR OR HOPPER

The front door is a hopper and lever feed design. It hinges onto the back case and is held closed with an adjustable latch. To remove the front door, lift the latch and swing the door open while lifting it from the hinge holes.

**312P**

PUSHER PLATE

The pusher plate has an integrated handle to push the food into the rotating disc or slicer knife. It has pins at both ends of the top and hinges into the front door. The pusher plate has a rubber-tipped stop screw (P-1018) under the handle that can be adjusted to prevent the plate from coming in contact with the disc or blade.

**312DH**

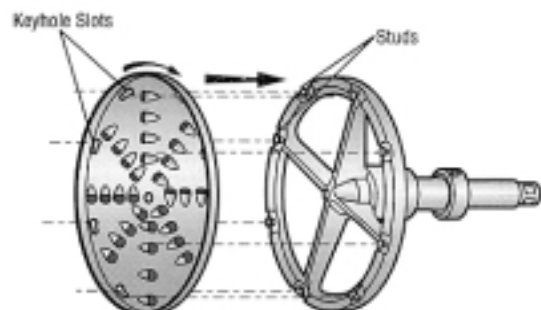
DISC HOLDER WITH SHAFT

Shredder discs are available with 1/2", 1/4", 3/16", 3/32", 5/16" and 5/64 hole sizes. These discs have keyhole slots for attaching to shouldered studs on the plate hubs.

TO INSTALL SHREDDER OR GRATER DISCS

Stop the machine. Orient the disc with the cutting edge away from the shaft assembly. Locate the keyhole slots on the disc and slide the wide part of the slots over the studs on the disc holder. When the disc is flush with the holder, rotate it clockwise to lock it in position. It is possible to loosely assemble the disc to the hub (sharp edge out), then place it on a work surface (the teeth on the disc will mar a finished table). Press down and turn the hub until plate locks into place. The sharp "teeth" should face out on the holder. To detach the plate from the hub, reverse the installation procedure. A safe method is to use protective gloves and press the palm of one hand against the disc to rotate it.

Note: The discs are slightly bent to provide holding pressure when in position.



SHREDDER DISC

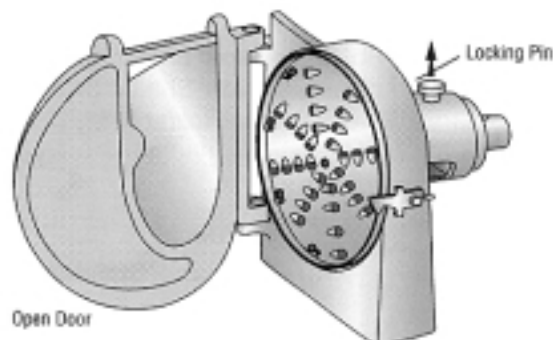
The coarse discs are normally used for making chopped slaw, cutting vegetables for soup stock, salad blends or "hash brown" potatoes. The medium and finer discs are for fine shredding of carrots, beets, turnips, etc., and for salads. See our application chart at the end of these instructions.

GRATER DISC

The grater disc may be used for crumbling hard cheese or grating hard vegetables.

TO INSTALL 312DH DISC HOLDER ASSEMBLY

Stop the machine. With door open, pull the locking pin #P-1007 up and insert 312DH until the square end of the shaft fits snugly into the power unit. Then release the locking pin to hold the 312DH in proper position.

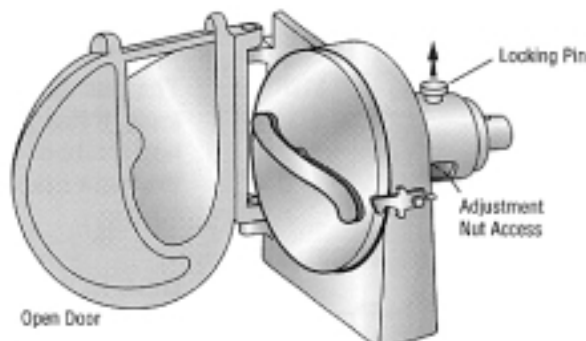
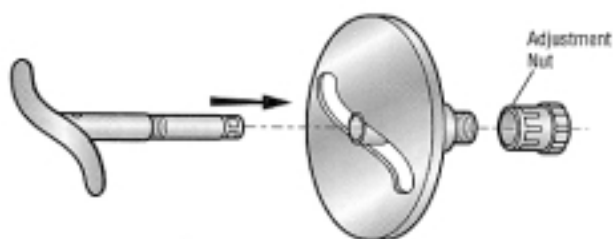


