

English

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## IMPORTANT SAFETY RULES

Read, understand, and follow  
all instructions carefully before  
installing and using this product.

# OWNER'S MANUAL

## Krystal Clear™ Sand Filter Pump Model SF90110T



For illustrative purposes only.

Don't forget to try these other fine Intex products: pools, pool accessories, inflatable pools and in-home toys, airbeds and boats available at fine retailers or visit our website.

Due to a policy of continuous product improvement, Intex reserves the right to change specifications and appearance, which may result in updates to the instruction manual without notice.



## IMPORTANT! DO NOT RETURN PRODUCT TO STORE

To purchase parts and accessories or to obtain non-technical assistance, Visit

**[www.intexcorp.com](http://www.intexcorp.com)**

For technical assistance and missing parts call us toll-free (for U.S. and Canadian Residents):

**1-800-234-6839**

Monday through Friday, 8:30am to 5:00pm Pacific Time

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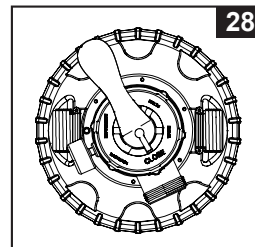
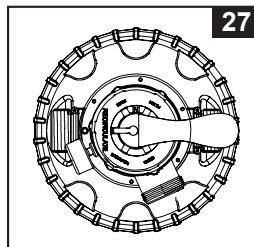
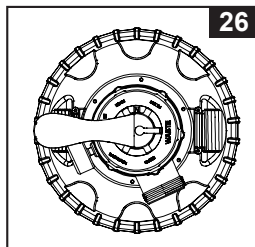
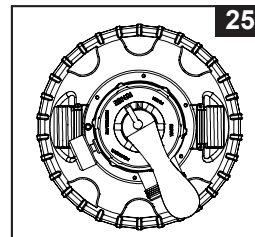
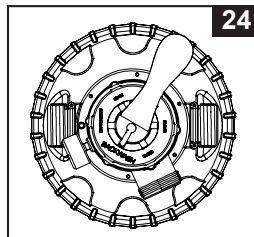
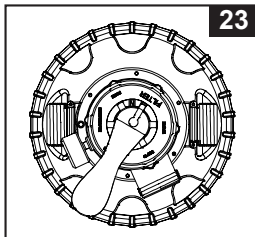
## OPERATING INSTRUCTIONS

### WARNING

- Risk of electric shock. Connect this product only to a grounding type receptacle protected by a ground-fault circuit interrupter (GFCI) or residual current device (RCD). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI/RCD. Use a qualified electrician to install the GFCI/RCD, which has a maximum rate of 30mA. Do not use a portable residual current device (PRCD).
- To reduce the risk of electric shock, do not use extension cords, timers, plug adaptors or converter plugs to connect unit to electric supply; provide a properly located outlet.
- Do not attempt to plug in or unplug this product while standing in water or when your hands are wet.
- Never operate this product above the maximum working pressure stated on the filter tank.
- Always switch off pump before changing the 6-way valve position.
- Operating this product without water flowing through the system can cause a build up of hazardous pressure which can result in an explosive situation, serious injury, property damage or death.
- Never test this pump with compressed air. Never operate the system with water temperature above 35° C (95° F).

#### 6-way valve positions and function:

Valve Position	Function	Water Flow Direction
<b>FILTER</b> (see drawing 23)	Normal filtration and regular vacuuming of pool	From pump through filter media to pool
<b>BACKWASH</b> (see drawing 24)	Reverses water flow to clean filter media	From pump through filter media to valve waste/drain outlet
<b>RINSE</b> (see drawing 25)	For initial startup cleaning of the sand, and leveling the sand bed after backwashing	From pump through filter media to valve waste/drain outlet
<b>WASTE</b> (see drawing 26)	For vacuuming directly to waste, lowering pool level or to drain the pool	From pump to valve waste/drain outlet bypassing the filter media
<b>RECIRCULATE</b> (see drawing 27)	For circulating water back to pool without going through the filter media	From pump through valve to pool bypassing the filter media
<b>CLOSED</b> (see drawing 28)	Shuts off all flow to filter and pool "Do not use this setting with pump running"	



