

NVA-07B PUGMILL Instruction Manual

A Tradition of Excellence

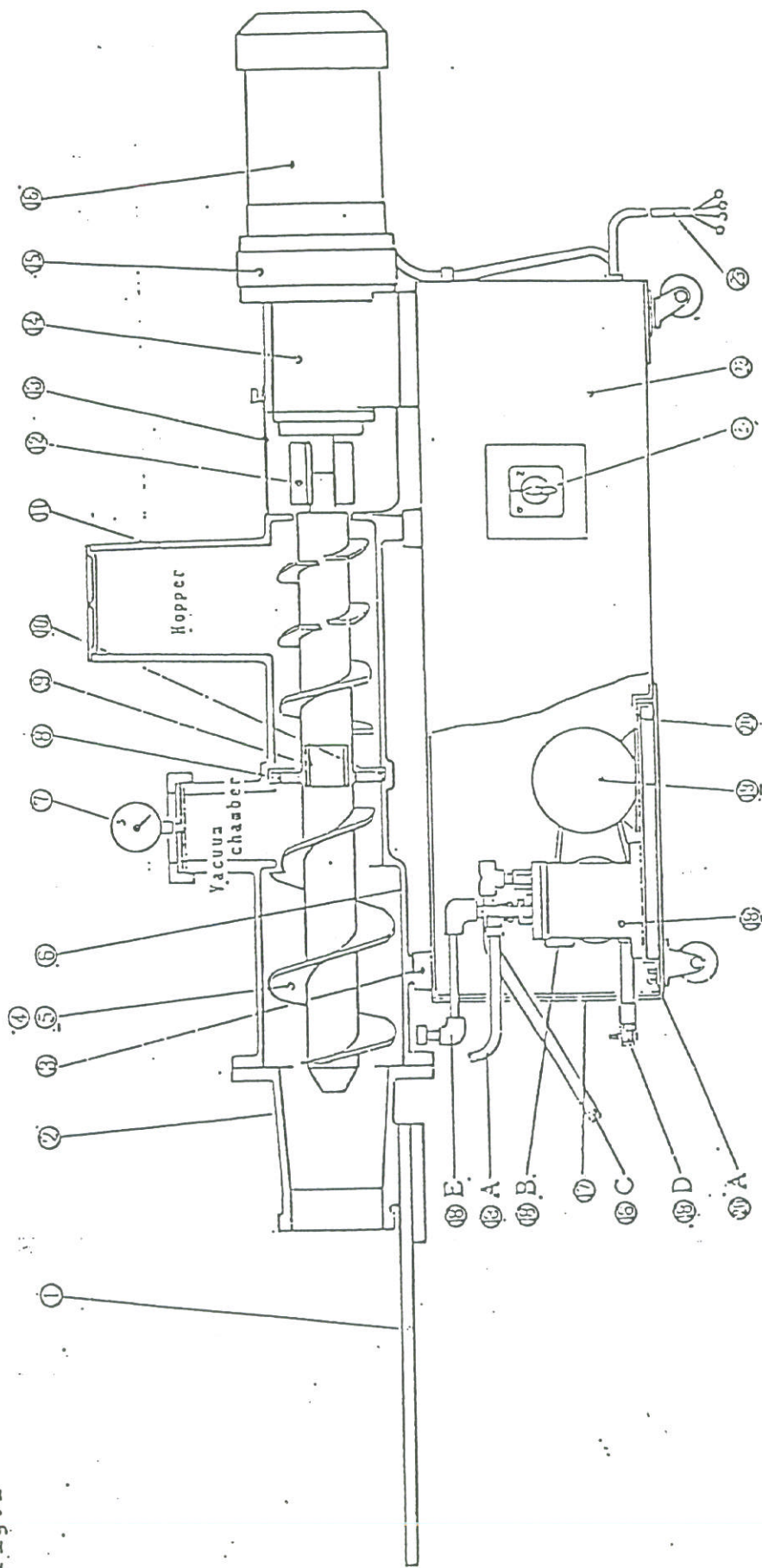
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A. NVA-07B and NVA-15B PARTS