SLICER KNIFE DISC ASSEMBLY & INSTALLATION

Turn off and unplug the machine. Adjust the slicing thickness from approximately 1/16" to 5/8" by turning the gray plastic adjusting nut #P-1022. Lift the silver locking pin #P-1007 on the top of the rear of the housing and open the front door and slide the slicer unit back into operating position. The square end of the shaft may have to be manually rotated to seat into the machine socket properly. Secure the unit to the machine by tightening the pointed thumbscrew in the hole on the top side of the attachment hub. Attach the pusher plate 312P and close and latch the door 312D before turning the machine on.

TO ADJUST THICKNESS OF SLICES

Stop the machine. While you can adjust the thickness of slices with Knife Disc Assembly in position, by turning the gray plastic Adjusting Knob #P-1022, accessed through the opening in the rear housing, we recommend that you remove the Knife Disc Assembly from the housing and turn the Adjusting Knob while carefully holding the disc.

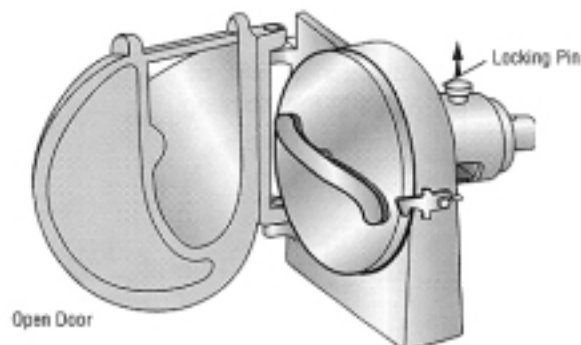


CAUTION: The adjusting nut turns with the shaft and adjustments should not be attempted unless the power unit is turned off and unplugged.



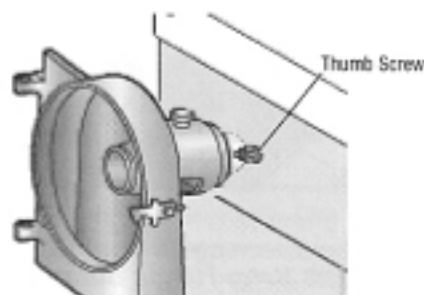
TO REMOVE 312KDS KNIFE DISC ASSEMBLY FROM HOUSING

Open the door all the way and raise the locking pin #P-1007 (on top of rear of housing) and the assembly will be free for removal by pulling outward.



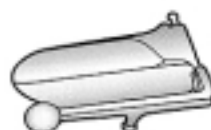
TO REMOVE ATTACHMENT FROM POWER UNIT

Loosen thumbscrew on power unit until hub is free for removal from unit.



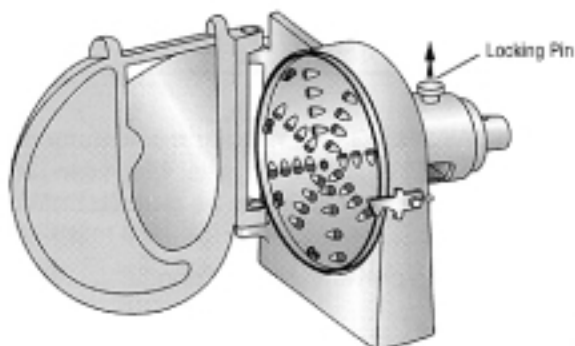
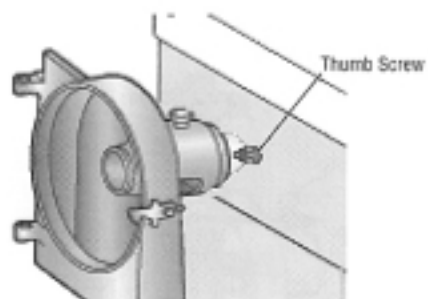
PUSHER PLATE REMOVAL

Raise the Pusher Plate and slide it out of the slot in the door 312D.