## OPERATING INSTRUCTIONS (continued)

### Initial startup and operation:

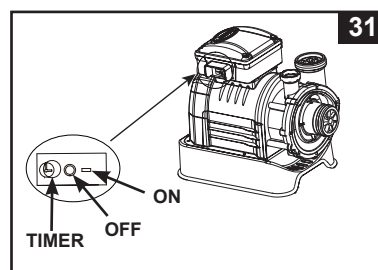
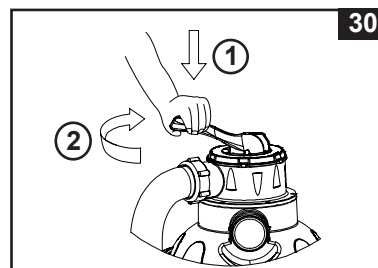
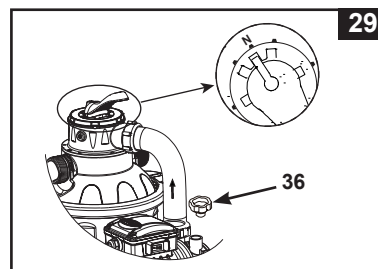
#### Before operating, be sure that:

- All the hoses have been connected and tightened securely, and correct amount of filter sand have been loaded.
- The entire system is connected to a grounding type receptacle protected by a ground-fault circuit interrupter (GFCI) or residual current device (RCD).

## ⚠ CAUTION

The filter control valve has a closed position. The pump should never be on when the valve is in the closed position. If the pump is operated with the valve closed, explosive situation could exist.

1. Turn both plunger valve handles fully counter-clockwise until they stop. This opens the valves to allow water to flow into the sand filter pump.
2. **Release air from the system** - Ensure the drain/waste outlet on the 6-way valve is not covered and directed to a proper draining receptacle, and the pump is off. Turn the 6-way valve to the "N" position and unscrew the air release valve (36) from the motor housing (see drawing 29). When water starts flowing out of the air release valve hole, close the air release valve back.
3. Ensure the pump is off, depress the 6-way valve and turn it to the "BACKWASH" position (see drawings 24 & 30). **IMPORTANT: To prevent damage to the 6-way valve, always depress the valve handle before turning. Always switch off pump before changing the 6-way valve position.**
4. Switch on the pump (see drawing 31). Water is circulating backward through the sand media and to waste/drain outlet. Backwash until a clear flow of water is observed in the waste/drain outlet or through the transparent outlet adaptor. **NOTE:** The initial backwash of the filter is recommended to remove any impurities or fine sand particles in the sand media.



## OPERATING INSTRUCTIONS (continued)

5. Switch off the pump, change the 6-way valve to "RINSE" position (**see drawing 25**).
6. Switch on the pump and run the pump for about one minute to level out the sand bed after backwashing the sand media.
7. Switch off the pump, change the 6-way valve to "FILTER" position (**see drawing 23**).
8. Switch on the pump. The system is now operating in the normal filtering mode. Run the pump until the desired pool water clearance is obtained and no more than 12 hours per day.
9. Record the initial pressure gauge reading when the filter media is clean.

**NOTE:** During initial setup of the system, it may be necessary to backwash frequently due to unusual heavy dirt present in the water and sand. After that, as the filter removes dirt and impurities from the pool water, the accumulated dirt in the sand media will cause the pressure to rise and the flow to diminish. If there is no vacuuming device attached to the system and the pressure gauge reading is in the yellow zone it is time to backwash the sand media, see "BACKWASH" under "initial startup and operation" section. Vacuuming device (i.e. Intex auto pool cleaner) attached to the system may also cause the flow to diminish and the pressure to rise. Remove any vacuuming device from the system and check if the pressure gauge reading has dropped from the yellow zone to the green zone.

## IMPORTANT

The filter pump running time should be 1 hour longer than the required operating time of the Saltwater System.

