

SELECTING AND FITTING FANCY AND ROUND G-S CRYSTALS BY COMPRESSION

GENERAL INFORMATION

When fitting a G-S Cylinder Crystal, use very little pressure. Crystal should enter groove of case with very little friction to avoid damage to crystal.

1. Determine shape of case.
2. Refer to Table of Contents to locate shape of crystal required.
3. Using millimeter side of G-S gauge or Vernier Caliper, measure length and width of case.
4. With measurements, locate exact crystal, or one nearest to measurement of case.

5. If necessary, reduce size of crystal using G-S Polishing Set (pg. 119).
6. To secure crystal and dustproof the watch, apply G-S Hypo Cement in groove of case. Allow cement in groove to dry for 2 to 3 minutes until it becomes very tacky. Press crystal into bezel. Assemble watch case after cement is completely dry.

Every cylinder fancy crystal illustration is marked with a number such as C36, C37, C38, etc. This indicates the supplement in which the crystal was released. Order supplements by number.

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FITTING ROUND CRYSTALS IN G-S SIZES USING G-S FOOT MACHINE OR HAND PRESS H-1

1. Measure bezel with round side of G-S gauge exactly across center. The size is where the line on the gauge meets edge of groove. Use crystal not more than 1/4 to 1/2 size larger than bezel measurement. On ladies' watches, use crystal not more than 1/4 size larger.

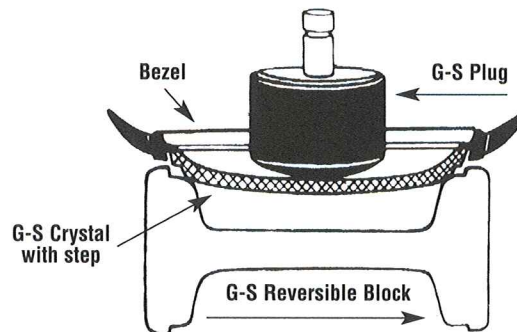
Example: When bezel measures 25, use crystal 25¹/₄ or 25¹/₂.

Exception - For pocket watches with deep grooved bezel, a crystal one size larger may be necessary. Never select crystal over one size larger than bezel.

2. Select block 4 sizes larger than bezel measurements.

Example: When bezel measures 25, select side of block showing number 29.

Number in center of each block indicates number of plug to be used. If plug number specified seems too large, use next smaller size.



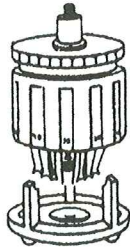
3. Lay crystal in groove of block (sharp edge up). Hold bezel over crystal (do not lay it down). Press foot pedal or hand machine allowing plug to hold crystal in place on block. Then catch edge of crystal on groove of bezel on one side and gently, with gradually increasing pressure by foot or hand, compress crystal enough to snap into bezel groove. After crystal snaps into place, do not remove fingers from bezel until pressure is released. Crystal is now held securely under compression.

INSTRUCTIONS

FITTING ROUND CRYSTALS IN G-S SIZES WITH STEP (PHD, PK, PKH) USING G-S CRYSTAL LIFT

TO INSERT NEW CRYSTAL:

1. Measure Bezel with gauge-use crystal 1/4 size larger than bezel.
2. Put crystal in base
3. Select graduation 10-20-30-40-50 for height of crystal. For best results use graduation 30 or 40.
4. Open jaws and set inserter into base with desired graduation on any shoulder. Press lightly on push rod cap for perfect centering of crystal.
5. Close jaws with an "extra twist" to reduce crystal diameter.
6. Insert crystal into bezel and open jaws.



HEIGHT SELECTOR

Selecting "height graduation" on crystal: Figures 10, 20, 30, 40, 50 on tool are permanently set and denote thousandths of an inch. The different graduations are for gripping the crystal at the best height for the type of crystal and bezel.

TO REMOVE CRYSTAL:

1. Set inserter with jaws open over crystal. Close jaws until crystal is gripped securely.
2. Apply an "extra twist" and lift up to remove old crystal from bezel.
3. Release crystal by opening jaws.

ADDED FEATURE:

When bezel is free from case, and crystal is removed, this tool can scrape the bezel clean from dirt, grit, etc. Fit the bezel over the outside portion of jaws to desired size. Twist to and fro until cleaned.