Fig.1



PART#

1. Clay rest
2. Nozzle
3. Base B
4. Screw A
5. Short screw
6. Long screw
7. Screw case A
8. Pressure gauge
9. Metal
10. Vacuum plate B
11. Screw case B
12. Cylindrical separate coupling
13. Screw cover
14. Base
15. ER speed reducer
16. Motor for pugmill
17. Front cover
18. Vacuum pump
- 18.A. Air intake opening
- 18.B. Oil level confirming
- 18.C. Air release opening
- 18.D. Oil release opening
- 18.E. Oil inlet opening
19. Vacuum pump motor
20. Pump Base
- 20.A. Pump fixing bolt
21. Switch
22. Frame
23. Power Cord

B. PREPARATION

1. Fill vacuum pump hydraulic oil #68 (provided).
Oil level should be at center of oil gauge when pump is on.
2. Attach Clay rest with bolts provided (#1).
3. Plug in Power cord (#23).

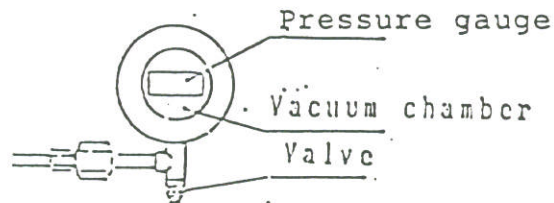
C. TO MOUNT SAFETY HOPPER

See Safety Equipment manual for NVA-07B.

D. TO OPERATE

1. Turn on switch (#21).
If switch is turned from "0" to "1" screws will rotate.
If switch is turned from "1" to "2" or from "0" to "2",
vacuum pump will operate. Vacuum will not work until
clay gets into the nozzle (#2).
2. Close valve at side of vacuum chamber. (Fig.2)

Fig.2



3. Add clay. The clay will be de-aired and pugged.
Pressure gauge (#7) must read 70cm/Hg.

Note: The first few feet of clay extruded from nozzle
may not be completely densified and should not
be used.

4. To stop
 - a) Turn switch (#21) to "0" or "1".
 - b) Open valve at side of vacuum chamber. (Fig.2)
(This procedure must be followed so oil in vacuum
pump will not flow into vacuum chamber.)
5. Release water.
If pugmill will not be used for a long period of time,
water should be released immediately before operating.

B. SPECIFICATIONS

MODEL	NVA-07B	NVA-15B
Main Motor	1HP, 750W, 230V, 60Hz, A.C.	2HP, 1500W, 230V, 60Hz, A.C., 3-Phase
Vacuum Pump Motor	1/8HP, 100W, 60Hz	1/8HP, 100W, 60Hz, 3-Phase
Capacity	1100 lbs./hr.	1320 lbs./hr.
Tube Opening	4" diameter	4 3/8" diameter
Hopper Size	4 1/2" x 4 1/2"	5 1/4" x 4 7/8"
Dimensions LxWxH	70 1/4" x 16 3/4" x 53 1/4"	75 1/4" x 16 3/4" x 54 1/2"
Weight	287 lbs.	353 lbs.
Shipping Weight	320 lbs.	400 lbs.
Accessories	Clay rest, clay cutter, hopper cover & nozzle cover	
Safety Device	Safety extension hopper	

C. PREPARATION

1. Fill vacuum pump with hydraulic oil #68(provided) to center of oil gauge.
2. Attach Clay rest with bolts provided (#1).
3. Plug in Power cord (#23).

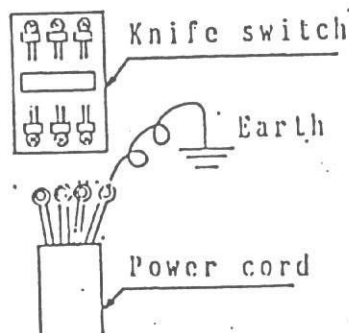
FOR NVA-15B

- a) To connect with knife switch: (Fig.2)

Connect red, white and black wires to knife switch. Green wire is ground/earth.