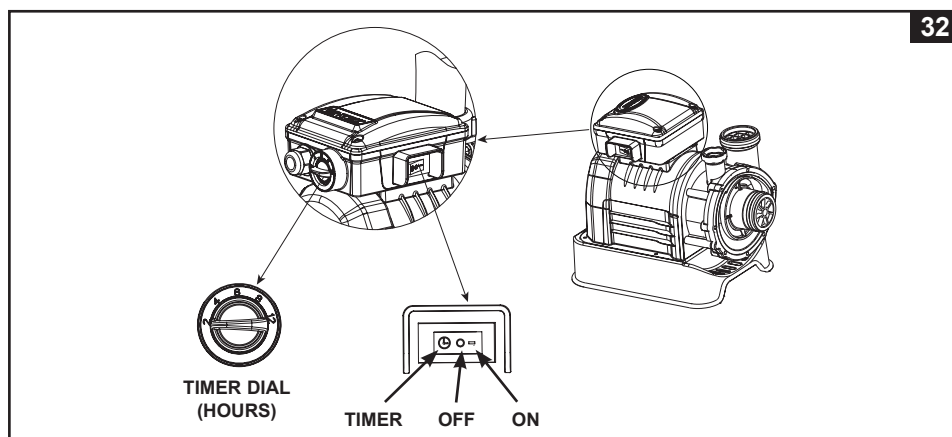
### Operating the system under "TIMER" mode or manually:

#### To operate the sand filter pump in "FILTER" mode under "TIMER" control:

- A. Set the timer dial to the desired operating hours. See operation time table (**see drawing 32**).
- B. Turn on the pump by pressing the switch to "⊕" position, the sand filter pump is now filtering the water and will stop after the operating hours are completed. The built-in timer will now operate for the number of hours selected at the same time each day.
- C. Operating hours can be re-adjusted if necessary. Follow step A – B.

#### To operate the sand filter pump manually (without the "TIMER" mode):

- A. Turn on the pump by pressing the switch to "–" position, the sand filter pump is now filtering the water.
- B. To turn off the pump, press the switch to "O" position.



## INTEX POOLS OPERATING TIME TABLE (WITHOUT INTEX SALTWATER SYSTEM)

This table shows the required operating time for average use of the sand filter pump with above ground pools.

If the system is attached to an "Intex Saltwater System" unit, the filter pump running time should be longer than the required operating time of the Intex Saltwater System unit.

Pool Size		Water Capacity (Calculated at 90% for Frame Pool and 80% for Easy Set & Oval Pool)		Sand filter pump operating time (For one cycle) / (Hours)
		(Gals)	(Liters)	
INTEX ABOVE GROUND POOLS (AGP's)				
EASY SET® POOL	15' x 33" (457cm x 84cm)	2587	9792	4
	15' x 36" (457cm x 91cm)	2822	10681	4
	15' x 42" (457cm x 107cm)	3284	12430	4
	15' x 48" (457cm x 122cm)	3736	14141	4
	16' x 42"(488cm x 107cm)	3754	14209	4
	16' x 48" (488cm x 122cm)	4273	16173	6
	18' x 42" (549cm x 107cm)	4786	18115	6
	18' x 48" (549cm x 122cm)	5455	20647	6
	18' x 52" (549cm x 132cm)	5894	22309	6
ROUND METAL FRAME POOL	12' x 36" (366cm x 91cm)	2086	7896	4
	15' x 36" (457cm x 91cm)	3282	12422	4
	15' x 42" (457cm x 107cm)	3861	14614	4
	15' x 48" (457cm x 122cm)	4440	16805	6
	16' x 48" (488cm x 122cm)	5061	19156	6
	18' x 48" (549cm x 122cm)	6423	24311	8
	18' x 52" (549cm x 132cm)	6981	26423	8
ULTRA FRAME POOL	12' x 36" (366cm x 91cm)	2086	7896	4
	14' x 48" (427cm x 122cm)	3861	14614	6
	16' x 48" (488cm x 122cm)	5061	19156	6
	18' x 48" (549cm x 122cm)	6423	24311	8
	18' x 52" (549cm x 132cm)	6981	26423	8
SEQUOIA SPIRIT® POOL SET	16'8" x 49" (508cm x 124cm)	5061	19156	6
	18'8" x 53" (569cm x 135cm)	6981	26423	8
OVAL FRAME POOL	18' x 10' x 42" (549cm x 305cm x 107cm)	2885	10920	4
	20' x 12' x 48" (610cm x 366cm x 122cm)	4393	16628	6
	24' x 12' x 48" (732cm x 366cm x 122cm)	5407	20465	6
	28' x 12' x 48" (853cm x 366cm x 122cm)	6420	24300	8
RECT. ULTRA FRAME POOL	15' x 9' x 48" (457cm x 274cm x 122cm)	3484	13187	6
	18' x 9' x 52" (549cm x 274cm x 132cm)	4545	17203	6

## NON-INTEX POOLS OPERATING TIME TABLE

This table shows the required operating time for average use of the sand filter pump with above ground pools.