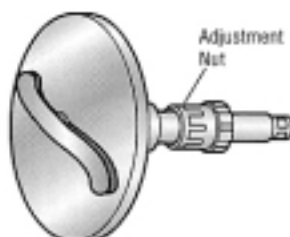


OPERATION

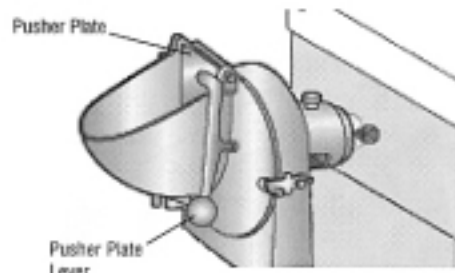
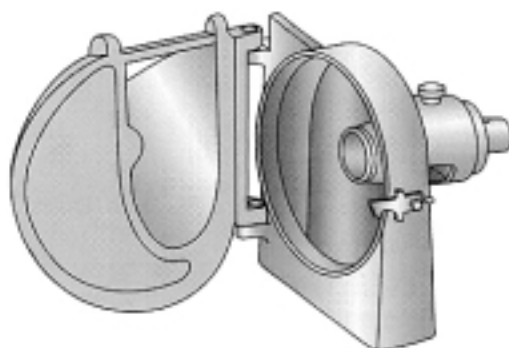
1. Stop the power unit (mixer, food cutter, chopper, power drive etc.)
2. Attach the housing of slicer to the attachment socket of the companion machine with the thumbscrew.



3. Select the grater/shredder or slicer assembly to be used. Lift the locking pin and insert the plate and shaft assembly into the drive position. Release the locking pin. Set the slice adjustment (if used) to the proper thickness.



- Drop the hinge pins of the front door into the holes in the housing.



CAUTION: Keep Hands out of Hopper – use a stomper or food pusher.

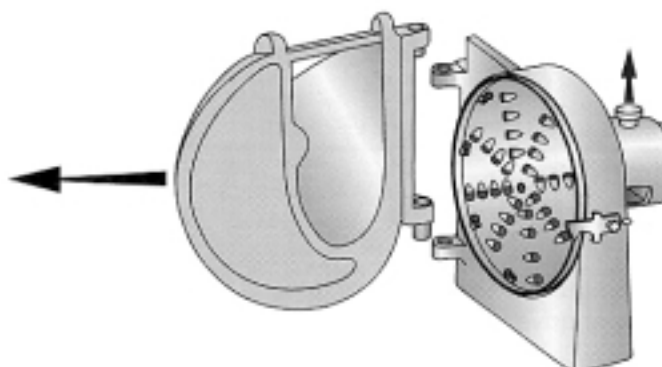
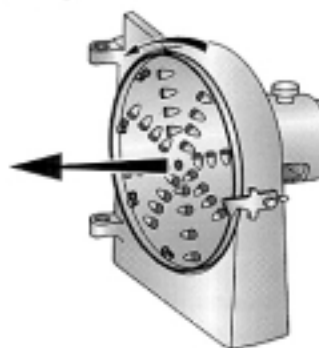
- Close the slicer front door and fasten the latch.
- Start the machine. Set at a speed to produce the best product (see machine manual)
- Raise the pusher plate lever.
- Place the food to be sliced in the hopper and gently press down on the pusher plate lever.

Note: Too much pressure crushes the food and causes irregularity in the slices. Large items may have to be cut down to fit into the hopper.

MAINTENANCE INSTRUCTIONS

CLEANING

- Stop the power unit (mixer, food cutter, power drive, etc.).
- Release the latch and remove the front door.
- Lift the locking pin and withdraw the shredding or slicing unit from the housing.



