Schulmerich Handbells
Care & Maintenance Manual

Schulmerich Bells

Handbells • MelodyChime™ Instruments
Electronic Carillons • Cast Bell Carillons

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GUIDE TO YOUR AMERICAN-MADE SCHULMERICH HANDBELLS

INTRODUCTION

Welcome to the growing Schulmerich family! We put a lot of ourselves into our handbells, and it delights us to know that you will soon be using them to make beautiful music, enjoy good fellowship and have great fun.

Your new handbells are 100% American made, guaranteed for life, and the finest handbells available anywhere. Schulmerich's Lifetime Guarantee covers the entire bell, from the tuned bell casting and the clapper assembly to the handle. We will give you the service and support you need, for as long as you own your Schulmerich handbells. No wonder Schulmerich bells are played by more churches, schools and institutions than any other. We are the oldest manufacturer of English handbells in North America, having started in 1962. We are proud that you have chosen to play them, too.

— Team Schulmerich

CARRYING CASES

Your cases are beautifully designed to transport or store your bells. Your cases take care of both of these problems, as well as providing additional storage space for maintenance tools and materials furnished with your bells. Your bells are received in plastic bags. Please do not use these bags for continued storage, as this may harm the highly polished finish on the bells. To maintain this jewel-like finish on the outside of the bells, it is important to avoid contact with rough or coarse materials, or touching them with the bare hand. If you do not own Schulmerich custom-designed carrying cases, we recommend that storage bags or pouches of soft materials, such as pacific cloth, flannels, or velvets be made for your bells. We also recommend that your cases be aired (in a dry environment) once a year.

INSPECTION UPON RECEIPT

Please take a few minutes to check your new bells for shipping damage. **It is the responsibility of the recipient to file a damage claim if such is necessary**. A tool kit and a specially treated polishing cloth encased in a plastic container are also included, with complete sets of bells. We suggest you review this instruction bulletin, and note pages of helpful illustrations that follow the text. A parts diagram is included for your ordering convenience, should the need arise.

GETTING TO KNOW YOUR BELLS

As you examine your bells, set a large one aside (a G4 provides good visibility of the internal parts and construction), so you can become familiar with some of its unique parts and features.

First, the Soft Touch™ plastic handle of polypropylene copolymer, features inlaid enharmonic musical note designations and a campaniform (bell picture). The campaniform shows the strike point side of the handbell, and is also used for rapid identification for those who use uneven spring tension adjustment. Two locating pin holes in the block, to which the handle is securely riveted, indicate the relationship of the handle to the striking plane of the clapper.

The striking plane of the clapper (selected at the factory as the point of "best response" which, when used as the strike point, creates the clearest tone) is fixed by an indexing pin in the casting to a hole located in the clapper yoke. As each bell is individually tuned, the optimum striking plane is permanently recorded by scribing an index mark along the inner surface of the bell casting. It is most important that no attempt be made to buff out this mark. Such attempts may result in detuning the bell. Schulmerich

bells offer an indexing pin (included in a Schulmerich patent) and inlaid enharmonic note designations with campaniform marking and Soft Touch durable handle.

Note the raised crown, or bell "tang," at the top of the bell. This Schulmerich exclusive helps produce greater amplitude.

Next examine the plastic handguard (Master Touch™ Guardian Disc) and notice that it carries the same plastic-coated note designation, as does the handle. This permits identification of the bell, whether the playing preference is to lay the bells on their sides or to stand them upright on their mouths, or by reading from the handle or handle disc respectively. This musical note system is in direct reference to that of the piano keyboard (Example: Middle C is C5.)

Now look into the mouth of the bell and notice the unique Select-A-Strike™ clapper that allows you nearly unlimited freedom for voicing your bells. (Or, you may have selected the Quick-Adjust™, which can be easily hand adjusted for Soft, Medium or Hard voice settings.)

Schulmerich manufactures two types of adjustable clappers:

Select-A-Strike	See Figure B on page 10
Quick-Adjust	See Figure A on this page

Select-A-Strike clappers are adjustable by securing the clapper head against the casting wall. then rotating the clapper screw slightly counter-clockwise until the clapper is free to rotate. Rotate the clapper to the desired position and secure the clapper head against the casting wall while retightening the screw. Quick-Adjust clappers (right) are adjustable without loosening the clapper screw. In fact, the clapper screw should never be turned. This screw is locked to the clapper shaft by a special chemical bond between the screw and shaft. To adjust, rotate clapper until it clicks into the desired position. **NOTE: DO NOT TAKE YOUR QUICK-ADJUST CLAPPER APART. THEY MUST BE RETURNED TO THE FACTORY FOR ANY REPAIRS NEEDED.**

On all bells C8 and below in pitch, three decidedly different impact tones (timbre) can be achieved. This permits a selection of mellow or brilliant tones to be generated in your bells, according to your tonal preference. These options provide a soft mellow strike tone designated by the letter "S" imprinted on the clapper insert, a medium tone designated by "M" on the insert, and a strong brilliant tone designated by "H" on the insert. Try it!

It is far better to have bells which musically have the same timbre than to have bells which are set on similar clapper settings to achieve a special effect.

Try our clapper and listen for these differences in timbre. First, with the felt material (G#4 and lower bells) striking the bell (the "S" plane of the clapper in the striking plane), strike the bell softly and then with a hard strike – while noting the low, mellow tones which result. Next, loosen the screw which holds the clapper, using the screwdriver furnished for this purpose – or just rotate it, if you have Quick-Adjust clappers – and turn the clapper so that the "M" plane of the clapper is oriented to strike. Adjust the clapper so that the center of the slot or hole in the "M" plane will contact with the side of the bell. Then tighten the clapper securely and again strike the bell softly and then with a hard strike, and note the medium, mellow tones which result. Now, loosen the clapper again, align the "H" plane to strike, tighten the screw, and again strike the bell and note the hard, brilliant tones which will result.