Test: Turn pug mill switch to "1". Screws should turn forward. If they turn in reverse, reconnect two of three wires (not ground/earth). (Fig.3)

Figure.2



- b) To connect using plug: (Fig.4)

Connect green wire to ~~odd shaped~~ ^(earth) prong. Connect red, white and black wires to other prongs.

Test as above.

Connect green (earth) wire to wall plug at arrow.

Figure.3

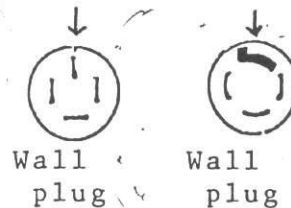
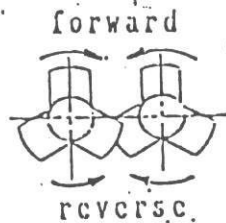


Figure.4

FOR NVA-07B

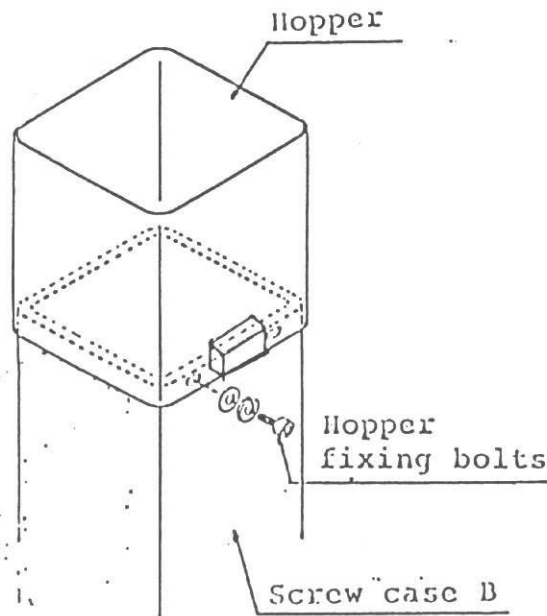
Just plug in Power cord.

D. TO MOUNT SAFETY HOPPER

Mount safety hopper onto screw case B (#11) by using 4 fixing bolts. (Fig.5)

Note: Pug mill motor will not work without safety hopper.

Figure.5

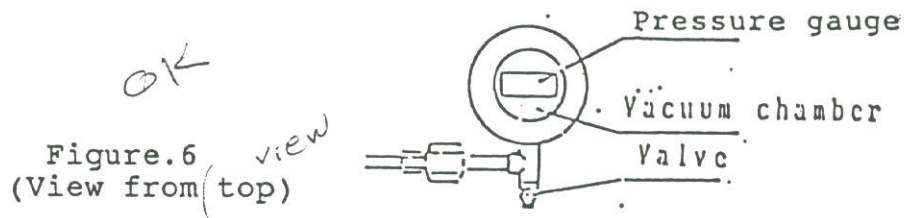


E. TO OPERATE

1. Turn on switch (#21).
If switch is turned from "0" to "1", screws will rotate. If switch is turned from "1" to "2" or from "0" to "2", vacuum pump will operate. (Vacuum will not work until clay gets into the nozzle (#2)).

Note: Make sure that pug mill motor stops running if you remove safety hopper.