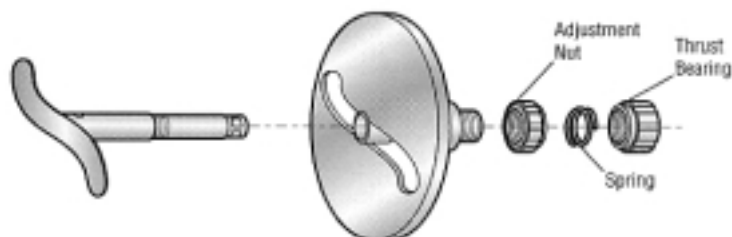
- The shredder and grater discs can be easily removed from the plate hub by rotating plate counter-clockwise to release the keyhole slot from the studs.

CAUTION: These discs are sharp and must be handled with care.

- All components of these attachments may be cleaned by HAND WASHING ONLY, using mild detergent in warm water. These units are NOT dishwasher safe due to the corrosive nature of commercial detergents, which can discolor aluminum and turn it black. Rinse in hot, clear water and dry immediately. It is important that juices be cleaned from the attachments before they dry.

Note: Frequent lubrication with a USDA approved grease is necessary to prevent shaft seizing.

6. When using the adjustable slicer unit, make sure it is cleaned frequently to assure easy thickness adjustment. Occasionally disassemble the slicer unit for a thorough cleaning. To do this it is necessary to unscrew the knurled thrust bearing, which has a left hand thread, to release the spring. Withdraw the knife and shaft assembly. Unscrew the adjusting nut from the plate. Use a drop of approved food machinery oil on the shaft and adjustment threads after cleaning.



Note: After cleaning, to prevent damage the thrust bearing must be tightened until sealed against shoulder on shaft. Failure to properly reassemble can result in damage to knives, shaft and slicer plate. Do not clean any of these components in a dishwasher with strong detergents or chemicals. Use a USDA approved grease on the shaft for best operation.

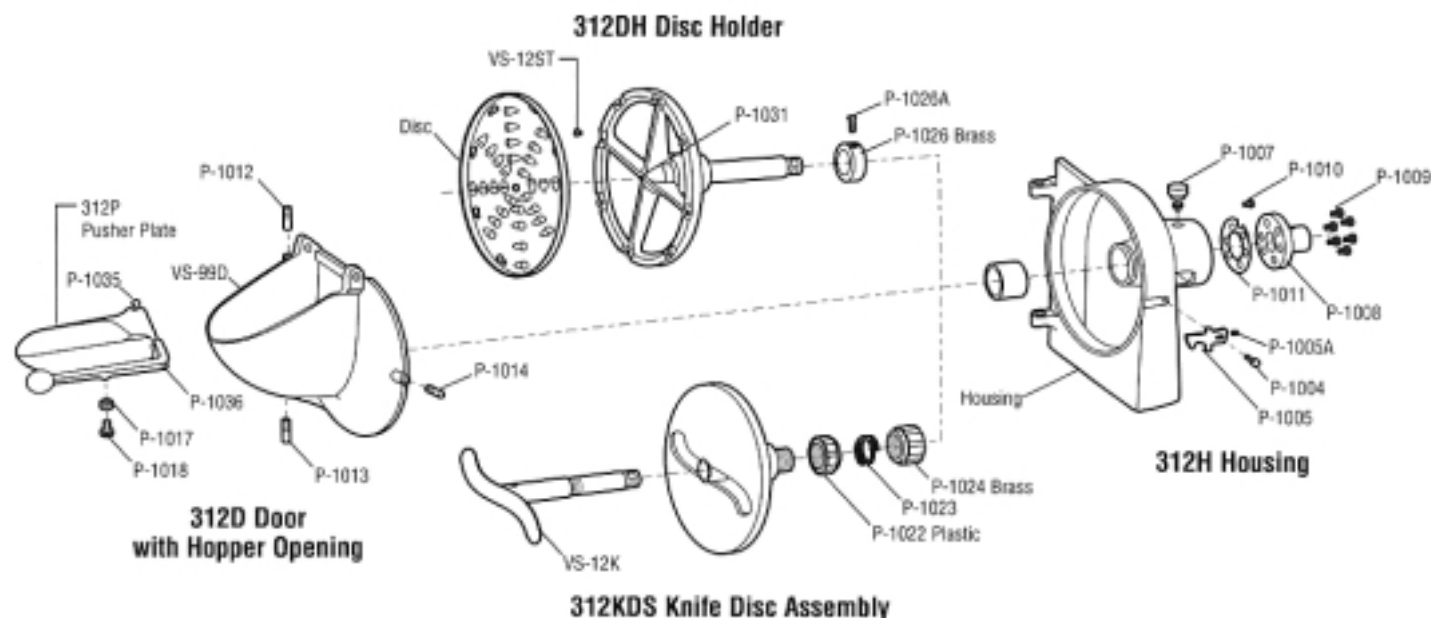
CAUTION: Do not permit water or moisture to remain on or in the hub, shaft, or the rear opening in the housing. This condition will result in rusting which will eventually destroy the rear end components and shaft and void the six-month factory warranty.