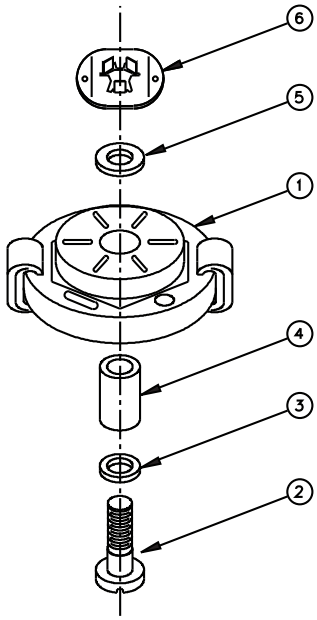


Figure A:
Parts of a Typical Quick-Adjust Clapper Assembly

1: Quick-Adjust clapper showing weights and detents

2: Shoulder screw

3: Fiber washer (no lubrication required)

4: Teflon bushing (no lubrication required)

5: Steel washer, as required (no lubrication required)

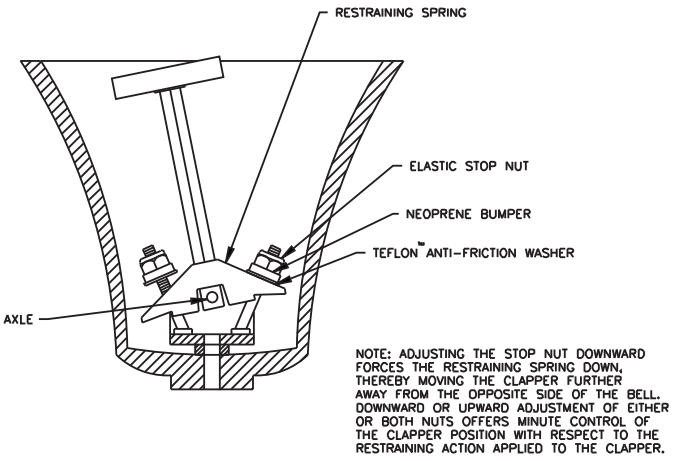
6: Detent spring

Bells higher in pitch than G#4 are equipped with clappers whose design does not include a felt striking position. As we progress higher than G#4, it is necessary to use harder impact materials to excite the higher tonal frequencies. Therefore, in ascending order, the clappers contain smaller slots or holes, or none at all in bells C#8 and above, in order to generate these higher frequencies. This is opposed to that of the larger bells where the purpose of the felt is to subdue the extraneous higher partials and thereby achieve a dominant strong fundamental and twelfth partial. Even in smaller bells, small changes in strike tone can be achieved by striking on the thicker or thinner areas of the clapper head since the thicker areas, being more resilient, provide a softer striking surface.

Now, look further down into the bell and examine the unique Micro-Adjust control at the bottom of the clapper shaft (below). Note the two elastic stop nuts (a type of high-friction nut that holds the position to which it is turned) which restrict the movement of the spring secured to the bottom of the clapper. Hold the clapper lightly to one side of the bell and, using the appropriate nut driver furnished (bells G2-F#3 use 3/8", bells G3-B5 use 5/16", and bells C6-C8 use 1/4" nut driver), turn the nut counter-clockwise and you will notice that the clapper moves closer to the side of the bell, thus requiring less effort to strike the bell. Now release the clapper and turn the nut clockwise (downward) and you will see the clapper move away from the side of the bell. The purpose of adjustment is to permit the selection of the desired clapper restraining action to suit the touch or feel of any bell ringer. Uneven adjustment of the nuts can be utilized to give an easier forward strike, or restrict the backstroke to avoid unwanted backrings.

Obviously, excessive downward adjustment of the nuts will require excessive effort to strike the bell since the clapper is held too far from the side of the bell. Excessive downward positioning of the nuts can overstress the spring to a point where spring failure could occur. Position nuts downward only as far as necessary to effect a smooth, easy and controlled strike. To achieve uniform tension settings throughout the handbell set, it is generally better to adjust for what is best for the bells, instead of what is preferred by individual ringers. Whatever method you use, make certain that each bell can pass the following tests:

- Check for a full dynamic range
- Check back ringing
- Check the “shake” technique (not applicable to bass bells), performed by striking the clapper head against both front and back casting walls
- Check that the clapper head strikes only once when playing a Martellato (table technique).



Operation of Micro-Adjust Strike Control
(Bell and yoke shown in cross-section)

CARING FOR YOUR BELLS

The following is an itemized list of suggestions compiled to help you get a lifetime of satisfaction from your Schulmerich bells:

Never put your bells away after playing or handling them without first having wiped them clean with the specially treated polishing cloth furnished as part of your accessory kit. Make this a rule and a habit. If left on, finger and hand marks, due to body salts and acids, will quickly etch and mar the bright, polished finish. The bell should be dry before using the polishing cloth. If the bell is badly

tarnished, a slight moistening of the tarnished surface by blowing on it will help. Rub the surface briskly with the outside of the polishing cloth, and then with the brown cloth, using the hands against the outside cloth to protect them from jeweler's rouge. Coloring on the hands is harmless and is easily washed off.

Should a bell become so badly tarnished that it cannot be cleaned with the polishing cloth, cleaning with a polish such as SIMICHROME®, available from Schulmerich, will remove most stubborn tarnish. When using polish, apply with a clean soft cloth or cheesecloth. Do not allow the polish to dry. Remove immediately following application.

DISASSEMBLY

If disassembly of a bell is necessary or desired for some reason, the hex ball driver furnished is the only tool needed. A look at the bell diagram, illustrated on page 10, Figure D, shows that the entire bell assembly is held together by means of one cap screw through the handle block, through the top of the bell, and then into a threaded hole in the yoke. Disassembly is performed by inserting the ball driver into the socket of the cap screw above the handle block and turning the screw counter-clockwise until its threads are free of the threaded hole in the yoke.

REASSEMBLY

To reassemble (see page 10, Figure D), replace the parts in the order illustrated in the diagram. Insert the cap screw with the washer beneath its head, through the center hole in the handle block. Place the yoke spacer bushing over the extension of the cap screw and, holding the yoke assembly by its shaft, turn the assembly clockwise, thereby drawing the screw extension into the threaded hole in the yoke. With these parts engaged, align the hole in the yoke with the extension of the index pin beyond the inside of the bell. Push the parts together, so that the yoke and handle are indexed by the pin and complete the tightening of the cap screw until it is drawn snug. **Note**: Over-tightening of the cap screw may (especially in the higher range of bells) result in a deadening of the bell tone – hence, draw the screw up snug, but not so tight as to deaden the tone or to bind the yoke assembly.