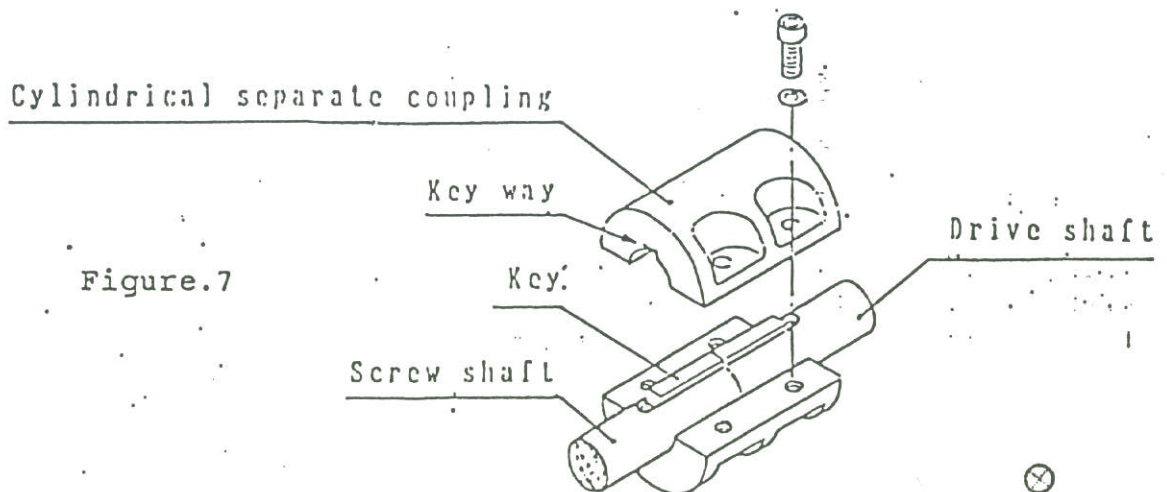
2. Close valve at side of vacuum chamber. (Fig.6)



3. Add clay
The clay will be de-aired and pugged. Pressure gauge (#7) must read more than 70cm/Hg.
4. To stop
 - 1) Turn switch (#21) to "0" or "1".
 - 2) Open valve at side of vacuum chamber (Fig.6).
(This procedure must be followed, so oil in vacuum pump will not flow into vacuum chamber.)
 - 3) Turn switch (#21) to "0".
5. Release water.
If pug mill will not be used for a long period of time, open oil release opening (#18.D) to release water.

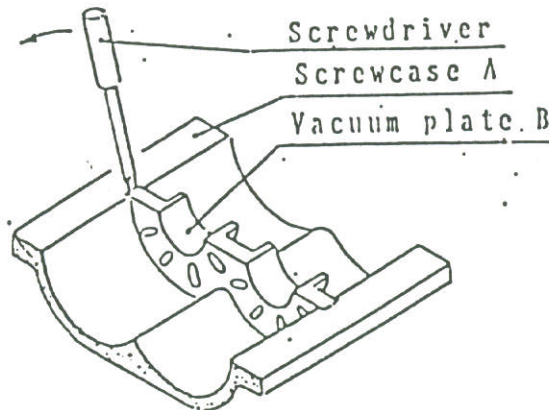
F. TO CLEAN

1. Remove pressure gauge (#7).
2. Pull out the hose from half union. (Fig.17)
3. Remove screw cover (#13) by removing 2 knob screws from base (#14).
4. Position cylindrical separate coupling (#12). (Turn switch to "1". Turn screw until the allen bolt which tightens the cylindrical separate coupling comes to the top. Turn switch OFF.)
5. Remove clay rest (#1).
6. Remove nozzle (#2).
7. Remove screw case B (#11).
8. Remove vacuum plate A (#8). Remove 2 stainless allen bolts.
9. Remove metal (#9). (If worn, replace metal (#9) to avoid air from leaking into vacuum chamber.)
10. Remove cylindrical separate coupling (#12). (Fig.7)



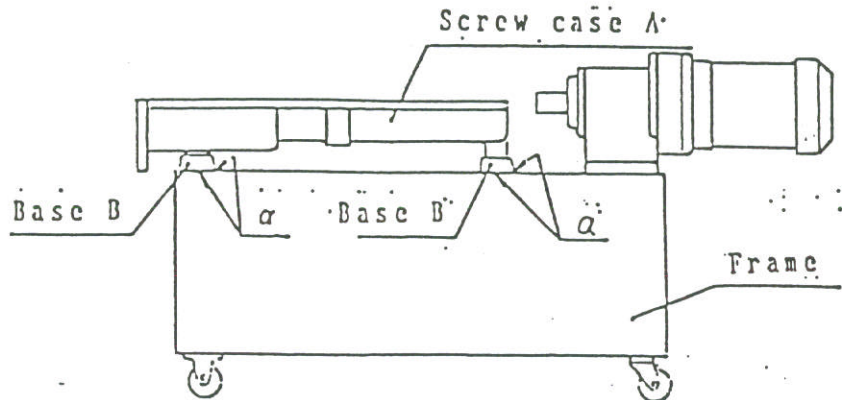
11. Lift screws A and B (#4 and #5).
12. Remove vacuum plate B (#10). (Fig.8)