KNIFE SHARPENING

Occasional touching up along the edges of the knife with a honing stone will keep cutting operations at peak performance.

PUSHER PLATE STOP

Frequently check that the pusher plate does not hit the grater disc holder or knife shaft assembly. The Pusher Plate Stop P-1018 can be adjusted to avoid touching the internal moving parts. With proper care and maintenance, your Vegetable Grater/Shredder/Slicer Attachment will provide you with many years of performance.



WARNING

**KEEP FINGERS AND HANDS
AWAY FROM MOVING PARTS**

PART NUMBER LISTING

312H HOUSING

312H	Back Housing size 12
P-1004	Threaded (Hex) Pin for housing latch
P-1005	Latch with setscrew
P-1005A	Latch setscrew only
P-1007	Shaft Lock knob - top
P-1008	Rear #12 Housing Hub with locating pin – six holes
P-1009	Flat Head Machine Screw (6) for hub
P-1010	Knife Lock Screw
P-1011	Fiber gasket

312DH DISC HOLDER

312DH	Disc Holder Assembly Complete
P-1026	Brass Collar or Thrust Bearing with set screw
P-1026A	Set Screw for Collar
312ST	Stud for Disc Holders
P-1031	Pin for Disc Holder Center
312KD-1/2	S/S Shredder Disc – 1/2" hole - Germany
312KD-5/16	S/S Shredder Disc – 5/16" hole - Germany
312KD-1/4	S/S Shredder Disc – 1/4" hole - Germany
312KD-3/16	S/S Shredder Disc – 3/16" hole - Germany
312KD-3/32	S/S Shredder Disc – 3/32" hole - Germany
312KD-5/64	S/S Shredder Disc – 5/64" hole - Germany
312GD	S/S Grater Disc - Germany

312KDS KNIFE DISC

312K	*S* Knife
P-1022	Knife Adjusting Nut- Gray Plastic
P-1023	Tension Spring
P-1024	Bronze Lock Nut or Thrust Bearing

312D DOOR

P-1012	Upper Hinge Pin (long)
P-1013	Lower Hinge Pin (short)
P-1014	Latch Pin

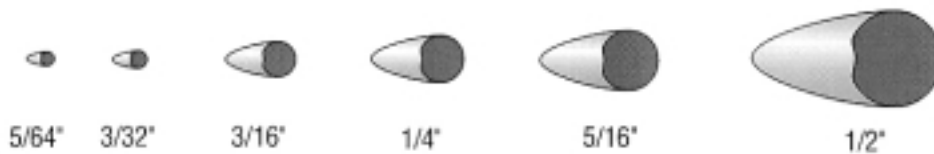
312P PUSHER PLATE

P-1017	Stop Nut
P-1018	Stop Screw
P-1035	Round Hinge Pin
P-1036	Bullet Hinge Pin

Shredder and Grater Plate Hole Sizes with Typical Applications

Food Product	1/2" Shredder Plate 000	5/16" Shredder Plate 0	3/16" Shredder Plate 3	3/32" Shredder Plate 7	Universal Grater Plate 14
Cole Slaw	●	●			
Bread Crumbs		●			●
Cheese		●			
Soft Cheese For Pizza			●		
Carrots For Coloring			●	●	
Cheese For Tacos				●	
Hard Cheese					●

Stainless steel Shredder Disc hole sizes (not drawn to scale)



SS Grater Disc



*For **Hard**
Cheese only*



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