The clapper shaft in a Schulmerich bell generally requires no periodic oiling or lubrication.

Should the plastic handle become gummy from dirt accumulation after a time, cleaning can be easily accomplished with a cloth moistened with a lukewarm solution of water and mild detergent. The plastic material is unaffected by almost all strong chemicals and cleaning agents except benzene and carbon tetrachloride which **will** affect the plastic only after long contact with it – avoid their use.

In addition to the type of plastic used in the handle, your Schulmerich bell may use as many as four additional types. Different types of plastics are more or less susceptible to reaction with different types of chemicals and to different degrees. Many of today's better products include plastic parts and assemblies for the added advantages that plastics offer, and most reliable manufacturers caution against the use of various chemicals on their plastics. Schulmerich therefore recommends against the use of any chemicals either on its bell assemblies or in the storage container with the bells. In a closed container such as a carrying case, under certain conditions, a stored chemical can give off a gas that could react injuriously with one or more the plastics. For example, the fumes given off by ordinary mothballs can have damaging effects on plastic. So, play it safe, and don't put chemicals into your bell storage cases and follow the Schulmerich instructions for cleaning.

No special care is needed for the ruggedly built Schulmerich bell carrying cases. The plush-lined, profiled recesses for the bells in each of the available cases provide excellent resistance against abrasion and wear. The tough, black leatherette covering bonded to the exteriors of the cases will stand considerable abuse. Scuff marks on the finish, resulting from rough handling, can be simply touched-up with an application of one of several black self-shining liquid shoe polishes on the market, such as Scuff-Kote®.

REPAIRING YOUR BELLS

There need be no reluctance in disassembling your handbells. They have been designed so that you, the customer, can do repair work that will have no effect on the precision tuning of the bells.

SPRING REPLACEMENT – For bells with **Select-A-Strike clappers** and Elastothane™ or Pellethane* springs (also when replacing metal springs with Pellethane see Notes below and page 12).

Tools required:

1. Using the **hex ball driver** supplied, remove the cap screw located at the handle block. This completely disassembles the bell. Be careful not to lose any of the parts, particularly the spacer bushing that goes between the yoke assembly and the casting. Failure to reinsert this bushing could result in a tonally "dead" bell.

2. Using the **screwdriver**, remove the clapper and washer and set aside.

3. Using the **adjustment wrenche**s supplied, remove stop nuts, neoprene bumpers and anti-friction washers. (Rotate rather than pull.)

4. Remove the damaged spring by sliding toward the clapper end of the shaft (note springs fit snugly).

5. Inspect the clapper end of the shaft. If there are any sharp edges or burrs, remove them with a small file.

6. Place the Elastothane or Pellethane spring with the flat center portion on a board or other hard surface, and push down on the ends of the spring so as to open up the center hole. Insert the end of the hex shaft through the center hole, reverse the yoke and continue to push the spring down fully to straddle the block and be parallel with the sides of the "U" channel so that the studs are free from the sides of the slots.

6A. Springs are numbered for easy replacement:

#7 G2 thru F#3 (for bells shipped after 2-1-85)
#1 C3 thru F#3 (for bells shipped before 2-1-85)
#2 G3 thru B3
#3 C4 thru G#4 (see Notes)
#4 A4 thru B5
#5 C6 thru C7
#6 C#7 thru C8

On bells C#7 and higher, a metal spring is used. Its number is 10-2023-4. Please refer to the next section for replacing metal springs. Also available is a Pellethane spring for bells C#7 thru C8 for replacement purposes.

7. Replace the anti-friction washer, neoprene bumper and stop nut on each stud. Hand tighten now – and then adjust when the bell is together.

8. Bell reassembly: Please refer to Reassembly on page 5.

NOTES:

A. Metal springs were standard in all early Schulmerich bells, and certain small bells through late 1999/early 2000. These may be replaced with Pellethane springs. This is done by following the steps for replacement of bells with Select-A-Strike clappers. One additional step is required, after

* Trademark of the Dow Chemical Company

completing Step #3. With the yoke assembly out of the bell, use a pair of pliers to bend down and up on the metal spring leaf on each side of the yoke block until it breaks. Discard the pieces. The small section of spring remaining under the hex shaft need not be removed if it does not interfere with the installation of the new spring. Now, skip Step #4 and continue with Step #5.

B. Bell notes G3 thru B3 use two different widths of clapper shafts. Bells with Select-A-Strike clappers use a wider shaft and require a #2 Pellethane spring. Bells with Quick-Adjust clappers manufactured between 1979 and February 1985, require a #3 Pellethane spring.

SPRING REPLACEMENT – For **Quick-Adjust clappers** (also when replacing metal springs with Pellethane springs).

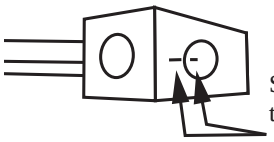
Tools required: Standard handbell tool kit with drift pin and small hammer.

1. Using the hex ball driver supplied, remove the cap screw located at the handle block. This completely disassembles the bell. Be careful not to lose any of the parts, particularly the spacer bushing that goes between the yoke assembly and the casting. Failure to reinsert this bushing could result in a tonally "dead" bell.

2. Using the adjustment wrenches supplied, remove the stop nuts, neoprene bumpers and anti-friction washers.

3. Place the yoke assembly on its side over the open vise (or hole in wooden block) and, using the drift pin, drive out the axle. This frees the shaft from the yoke channel.

4. Before proceeding further, scribe a mark on the bottom of the shaft and shaft block (see figure).



Scribe index marks on both the shaft and the shaft block.

5. Place the shaft assembly over the open vise (or a hole in a block of wood) and, using the drift pin drive the shaft out of the shaft block (never use pliers to do this, as it will damage the shaft and possibly break it).

6. Remove the broken spring and replace it with a new one of the proper size. The springs are numbered for easy replacement.

   #7 G2 thru F#2 (for bells shipped after 2-1-85)
   #1 C3 thru F#3 (for bells shipped before 2-1-85)
   #3 G3 thru G#4 (see Notes B above)
   #4 A4 thru B5
   #5 C6 thru C7
   #6 C#7 thru C8

   On bells C#7 and higher, a metal spring is used, its number is 10-2023-4. Also available is a Pellethane spring for bells C#7 thru C8 for replacement purposes.