Water Capacity		Sand filter pump operating time (For one cycle)
(Gals)	(Liters)	(Hours)
3000	11355	4
4000	15140	4
5000	18925	6
6000	22710	6
7000	26495	8
8000	30280	8

## POOL CARE & CHEMICALS

- All pools require care to keep the water clear and hygienically clean. With proper chemical control, your filter will help attain this objective. Consult your pool supply dealer for instructions regarding the proper use of chlorine, algaecide and other chemical agents required for sparkling clear water.
- Keep pool chemicals away from children.
- Do not replenish chemicals in pool while pool is occupied. Skin or eye irritations could occur.
- Daily pH checking and chemical treatment of the water is very important and cannot be overemphasized. Chlorine, algaecide and maintenance of proper pH levels are required when filling the pool as well as during the season. Consult your local swimming pool supply store for instructions.
- The season's first filling of the pool may have brackish water requiring extra water additives and extra filtering time. Do not allow swimming in pool until the pH level is balanced. Consult your local swimming pool supply store for instructions.
- Chlorinated water may damage lawns, gardens or shrubbery as children play in the pool and splash water outside the pool. Lawn areas underneath the pool liner will be destroyed. Note that some types of grass may grow through the liner.
- Filter run time depends on pool size, weather and usage level. Experiment with various run times so as to produce clean clear water.

### ⚠ CAUTION

Concentrated chlorine solutions may damage the pool liner. Always follow the chemical manufacturer's directions, and the health and hazard warnings.

## LONG TERM STORAGE & WINTERIZATION

### ⚠ CAUTION

Allowing the water to freeze will damage the sand filter and void the warranty. If anti-freeze solution is needed, use only propylene glycol. Propylene glycol is non-toxic and will not damage plastic system components; other anti-freezes are highly toxic and may damage plastic components in the system.

1. Before emptying your pool for long term storage, or relocation, be sure the water is directed towards an acceptable drain water receptacle away from the house. Check local regulations for specific directions regarding disposal of swimming pool water.
2. Switch off the unit, and disconnect power cord from electrical outlet.
3. When the pool is empty, disconnect all hoses from pump and plunger valves and remove the strainers/plunger valves from the pool wall.
4. In a counter clockwise motion unscrew the drain valve cap (9) from the drain valve to thoroughly drain the tank. The drain valve is located at the bottom of the filter tank.
5. Disassemble the pump motor from the tank base.
6. Leave sand filter pump pieces and hoses outside to thoroughly air dry.
7. Coat the following o-rings and washers with petroleum jelly for long term storage:
  - L-shape o-rings (11 & 18).
  - Pump hose o-rings (22).
  - Strainer valve assembly step washers (23).
  - Flat strainer rubber washers (25).
8. Depress the 6-way valve handle and rotate so as to set the pointer on the valve top "N" position. This allows the water to drain from the valve. Leave the 6-way valve in this inactive position.
9. It is best to place all dry pieces and pump motor in the original packaging for storage. To avoid condensation or corrosion problem, do not cover or wrap pump motor with plastic bags.
10. Store the pump motor and accessories in a dry place. The storage's temperature should be controlled, between 0 degrees Celsius (32 degrees Fahrenheit) and 40 degrees Celsius (104 degrees Fahrenheit).