Figure.8



13. To remove screw case A (#6), mark the interfacing portion of Base B (#3) and Frame, (#22). ~~Assembly must be reassembled in the same marked position.~~ (Fig.9)

Figure.9

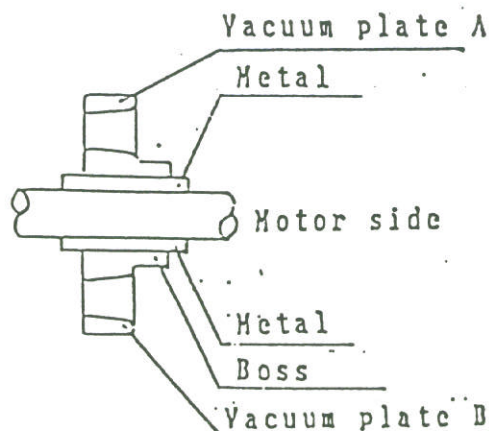


14. Clean all clay from all parts of the pug mill with water.

G. TO REASSEMBLE

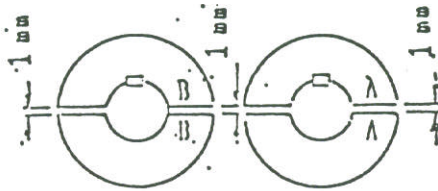
1. Mount screw case A (#6) on frame 22. Install screw case A, matching your mark made on frame with base B.
2. Put vacuum plate B (#10) into screw case A (#6). Boss will be on motor side. Female screw is on the vacuum plate B. (Fig.10)

Figure.10



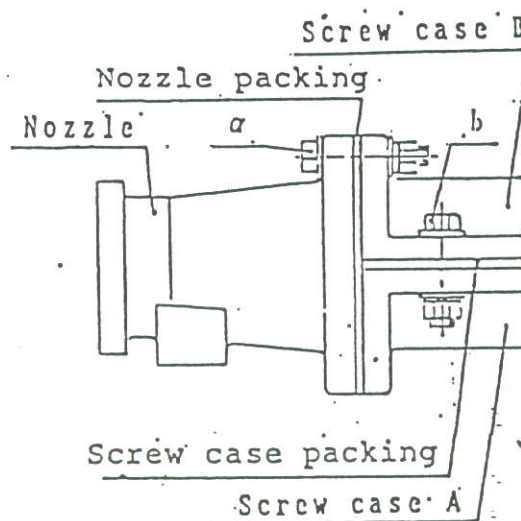
3. Place one half of the metal (#9) on vacuum plate B (#10).
4. Mount Screw A and B. (#4 and #5).
Put screws shaft onto the drive shaft. Match screw shaft and key of drive shaft. (Fig.7)
5. Hold screw shaft and drive shaft tightly with cylindrical separate coupling. Keep even distance on both sides of coupling (Approx. 1mm). Mark A and B are engraved on couplings. Match A to A, and B to B of the couplings and tighten them. Hammer lightly key into key way of the coupling. (Fig.7,11)

Figure.11



6. Place the second half of the metal (#9) onto screw A and B (#4 and #5).
7. Fasten vacuum plate A (#8) onto vacuum plate B (#10) with allen bolts. (Fig.10)
8. Place screw case B (#11) on screw case A (#6) and tighten lightly by hand. Clean all dirt on the interfacing surface to avoid air leakage.
9. Mount nozzle on screw case A and B (#6 and #11). Tighten all bolts and nuts. Then, loosen 2 upper bolts and nuts. (Fig.12)

Figure.12



10. Tighten the 10 bolts which were tightened by hand in 8 above. (bolt-b in Fig.13)
11. Tighten 2 bolts loosened in 9 above. (bolt-a Fig.13)