7. Keeping in mind that the spring should be at a right angle to the shaft block, place the shaft in the hole in the shaft block, aligning previously applied scribe marks.

8. Using a hammer, gently tap block back onto the shaft. Stop to check frequently that alignment marks and hole for the axle line up. When the shaft bottom and the shaft block are flush, use the drift pin on either side of the block, and hammer the block down tight.

9. Now you are ready to reassemble the shaft assembly to the yoke block. Lay yoke block on its side over an open vise and place shaft assembly in channel, lining up the axle hole in the block with the nylon bearings. If you encounter difficulty in getting the shaft assembly between the nylon bearings, use blunt nose pliers as a wedge between the nylon bearings and spread the channel slightly.

10. On longer shafts (low bells), support the clapper end of the shaft to aid in lining up holes for the axle. If the holes are not lined up properly, when you drive in the axle it will destroy the nylon bearings when it passes through.

11. Before inserting the axle, use a screwdriver and hammer and place a nick in the center of the axle. This will aid the axle in gripping the hole into which it is driven and prevent it from loosening and falling out. Now place the axle into the axle hole and tap it in with a hammer.

12. Replace the anti-friction washer, neoprene bumper and stop nut on each stud. Hand tighten now, and then adjust when the bell is together.

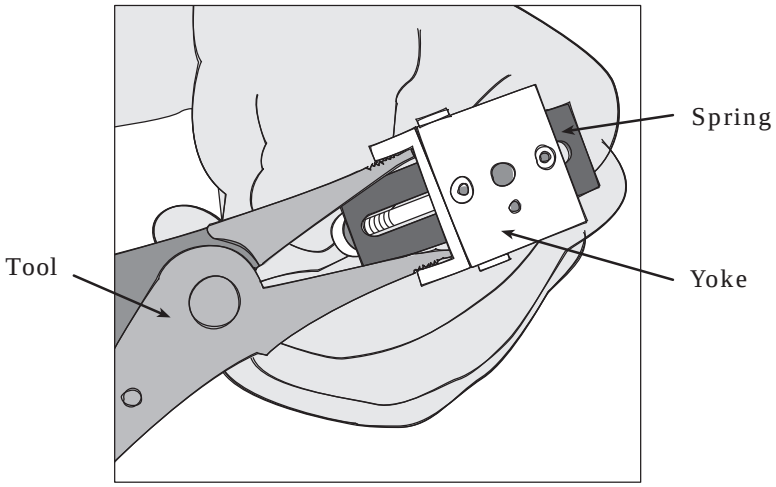
13. Bell Reassembly: Please refer to page 5.

STICKING CLAPPER SHAFTS

If you encounter sticking clapper shafts on bells G3 - C8 we recommend using the new **Yoke Adjustment Tool** available through Schulmerich Bells. This tool provides the best long term results, is less likely to damage any bell parts and is user-friendly.

NOTE: The Yoke Adjustment tool is designed to spread the inner walls of the yoke assembly outward, in order to free-up any binding which might occur. Also note, that the handbell should be **disassembled** before attempting the following procedure.

Using the Yoke Adjustment tool, gently insert the open ends of the tool into both ends of the yoke assembly and gently squeeze (see diagram); this applies outward pressure to the inside walls of the yoke assembly. It should not require a great deal of force. If the clapper shaft does not free itself up after two attempts, your problem might need professional assistance. Again, disassemble the bell before attempting this procedure.



Typical Yoke Adjustment Tool for Bells from G3 - C8

IF, in the event that a "yoke assembly adjustment tool" is not available, the problem may be addressed by a less preferred method. Take a thin bladed long shaft screwdriver and place it between the shaft block and the yoke channel and apply a **moderate twisting motion**. *If the shaft does not free itself, do not apply more force*. It is recommended to follow this procedure on both sides of the yoke assembly. Care should be given not to cause damage to any parts. It is not necessary to disassemble the bell for this procedure. This method may not provide long term results and should be viewed as a "temporary fix."

LOOSE CLAPPER SHAFTS

Loose or wobbly shafts can be detected by a rattling sound heard when the bell is struck. If you can hear a rattle and feel excessive side to side movement, you can take the following steps to correct it. (Remember that there must be some side movement to permit the bell to strike.)

Remove the yoke assembly from the bell by loosening the cap screw. Place the yoke block on its side over an open vise and gently compress vise. This will tighten the channel. Now reassemble the bell and you are ready to ring.

BUZZING TONE

This sometimes occurs in the larger bells. After determining that the bell is not cracked, ring the bell and hold the handguard firmly with your thumb. In most cases you will note the buzz is gone. If this is not the case, simply retighten the cap screw. If, after tightening the screw, the noise still persists when you remove your thumb from the handguard, loosen the handle to the point where the handguard easily spins. Move handguard slightly to one side and retighten the screw. This should correct the problem.

SQUEAKING YOKE ASSEMBLY

Apply one (1) pin drop of WD40 to each end of axle. DO NOT spray any other method of lubrication. Allow penetration for several minutes and then wipe off any access.

POLISHING THE BELLS

Polishing is necessary especially after exposure to a corrosive atmosphere such as salt air, etc., or having something spilled on the bells.

Always make sure to polish under the handguard, but be careful to wipe away all polish residue. On the smaller bells this will require disassembly. If this is not done, the bells will continue to tarnish. If let go, the tarnish will actually etch the bronze. If anything is spilled on the bells, clean it off immediately, as bronze is easily etched.

We recommend the use of SIMICHROME Polish, which can be purchased directly from Schulmerich.

Occasionally clean the inside of your bells with a clean, dry cloth.

We hope the above will aid you and help you further enjoy your Schulmerich handbells. If you have any further questions please feel free to contact us at any time; we will be glad to help you.

HANDBELL PART ORDERING INFORMATION

For part replacement, please refer to the following drawings. When ordering specify Bell Note, approximate age of bell if possible and the part(s) requested.

Figure: **A)** A yoke assembly includes a complete yoke with spring and shaft.

B) A clapper assembly is a complete clapper only.

C) Quick-Adjust clappers come as a unit including: yoke assembly, Shaft, spring, weights and complete clapper all totally assembled.