**TROUBLESHOOTING GUIDE**

TROUBLE	CAUSE	SOLUTION
FILTER MOTOR FAILS TO START	<ul style="list-style-type: none"> <li>The motor is not plugged in.</li> <li>The GFCI/RCD circuit breaker is tripped.</li> <li>Motor too hot and overload protection is shut off.</li> </ul>	<ul style="list-style-type: none"> <li>Line cord must be plugged into a 3 wire outlet that is protected by a Class A Ground Fault Circuit Interrupter, or RCD.</li> <li>Reset circuit breaker. If circuit breaker trips repeatedly, your electrical system may have a defect. Turn off circuit breaker and call an electrician to correct the problem.</li> <li>Let the motor cool down and restart again.</li> </ul>
FILTER DOESN'T CLEAN POOL	<ul style="list-style-type: none"> <li>Improper chlorine or pH levels.</li> <li>No filtering media in tank.</li> <li>Wrong 6-way valve setting position.</li> <li>Excessively dirty pool.</li> <li>The strainer screen is restricting the water flow.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the chlorine and pH level. Consult your local swimming pool supply stores.</li> <li>Load with filter sand, see "sand loading instructions".</li> <li>Set valve to "FILTER" position.</li> <li>Operate the filter for longer periods.</li> <li>Clean the strainer screen at the inlet.</li> </ul>
FILTER DOESN'T PUMP WATER OR FLOW IS VERY SLOW	<ul style="list-style-type: none"> <li>Trapped air in the system.</li> <li>Clogged inlet or discharge.</li> <li>An air leak on the intake line.</li> <li>Excessively dirty pool.</li> <li>Sand media clogged with dirt.</li> <li>Nozzle and strainer connections are reversed.</li> <li>Crusting or caking on the filtering sand surface.</li> <li>Pool vacuuming device attached to the system.</li> </ul>	<ul style="list-style-type: none"> <li>Release the air, see operating instructions section.</li> <li>Clear any obstructions in the intake hose by discharging it inside pool wall.</li> <li>Tighten hose nuts, check hoses for damage, check pool water level.</li> <li>Backwash filter.</li> <li>Install the nozzle at the upper position of the pool inlet, and the strainer at the lower position of the pool outlet.</li> <li>Remove about 1" of sand if necessary.</li> <li>Remove any pool vacuuming device attached to the system line.</li> </ul>
PUMP DOESN'T WORK	<ul style="list-style-type: none"> <li>Low water level.</li> <li>Strainer screen clogged up.</li> <li>An air leak on the intake hose.</li> <li>Faulty motor or the impeller is jammed.</li> </ul>	<ul style="list-style-type: none"> <li>Fill pool to correct water level.</li> <li>Clean strainer screens at pool inlet.</li> <li>Tighten hose nuts, check hose for damage.</li> <li>Contact Intex service center.</li> </ul>
6-WAY VALVE/ COVER LEAKING	<ul style="list-style-type: none"> <li>Sand tank o-ring missing.</li> <li>Sand tank o-ring dirty.</li> <li>Flange clamp not tight.</li> <li>6-way valve damage.</li> </ul>	<ul style="list-style-type: none"> <li>Remove 6-way valve cover and ensure the o-ring is in place.</li> <li>Clean sand tank o-ring with garden hose water.</li> <li>Tighten the clamp with wrench supplied.</li> <li>Contact Intex service center.</li> </ul>
HOSE LEAKING	<ul style="list-style-type: none"> <li>Hose nut not securely tight.</li> <li>Hose connection fitting o-ring/L-shape o-ring missing.</li> </ul>	<ul style="list-style-type: none"> <li>Tighten/reinstall hose nut.</li> <li>Ensure o-ring/L-shape o-ring is in place and not damaged.</li> </ul>
TIMER IS INACCURATE OR TIMER CAN'T BE SET	<ul style="list-style-type: none"> <li>Possible inner timer defective.</li> </ul>	<ul style="list-style-type: none"> <li>Turn off the pump and restart 5 minutes later.</li> <li>Re-set the timer.</li> <li>Contact Intex service center.</li> </ul>
PRESSURE GAUGE DOESN'T WORK	<ul style="list-style-type: none"> <li>Clogged inlet of the pressure gauge.</li> <li>Pressure gauge damage.</li> </ul>	<ul style="list-style-type: none"> <li>Clear any obstructions in the intake by unscrewing it from the 6-way valve.</li> <li>Contact Intex service center.</li> </ul>
SAND IS FLOWING BACK INTO THE POOL	<ul style="list-style-type: none"> <li>Sand is too small.</li> <li>Sand bed is calcified.</li> </ul>	<ul style="list-style-type: none"> <li>Use only No. 20 silica sand with particle size range 0.45 to 0.85 mm (0.018 to 0.033 inches) and a Uniformity Coefficient less than 1.75.</li> <li>Change sand.</li> </ul>