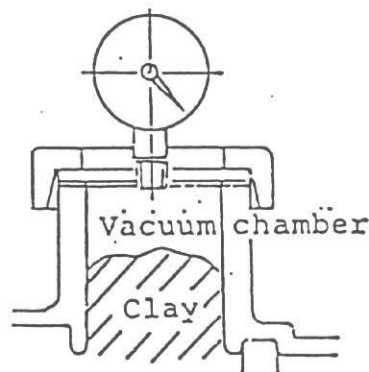
12. Mount Clay rest (#1).
13. Mount screw cover (#13).
14. Set hose into half union. (Fig.17)
15. Mount pressure gauge (#7).

H. MAINTENANCE

1. After operating, cover pug mill.
 - a) Place rubber cover onto nozzle (#2).
 - b) Mount pressure gauge (#7).
 - c) Put wet cloth into hopper, cover the hopper opening with nylon and place aluminum lid on.
 - d) Pour a small amount of water into hopper from time to time if it will be unused for a long time.
2. To remove clay in vacuum chamber.

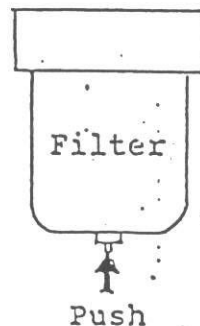
If clay enters vacuum chamber, do the following:
Turn off unit. Remove pressure gauge. Remove clay stuck in vacuum chamber.

Figure.13



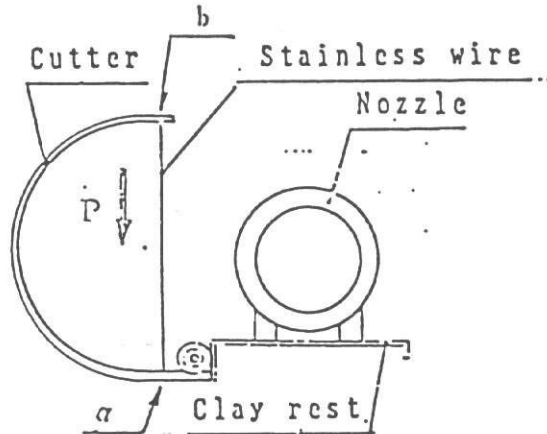
3. To release water from filter. Push protruding pin on filter as shown in the Fig.14.

Figure.14



4. To replace stainless wire (Clay cutter). (Fig.15)
 - a) Remove broken wire.
 - b) Fasten wire on a-side.
 - c) Bend cutter in direction of arrow "P".
 - d) Fasten other end of wire onto b-side while cutter is bent.

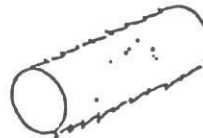
Figure.15



I. TROUBLE SHOOTING

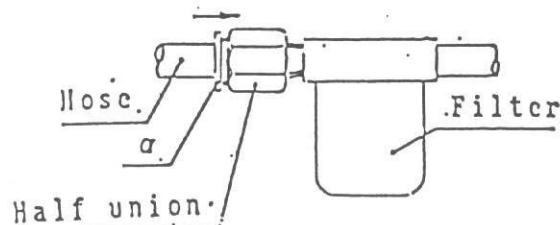
1. If clay is not taken in smoothly, follow these procedures:
 - a) When soft clay is to be pugged, mix with a small quantity of harder clay. When it runs smoothly, soft clay can be added.
 - b) If clay is too hard, pour in a small amount of water and leave it for several days until it becomes soft. If clay still wouldn't go in, disassemble pug mill and clean all clay stuck inside.
 - c) Extruded clay.
If, after a long interval, the surface of clay extruded is as in Fig.16, remove nozzle and clean.

Figure.16



2. To replace vacuum pump belt.
 - a) Remove front cover (#17).
 - b) Remove pump fixing bolt (#20A).
 - c) Pull out hose at the filter side of vacuum chamber (Fig.17).
(Push at point "a" of Half union in direction of arrow and pull out the hose.)

Figure.17



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