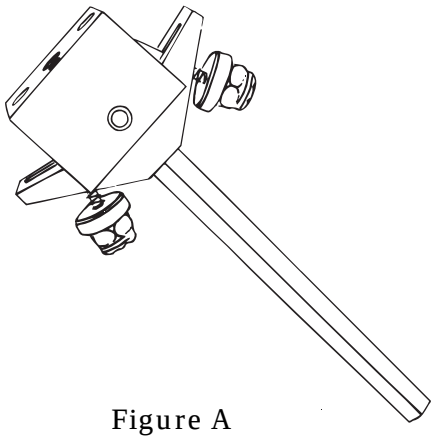


Figure A
Yoke Assembly

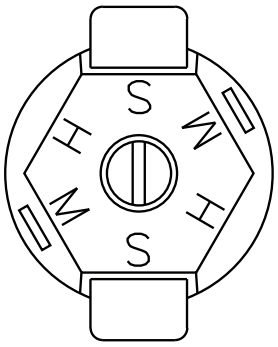


Figure B
Select-A-Strike Clapper

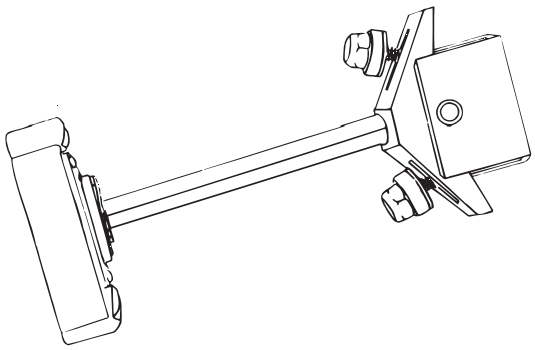


Figure C
Quick-Adjust Assembly

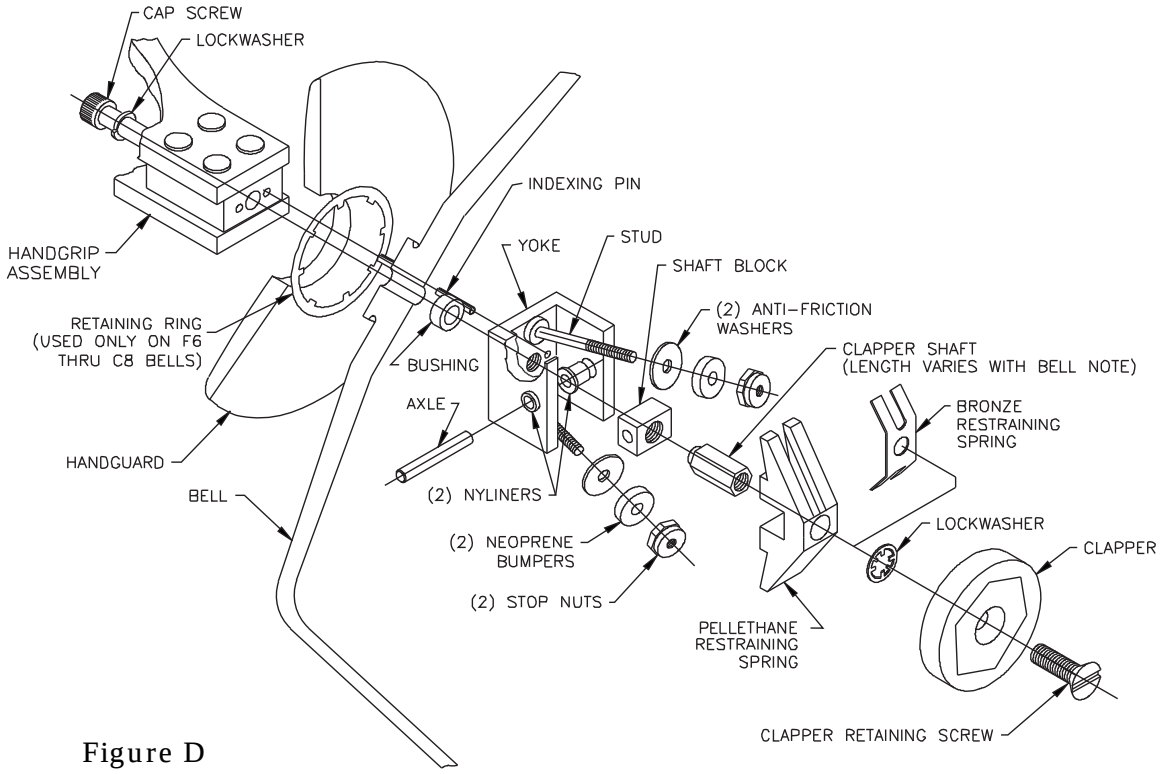


Figure D
Handbell Reassembly

VOICING YOUR HANDBELLS

Definition of Terms:

VOICING: The process of blending the tonal qualities (sound) of the bells together to bring about a consistent color or timbre.

VOICE BREAK: All octaves of handbells contain a variety of clapper sizes and density. The voice break is located where the clapper size, weight, and/or design changes, producing a timbre change.

Understanding Basic Patterns of Handbell Sound:

As pitch rises, clapper get smaller and harder.
As identical clappers proceed up the scale, the sound tends to become softer.
Bells to below the voice break tend to be darker/weaker in color and those above tend to be brighter/stronger. (There are some exceptions)

Voicing Procedures:

All handbell mechanisms (yoke assemblies)/clapper assemblies, must have proper tension settings.
Voicing Your Handbells:

1. Set all clapper heads at "Medium."
2. Beginning at the lowest musical pitch, work your way to the right playing at least 4-5 chromatic bells up the scale and then back down and past the handbell being voiced.
3. Listen for weak or strong handbells.
4. Rotate the clapper heads accordingly. (NOT ALL BELLS WILL BE SET AT THE SAME SETTING.)
5. For a more consistent sound and feel, use the same hand in voicing your bells.

Rotation of Clapper Head:

Select-A-Strike clappers use the entire 360° of the clapper head. Even a slight adjustment to the left or right of a particular setting will make a difference.

For bells with Quick-Adjust clappers, rotate the clapper head as desired.

Voicing Options:

You can exchange clappers of the same size and numeric designation and use them in different bells. (Experimental process in Select-A-Strike only.)