## COMMON POOL PROBLEMS

PROBLEM	DESCRIPTION	CAUSE	SOLUTION
ALGAE	<ul style="list-style-type: none"> <li>Greenish water.</li> <li>Green or black spots on pool liner.</li> <li>Pool liner is slippery and/or has a bad odor.</li> </ul>	<ul style="list-style-type: none"> <li>Chlorine and pH levels need adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>Super chlorinate with shock treatment. Correct pH to your pool store's recommended level.</li> <li>Vacuum pool bottom.</li> <li>Maintain proper chlorine level.</li> </ul>
COLORED WATER	<ul style="list-style-type: none"> <li>Water turns blue, brown, or black when first treated with chlorine.</li> </ul>	<ul style="list-style-type: none"> <li>Copper, iron or manganese in water being oxidized by the added chlorine. This is Common.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust pH level to the recommended level.</li> <li>Run filter until water is clear.</li> </ul>
FLOATING MATTER IN WATER	<ul style="list-style-type: none"> <li>Water is cloudy or milky.</li> </ul>	<ul style="list-style-type: none"> <li>"Hard water" caused by a too high pH level.</li> <li>Chlorine content is low.</li> <li>Foreign matter in water.</li> </ul>	<ul style="list-style-type: none"> <li>Correct the pH level. Check with your pool dealer for advice.</li> <li>Adjust the chlorine level.</li> </ul>
CHRONIC LOW WATER LEVEL	<ul style="list-style-type: none"> <li>Level is lower than on previous day.</li> </ul>	<ul style="list-style-type: none"> <li>Rip or hole in pool liner or hoses.</li> <li>The drain valves are loose.</li> </ul>	<ul style="list-style-type: none"> <li>Repair with a patch kit.</li> <li>Finger tighten all caps.</li> </ul>
SEDIMENT ON POOL BOTTOM	<ul style="list-style-type: none"> <li>Dirt or sand on pool floor.</li> </ul>	<ul style="list-style-type: none"> <li>Heavy use, getting in and out of pool.</li> </ul>	<ul style="list-style-type: none"> <li>Use Intex pool vacuum to clean of pool.</li> </ul>
SURFACE DEBRIS	<ul style="list-style-type: none"> <li>Leaves, insects etc.</li> </ul>	<ul style="list-style-type: none"> <li>Pool too close to trees.</li> </ul>	<ul style="list-style-type: none"> <li>Use Intex pool skimmer.</li> </ul>

## IMPORTANT

If you continue to experience difficulty, please contact our Consumer Service Department for assistance. See separate "Authorized Service Centers" sheet.

## GENERAL AQUATIC SAFETY

**Water recreation is both fun and therapeutic. However, it involves inherent risks of injury and death. To reduce your risk of injury, read and follow all product, package and package insert warnings and instructions. Remember, however, that product warnings, instructions and safety guidelines cover some common risks of water recreation, but do not cover all risks and dangers.**

**For additional safeguards, also familiarize yourself with the following general guidelines as well as guidelines provided by nationally recognized Safety Organizations:**

- Demand constant supervision. A competent adult should be appointed as a “lifeguard” or water watcher, especially when children are in and around the pool.
- Learn to swim.
- Take the time to learn CPR and first aid.
- Instruct anyone who is supervising pool users about potential pool hazards and about the use of protective devices such as locked doors, barriers, etc.
- Instruct all pool users, including children what to do in case of an emergency.
- Always use common sense and good judgement when enjoying any water activity.
- Supervise, supervise, supervise.

**For additional information on safety, please visit**

- **The Association of Pool and Spa Professionals: The Sensible Way to Enjoy Your Aboveground/Onground Swimming Pool** [www.nspi.org](http://www.nspi.org)
- **American Academy of Pediatrics: Pool Safety for Children** [www.aap.org](http://www.aap.org)
- **Red Cross** [www.redcross.org](http://www.redcross.org)
- **Safe Kids** [www.safekids.org](http://www.safekids.org)
- **Home Safety Council: Safety Guide** [www.homesafetycouncil.org](http://www.homesafetycouncil.org)
- **Toy Industry Association: Toy Safety** [www.toy-tia.org](http://www.toy-tia.org)