G-S ROUND CRYSTAL SIZES AND CORRESPONDING MILLIMETER SIZES

G-S Round Crystal numbering system for HC, KT, PHD, PK, PKH, VT, W, XHD is unique and originated by G-S

G-S	mm	G-S	mm	G-S	mm	G-S	mm	G-S	mm	G-S	mm	G-S	mm	G-S	mm
12.2	12.2	6	16.5	13	20.9	20	25.4	27	29.8	34	34.3	41	38.7	48	43.1
12.5	12.5	6 1/4	16.6	13 1/4	21.0	20 1/4	25.5	27 1/4	30.0	34 1/4	34.4	41 1/4	38.8	48 1/4	43.3
12.7	12.7	6 1/2	16.8	13 1/2	21.2	20 1/2	25.7	27 1/2	30.1	34 1/2	34.6	41 1/2	39.0	48 1/2	43.5
1/4	12.8	6 3/4	16.9	13 3/4	21.4	20 3/4	25.8	27 3/4	30.3	34 3/4	34.8	41 3/4	39.1	48 3/4	43.6
1/2	13.0	7	17.1	14	21.6	21	26.0	28	30.4	35	34.9	42	39.3	49	43.8
3/4	13.1	7 1/4	17.2	14 1/4	21.7	21 1/4	26.1	28 1/4	30.6	35 1/4	35.0	42 1/4	39.4	49 1/4	43.9
1	13.2	7 1/2	17.4	14 1/2	21.9	21 1/2	26.3	28 1/2	30.8	35 1/2	35.2	42 1/2	39.6	49 1/2	44.1
1 1/4	13.5	7 3/4	17.5	14 3/4	22.0	21 3/4	26.4	28 3/4	30.9	35 3/4	35.3	42 3/4	39.8	49 3/4	44.2
1 1/2	13.6	8	17.7	15	22.2	22	26.6	29	31.1	36	35.5	43	40.0	50	44.4
1 3/4	13.8	8 1/4	17.9	15 1/4	22.3	22 1/4	26.7	29 1/4	31.2	36 1/4	35.6	43 1/4	40.1	50 1/4	44.5
2	13.9	8 1/2	18.1	15 1/2	22.5	22 1/2	26.9	29 1/2	31.4	36 1/2	35.8	43 1/2	40.3	50 1/2	44.7
2 1/4	14.1	8 3/4	18.2	15 3/4	22.6	22 3/4	27.1	29 3/4	31.6	36 3/4	36.0	43 3/4	40.4	50 3/4	44.8
2 1/2	14.2	9	18.4	16	22.8	23	27.3	30	31.7	37	36.2	44	40.6	51	45.0
2 3/4	14.4	9 1/4	18.6	16 1/4	22.9	23 1/4	27.4	30 1/4	31.9	37 1/4	36.3	44 1/4	40.7	51 1/4	45.2
3	14.6	9 1/2	18.7	16 1/2	23.1	23 1/2	27.6	30 1/2	32.0	37 1/2	36.5	44 1/2	40.9	51 1/2	45.4
3 1/4	14.7	9 3/4	18.9	16 3/4	23.3	23 3/4	27.7	30 3/4	32.2	37 3/4	36.7	44 3/4	41.0	51 3/4	45.5
3 1/2	14.9	10	19.0	17	23.5	24	27.9	31	32.3	38	36.8	45	41.2	52	45.7
3 3/4	15.0	10 1/4	19.1	17 1/4	23.6	24 1/4	28.1	31 1/4	32.5	38 1/4	36.9	45 1/4	41.4	52 1/4	45.8
4	15.2	10 1/2	19.3	17 1/2	23.8	24 1/2	28.2	31 1/2	32.7	38 1/2	37.1	45 1/2	41.6	53	46.3
4 1/4	15.3	10 3/4	19.5	17 3/4	23.9	24 3/4	28.3	31 3/4	32.9	38 3/4	37.2	45 3/4	41.7	53 1/4	46.4
4 1/2	15.5	11	19.7	18	24.1	25	28.5	32	33.0	39	37.4	46	41.9	54	47.0
4 3/4	15.6	11 1/4	19.8	18 1/4	24.2	25 1/4	28.7	32 1/4	33.1	39 1/4	37.5	46 1/4	42.0	54 1/4	47.1
5	15.8	11 1/2	20.0	18 1/2	24.4	25 1/2	28.9	32 1/2	33.3	39 1/2	37.7	46 1/2	42.2	55	47.6
5 1/4	16.0	11 3/4	20.1	18 3/4	24.5	25 3/4	29.0	32 3/4	33.5	39 3/4	37.9	46 3/4	42.3	55 1/4	47.7
5 1/2	16.2	12	20.3	19	24.7	26	29.2	33	33.6	40	38.1	47	42.5	56	48.2
5 3/4	16.3	12 1/4	20.4	19 1/4	24.8	26 1/4	29.3	33 1/4	33.8	40 1/4	38.2	47 1/4	42.6	56 1/4	48.3
		12 1/2	20.6	19 1/2	25.0	26 1/2	29.5	33 1/2	33.9	40 1/2	38.4	47 1/2	42.8	57	48.9
		12 3/4	20.7	19 3/4	25.2	26 3/4	29.6	33 3/4	34.1	40 3/4	38.5	47 3/4	42.9	57 1/4	49.2