Different clapper materials used throughout the years have caused a variety of tonal colors. Some have become softer, while others have become hard. Newly designed and better blending clappers are available through Schulmerich.

REPAIRING YOUR BELLS
CHANGING TO A PELLETHANE SPRING FROM A BRONZE SPRING*

1. Using a screwdriver, remove clapper from bell. Set clapper aside.

2. Using hex wrench supplied, remove the crown retaining screw located in handle block. This completely disassembles the bell. Be careful not to lose any of the parts, particularly the spacer bushing that fits between the yoke assembly and the bell casting. Failure to reinsert this bushing will result in a tonally "dead" bell.

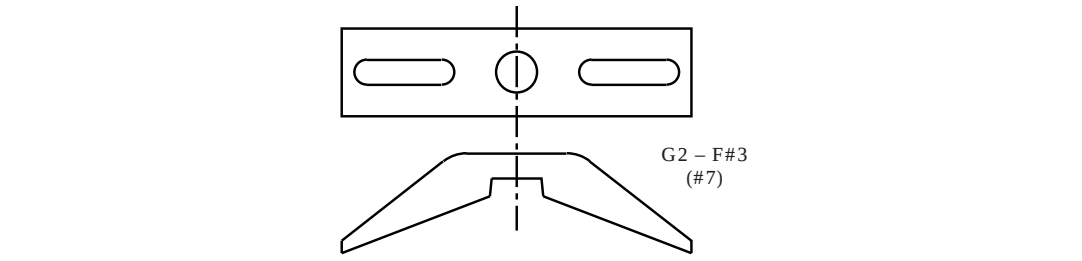
3. Using the adjustment wrenches supplied, remove the stop nuts, the neoprene bumpers and the antifriction washers.

4. With the yoke assembly out of the bell, use a pair of pliers to bend up and down on the metal spring leaf on each side of the shaft until it breaks off. Discard the pieces. The small sections of spring that remain under the shaft need not be removed if it is flat, but may be removed if it will interfere with proper seating of the new spring.

5. Place the Pellethane spring with the flat center portion on a board or other hard surface. Press down on the ends of the spring with one hand to expand the hole, while pushing the end of the shaft through the center hole. Reverse the yoke and continue to push the spring down fully, so that it straddles the block, and is parallel with the sides of the "U" channel of the yoke block If the studs are rubbing on the sides of the slots, use a needlenose pliers, or similar tool, to center the studs.

6. Replace the antifriction washer, neoprene bumper and stop nut on each stud on the yoke assembly.

7. Reassemble the yoke in the bell. Insert the crown retaining screw with lockwasher through the handle block, handguard and bell casting. Turn these so the open casting is up, then insert the spacer bushing on the screw. Start to screw the yoke assembly to the crown retaining screw until the index pin falls into the index hole. Now tighten the bell crown retaining screw and finish by using the hex wrench to tighten it securely. Replace the clapper and adjust the stop nuts to obtain the desired clapper restraining action.



G2 – F#3
(#7)

C3 – F#3
(#1 before 2/1/85)
G3 – B3
(#1 after 2/1/85)

G3 – B3
(#2 before 2/1/85)

C4 – G#4
(#3)

A4 – B5
(#4)

C6 – C7
(#5)

C#7 – C8
(#6)

* Schulmerich handbells shipped without metallic springs prior to late 1999/early 2000 used Elastothane springs. Later production uses Pellethane.

Schulmerich Handbell Parts List

	HANDLES		MASTER TOUCH DISCS		SELECT-A-STRIKE		QUICK-ADJUST
NOTE	*BLACK*	*GOLD*	*BLACK*	*GOLD*	*YOKE*	*CLAPPER*	*YOKE*
Part #	**56-188-**	**56-311-**	**20-739-**	**20-745-**	**56-233-**	**20-191-**	**56-265-**
G2	66	66	66	66	36	14	1
G#2	65		65		36	14	1
A2	64	64	64	64	35	14	2
A#2	63		63		35	14	2
B2	62	62	62	62	35	14	2
C3	61	61	61	61	33	14	4
C#3	60		60		33	14	4
D3	59	59	59	59	32	14	5
D#3	58		58		32	14	5
E3	57	57	57	57	31	14	6
F3	56	56	56	56	30	14	7
F#3	55		55		30	14	7
G3	49	49	49	49	27	12	8
G#3	48		48		27	12	8
A3	47	47	47	47	28	12	9
A#3	46		46		28	12	9
B3	45	45	45	45	29	12	10
C4	26	26	26	26	1	11	11
C#4	27		27		1	11	11
D4	28	28	28	28	2	11	12
D#4	29		29		2	11	12
E4	30	30	30	30	3	10	13
F4	31	31	31	31	4	10	14
F#4	32		32		4	10	14
G4	1	1	1	1	5	10	15
G#4	2		2		5	10	15
A4	3	3	3	3	6	2	16
A#4	4		4		6	2	16
B4	5	5	5	5	7	2	17
C5	6	6	6	6	8	2	18
C#5	7		7		8	2	18
D5	8	8	8	8	9	2	19
D#5	9		9		9	2	19
E5	10	10	10	10	10	3	20
F5	11	11	11	11	11	3	21
F#5	12		12		11	3	21
G5	13	13	13	13	12	3	22
G#5	14		14		12	3	22
A5	15	15	15	15	13	3	23

Schulmerich Handbell Parts List

	HANDLES		MASTER TOUCH DISCS[1]		SELECT-A-STRIKE[2]		QUICK-ADJUST[2]
NOTE	*BLACK*	*GOLD*	*BLACK*	*GOLD*	*YOKE*	*CLAPPER*	*ASSEMBLY*
Part #	**56-188-**	**56-311-**	**20-739-**	**20-745-**	**56-233-**	**20-191-**	**56-265-**
A#5	16		16		13	4	37
B5	17	17	17	17	14	4	24
C6	18	18	18	18	15	4	25
C#6	19		19		15	4	25
D6	20	20	20	20	15	4	25
D#6	21		21		16	4	26
E6	22	22	22	22	17	15	27
F6	23	23	23	23	18	15	28
F#6	24		24		18	15	28
G6	25	25	25	25	19	15	29
G#6	33		33		19	16	38
A6	34	34	34	34	20	16	30
A#6	35		35		20	16	30
B6	36	36	36	36	21	16	31
C7	37	37	37	37	22	16	32
C#7	38		38		23	17	33
D7	39	39	39	39	24	17	34
D#7	40		40		24	17	34
E7	41	41	41	41	25	17	35
F7	42	42	42	42	25	17	35
F#7	43		43		25	17	35
G7	44	44	44	44	26	17	36
G#7	50		50		26	17	36
A7	51	51	51	51	26	17	36
A#7	52		52		26	17	36
B7	53	53	53	53	26	17	36
C8	54	54	54	54	26	17	36
C#8	67		67		37	n/a	n/a
D8	68	68	68	68	37	n/a	n/a
D#8	69		69		37	n/a	n/a
E8	70	70	70	70	37	n/a	n/a
F8	71	71	71	71	37	n/a	n/a
F#8	72		72		37	n/a	n/a
G8	73	73	73	73	37	n/a	n/a

1 Master Touch discs used on handbells since August 1990. Older bells may be upgraded to Master Touch discs, which are of ergonomic design to reduce rubbing, chafing, and distal fatigue on the hand. The change requires different caps, screws, and indexing pins, sold on page 16,

2 Handbells G#6 through C7 used a #15 clapper up to June 1999. In the event one is replaced in this range with the #16 clapper, Schulmerich recommends all 5 be replaced. The same applies to bells with Quick-Adjust Assemblies.

Schulmerich Handbell Parts List

ITEM	*RANGE*	*STYLE*	*PART #*
Handle (Cap) Screw	G2 - F#3	ns	160-919
	C3 - E5	os	160-360
	G3 - C8	a	160-360
	C#8 - G8	a	160-368
Clapper Screw	G2 - G#4	ns	160-211
	C3 - D#3	os	160-900
	E3 - G#4	a	160-211
	A4 - C8	a	160-210
	C#8 - G8	na	
Axle	G 2 - F#3	ns	10-3468-0
	C3 - F#3	os	10-2033-3
	G3 - G#4	a	10-2033-2
	A4 - C8	a	10-2033-1
	C#8 - G8	na	
Anti-Friction Washers (12)	G2 - F#3	ns	20-194-4
	C3 - F#3	os	20-194-1
	G3 - B5	a	20-194-1
	C6 - C8	a	20-194-2
	C#8 - G8	na	
Neoprene Bumpers (12)	G2 - F#3	ns	20-192-3
	C3 - F#3	os	20-192-1
	G3 - B5	a	20-192-1
	C6 - C8	a	20-192-2
	C#8 - G8	na	
Bearings/Nyliners (12)	G2 - F#3	ns	10-3473-0
	C3 - F#3	os	20-417
	G3 - C8	a	20-231
	C#8 - G8	na	
Pellethane[1] and Elastothane[2] Springs	G2 - F#3	ns	20-407-7
	C3 - F#3	os	20-407-1
	G3 - B3	ns	20-407-1
	G3 - B3	os standard	20-407-2
	G3 - B3	os Q/A	20-407-3
	C4 - G#4	a	20-407-3
	A4 - B5	a	20-407-4
	C6 - C7	a	20-407-5
	C#7 - C8	a	20-407-6
	C#8 - G8	na	

ITEM	*RANGE*	*STYLE*	*PART #*
Bronze Springs *(Only for bells originally with bronze springs!)*	C3 - G#4		10-2023-1
	A4 - B5		10-2023-2
	C6 - C7		10-2023-3
	C#7 - C8		10-2023-4
Stop Nuts (lot of 12)	G2 - F#3	ns	160-552
	C3 - F#3	os	20-354
	G3 - B5	a	20-354
	C6 - C8	a	20-353
	C#8 - G8	na	
Handle Lockwasher (split ring) (12)	G2 - F#3	ns	160-920
	C3 - F#3	os	10-2475-
	G3 - G8	a	10-2475-
Clapper Lockwasher	G2 - C8	a	160-450
	C#8 - G8	na	
Yoke Spacer (spacer bushing)	G2 - F#3	ns	20-722
	C3 - F#3	os	20-433
	G3 - G#4	a	20-433
	A4 - C8	a	10-2502-
	C#8 - G8	na	
Index Pin	G2 - F#3	ns	10-3474-
	C3 - F#3	os	10-2490-
	G3 - E5	a	10-2490-
	F5 - C8	a	10-3475-
	C#8 - G8	a	10-2489-
Felt (2)	G2 - G#4	a	17-45
Felt Pin (2)	G2 - G#4	a	10-2490-
“O” Rings* (25)	G4 - G6		20-166

*Available only for Model 500 bells with “O” Rings.

Clapper Washer Weight	E3 - F#3	10-3023-	need 1
	G3 - D#4	10-2039-	need 2
	E4 - G#4	10-2039-	need 1
Restraining Ring	F6 - C8		20-406
Axle Screw	G2 - F#3	ns	160-921

1 Prior to late 1999/early 2000, Elastothane was used.

2 These may be replaced with Pellethane springs. See part numbers in section above.

Schulmerich Handbell Parts List

ITEM	*RANGE*	*STYLE*	*PART #*
Tools			
Drift Pin			10-2972-
Ball Driver	G2 - G8		57-183-010
1/4" Nut Driver	G6 - C8		57-183-020
5/16" Nut Driver	G3 - B5		57-183-030
3/8" Nut Driver	G2 - F#3	n/s	47-182
Screwdriver	G2 - C8		57-183-040
Phillips Screwdriver	C#8 - G8		57-183-070
L-Key	G2 - G8		57-183-050
Tool Box			57-183-060
Wooden Block			56-0263
Yoke Adjust. Tool	G3 - C8		10-3585-010

FOR BELLS WITH MASTER TOUCH DISCS
Schulmerich started using Master Touch Discs in August 1990.

Handle (Cap)	G2 - F#3	ns	160-919
Screws	G3 - G#3	a	160-940
	A3 - B3	a	160-941
	C4 - C#4	a	160-940
	D4 - E5	a	160-941
	F5 - C8	a	160-360
	C#8 - G8	a	160-368
Index Pins	G2 - F#3	ns	10-3474-
	G3 - E5	a	10-3525-
	F5 - C8	a	10-3475-
	C#8 - G8	a	10-2489-

ANY LARGE FIFTH OCTAVE BELLS (C3 through F#3 PURCHASED BEFORE 1985 MUST BE RETURNED TO THE FACTORY IN ORDER TO HAVE THE LARGE 2" X 2" YOKE ASSEMBLY INSTALLED.