Note: Some styles are only available in certain sizes. See page 126 for details.



SELECTING AND FITTING ROUND STYLES SIZED IN MILLIMETERS WITH AND WITHOUT RINGS

GENERAL INFORMATION

1. ET and AT crystals with regular style rings are the most widely used ring-type crystals.
2. ST crystals with step style rings are used where a step, undercut, or groove in ring is necessary to hold movement, dial, etc.
3. MT crystals are used where there is a magnifier window in calendar or date watches.
4. DT crystals are used where extra heavy crystal is needed such as Diver-type watches, or special watch cases.
5. AT crystals are used for Seiko and other imported or domestic watches that require an angle-style crystal.
6. TT crystals are used where a low profile ring style is required in quartz, digital or analog watches.
7. TR crystals are used where a low profile crystal without ring is required in quartz, digital or analog watches.
8. WT crystals are used where an extra-wide ring is required.
9. EW rings are used in place of regular or step style rings in any of the above ring-style crystals. This enables you to have an extra wide ring without having to stock crystals with extra wide rings.
10. MG MINERAL GLASS crystals are used where a glass crystal is preferred. G-S VT VERI-THIN or KT KLEER-TITE plastic crystals can also be used in place of the original glass crystal.
11. CT CURVE-TITE crystals are used where a slight domed crystal with polished edge is required. This style has no ring.

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SELECTING ROUND CRYSTALS SIZED IN MILLIMETERS

If tool is required, use HP-5 Press only. Do not use G-S Foot Machine.

1. Measure case opening with millimeter side of G-S gauge or Vernier Caliper graduated in millimeters with 1/10th mm markings.
2. Select crystal 1/10th or 2/10th mm smaller than case opening.
3. Fit crystal by hand to check size. If too loose, select next size larger, etc.
4. When proper size is determined and if necessary to use hand press, follow reflector ring type HP-5 fitting instructions on page 124.
5. To avoid damaging crystal, be careful not to force too large a crystal into bezel opening.

HP-5 ADAPTER NUMBERS AND CORRESPONDING G-S MILLIMETER AND ROUND CRYSTAL SIZES

mm	8.4	10.7	12.7	14.6	17.1	19.7	21.6	23.9	24.7	26.6	27.9	29.8	31.1	33.0	34.3	35.5	38.1	40.0	41.9	44.4
SIZES	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
	10.0	12.7	14.6	17.1	19.7	21.6	23.9	24.7	26.6	27.9	29.8	31.1	33.0	34.3	35.5	38.1	40.0	41.9	44.4	57.1
USE																				
CUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16½	17	18	19
NO.																				
G-S	8.4	10.7	1/4	3	7	11	14	17	19	22	24	27	29	32	34	36	40	43	46	50
SIZES	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
	10.0	12.7	3	7	11	14	17	19	22	24	27	29	32	34	36	40	43	46	50	70



FITTING RING AND PA WATERPROOF CRYSTALS USING HP-5 SET

TO OPEN WATERPROOF WATCHES

Use case opener or hand press to open case so that crystal can be replaced.

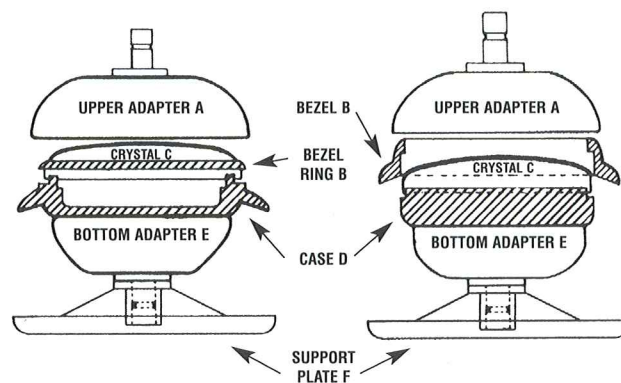
TO CLOSE WATERPROOF WATCHES

Illustrated are different styles of G-S crystals, together with the bezel and case for which they are intended. According to style case and crystal you are fitting, follow the corresponding instructions given with the illustrations:

BEZEL RING OR BEZEL TYPE

1. Use G-S crystal selected.
2. Place crystal (C) on case (D) and press all the way down by hand.
3. Select smallest upper adapter (A) just large enough to fit over crystal - not tightly. Snap adapter (A) into upper jaw of hand press.
4. Place support plate (F) in bottom of press. Select any bottom adapter (E) that gives support to case. Place adapter (E) into support plate and set case on it.
5. Place bezel or bezel ring (B) over crystal, and press parts together with gradual downward motion of handle.

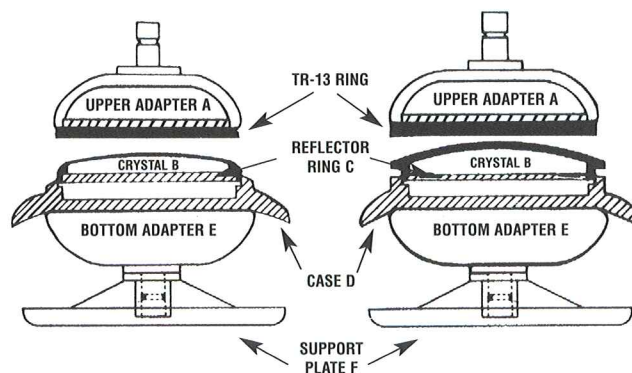
BEZEL RING OR BEZEL TYPE



REFLECTOR RING TYPE

1. Use G-S ring crystal selected.
2. Select largest upper adapter (A) with TR-13 plastic ring that fits on top of and near outside edge of crystal (B). Snap adapter (A) into upper jaw of hand press.
3. Place support plate (F) in bottom of press. Select any bottom adapter (E) that gives support to case (D). Place adapter (E) into support plate and set case on it.
4. Place crystal (B) over bezel opening and press into bezel with gradual downward motion of handle.

REFLECTOR RING TYPE



NOTES: The rubber plugs provided in the HP-5 Set are used for fitting Regular Round G-S Crystals with Hand Press H-1 or G-S Foot Machine. See fitting instructions on page 121.

When using plugs to fit Regular Round crystals in hand press, select largest cup (bottom adapter) so that crystal rests on edge of cup.

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CLOSING WATCH CASES WITH HP-5 OR HP-6 SET

DOMED ROUND AND CYLINDER FANCY CRYSTALS

1. **To Open Watches** (snap-fit style watch cases): Pry open with case opener to replace crystal, module, battery or make any other repairs.
2. **To Close Watches:** Select round metal adapter without plastic ring (plastic ring can be removed) slightly smaller than watch back. Snap adapter into upper jaw of press.
3. Place support plate in bottom of press. Select any round adapter with plastic ring large enough to support case and crystal. Place this adapter into support plate.
4. Before placing case in press for closing, manually place back onto watch case.
5. Place watch on adapter with dial or read-out facing down.
6. Having already manually centered watch back on case opening, press with gradual downward motion on handle, until watch back is closed.

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FLAT FANCY AND FLAT ROUND CRYSTALS, INCLUDING DIGITAL MODELS

1. **To Open Watches** (snap-fit style watch cases): Pry open with case opener to replace crystal, module, battery or make any other repairs.
2. **To Close Watches:** Select round metal adapter without plastic ring (plastic ring can be removed) slightly smaller than watch back. Snap adapter into upper jaw of press.
3. Place support plate in bottom of press. Select proper size rectangular metal adapter so that the walls of the adapter rest on the watch case and not on the crystal, to avoid damage to crystal. Place this adapter into support plate.
4. Before placing case in press for closing, manually place back onto watch case.
5. Place watch case on rectangular metal adapter with crystal, dial, or read-out facing down.
6. Having already manually centered watch back on case opening (making sure that bottom rectangular adapter is not touching crystal to avoid damage), press with gradual downward motion on handle until watch back is closed.

NOTE: In the HP-6 Set, there are empty holes in the box for other size adapters that can be ordered from your distributor. This Hand Press can be converted into an HP-5 Hand Press with the purchase of a Conversion Set. The Press can then be used to fit watch crystals and close watch cases (see pg. 118).