NOTES:

"n/a" means these parts are not available for these bells. The entire yoke assembly must be purchased.

The "STYLE" column abbreviations are as follows:

"os" In lower 5th and 6th octave bells, this designates these bells without the large 2" x 2" yoke. In other octave bells it designates previous designs.

"ns" In lower 5th and 6th octave bells, this designates these bells with the large 2" x 2" yoke. In other octave bells it designates previous designs.

"a" All Schulmerich handbells

"na" Not available

Trouble Shooting Common Problems

Buzzing Sounds:

1) Check Guardian disc . . . . . .Loosen handle and rotate disc (old style only)
   - Master Touch Disc will require complete removal of the handle
2) Check anti-friction washers . . . . . .Replace
3) Check condition of “bronze” springs . . . . . .Replace with Pellethane springs
4) Check casting for cracks . . . . . .Consult local handbell representative or Schulmerich
5) Check handle and cap screw . . . . . .Tighten cap screw (do not over tighten)
6) Check clapper head screw . . . . . .Tighten clapper screw

Dull Tone Or Too Little Sound:

1) Check handle cap screw . . . . . .Cap screw is too tight; loosen screw
2) Check for missing spacer . . . . . .Disassemble bell and insert spacer in proper location
3) Check clapper head . . . . . .Rotate clapper head or replace

Pitch Changes:

1) Check for cracked casting . . . . . .Send to Schulmerich or contact representative
2) Check room temperature . . . . . .Allow bells to reach room temperature before playing
   - Store bells in more constant environment

(Note: Cold days will cause pitch to rise, hot days will cause pitch to lower. Temperature variation also affects human hearing!)

Yoke Assembly Problems:

1) Inconsistent ringing . . . . . .Check tension adjustments
2) Back ringing . . . . . .Check tension adjustments
3) Uneven handbell shakes . . . . . .Check tension adjustments
4) Slow moving clapper assembly . . . . . .Spread yoke channel
   - Check yoke stud & axle spring alignment
   - Check and clean axle
   - See local representative

Broken Springs

1) Broken springs . . . . . .Replace spring with Pellethane springs

Loose Or Rotating Handles Or Clapper Assemblies

1) Check for broken or missing index pins . . . . . .Replace
2) Check handle lock-washer . . . . . .Replace

Care & Maintenance Schedule Guidelines

Daily/Weekly

Wipe off handbell castings after use by polishing with polishing cloth.

- Minor marks can be wiped off with outside chamois section.
- If tarnish/fingerprints are worse, use the rouge section of the outside chamois section.
- Be sure to wipe off the red rouge from the castings and bell parts.
- Do not rouge inside the castings.

Report/Note any mechanical or audible changes to your Handbell Director.

Dry wipe inside the castings with a lint-free cloth.

Store handbells in a constant room temperature if possible.

Monthly

Snug/Tighten handbell handle screw with hex ball driver. (Do not over-tighten!)

Snug/tighten clapper head screws on Select-A-Strike™ Standard assemblies.

Adjust spring tension, especially if temperature changes have occurred.

Spot polish excessive tarnish or marks on casting exteriors.

Inspect all parts and mechanism alignments.

Bi-Annually

Polish castings with SIMICHROME polish if needed.

Listen to the voicing of the clapper heads.

Check spring tension adjustments.

Clean yoke assembly parts with a brush.

Inspect all parts.

Yearly

Open cases, remove handbells, and air out cases for 40 – 48 hours.

Inspect cases for damage, and repair as needed.

Use Armor-All™ or similar product on outside of cases. Touch up scuff marks with black shoe polish.

Repair damaged locks and latches.

Vacuum all cases.

Clean handles and discs in mild solution of water and soap with damp cloth.

Please note: Fingerprints and hand marks, if left on, will quickly etch the casting surface due to body salts and acids. This schedule is provided as a guideline. The activities undertaken may be adjusted depending on your use of the bells and the playing environment.

INFORMATION OF INTEREST

Caution should be exercised when transporting handbells in extremely cold weather. Allow sufficient time for all parts to reach room temperature before the bells are struck.

FACTORY REFURBISHMENT AND REPAIR:

Schulmerich Handbells can be readily maintained by the user. However, nobody knows your bells like the people who made them. For those who want to schedule a factory refurbishment and repair, for complete octaves or individual bells, we offer three options.

1. Complete refurbishment, including replacement of all parts (except bell casting) and cases.

2. Complete refurbishment, including all parts, without replacing cases.

3. Polishing and cleaning, including replacement of parts (except bell casting) where necessary.

Each of the above services includes handbell disassembly, cleaning and polishing of the bell castings, reassembly, tuning check, ringing check, visual check and placing the refurbished handbells in plastic bags. Where cases will not be replaced, we will vacuum the inside and use a spray cleaner on the outside.

You may contact us directly at our Sellersville Headquarters, where all factory refurbishing work will be scheduled. For an appointment, you may use our toll free telephone number: 1-800-423-7464.

We assure you that the refurbishment will be done at the highest possible quality level and in a timely fashion.

THE SCHULMERICH LIFETIME GUARANTEE

Schulmerich Handbells purchased from Schulmerich after May 15, 1984 carry our LIFETIME Guarantee on the ENTIRE HANDBELL.

Under this Guarantee, Schulmerich agrees to repair or replace with identical or similar part, any defective part, at no charge, when such part is returned postage paid to Schulmerich Bells, Carillon Hill, P.O. Box 903, Sellersville, Pennsylvania, 18960-0903.

This is the limit of Schulmerich's liability under this Guarantee.

This Guarantee is extended to the original purchaser only, and is non-transferable. It does not cover damage arising from misuse or mishandling.

This Guarantee gives you specific legal rights,and you may have other rights, which vary from state to state.

Schulmerich Carillons, Inc., Carillon Hill
P.O. Box 903 Sellersville, PA 18960-0903

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Electronic Carillons • Cast Bell Carillons
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