

# Spinbar® Magnetic Stirring Bar Size and Selection Guide



## Spinbar® Magnetic Stirring Bar Guide

Magnetic stirring is used in a number of common laboratory procedures, yet the importance of selecting the best stirring bar for each particular application is often overlooked. The size of the magnetic stirrer, vessel shape (including the opening of the vessel that the stirbar has to fit through), viscosity and abrasiveness of the materials should all be considered when choosing the size, shape and materials (coating and magnet) of the magnetic stirring bar in order to achieve effective, efficient stirring results.

First, let's discuss magnetism. On the most basic level, we know that opposite poles attract. A magnetic stirrer has a drive magnet, generally a bar or U-shape made of a metallic alloy or a ceramic which rotates powered by a drive motor. The magnetic poles of the drive magnet are typically about two inches apart in bench top models, and can be up to six inches apart in larger units used to mix 50 gallons of liquid solution. For optimum magnetic coupling, the distance between the magnetic poles of the drive magnet and the length of the stirring bar should be equal. Bars too long or too short in proportion to the drive magnet will not have optimum coupling which is important to reduce spinout.

Once a magnetic stirring bar has been placed in a container with solution, it should be positioned directly over the center of the drive magnet. The stirring speed should be increased slowly, until the desired vortex pattern is achieved. Should the magnetic stirring bar lose its coupling with the drive magnet because of the speed of the drive magnet, viscosity of the fluid, or an improperly selected stirring bar length, it is said to have "spun-out."

Vertical distance between the drive magnet and the stirring bar should be kept to a minimum for the best coupling and stirring efficiency. Therefore, the containing vessel should be as thin as practical.

The magnetic stirring bar shape also influences the resulting vortex. Multi-sided shapes may be more efficient in moving solutions and certain shapes have been designed to provide a tailored fit in specialty vessels such as test tubes, cuvettes, and round bottomed boiling flasks.

*All Spinbar® and other Teflon® PTFE Coated Magnetic Stirring Bars are Manufactured in a Registered ISO 9001:2015 Facility, as Verified by SGS Certification.*

## Spinbar® Magnetic Stirring Bar Shapes and Performance

- Alnico magnet encapsulated in FDA Grade, USP Class VI Teflon® brand PTFE Coating
- Superior Chemical Compatibility



**Elliptical (Egg Shaped)** magnetic stirring bars are particularly well suited for round bottom flasks. Their shape mimics that of a flask and ensures complete mixing. They also offer minimal contact when used in plastic containers.



**Octagon** magnetic stirring bars with integral pivot ring are the most commonly used shape. Their interrupted profile provides greater surface area and added turbulence when compared to the smooth surface of cylindrical bars. Pivot ring aids in reducing friction and chattering.



**Micro (Flea)** magnetic stirring bars are designed for stirring small volumes in vessels such as vials, tubes and gradient makers. Available in a variety of sizes, micro (flea) stirring bars are particularly useful for environmental testing and life science applications in which small sample volumes need to be prepared and evaluated.



**Polygon/Giant Polygon** multifaceted surfaces add turbulence relative to similar smooth size cylindrical bars. Giant Polygon bars can be used for stirring substantial volumes in large vessels such as drums and tanks.

- Assured Quality
- Alnico V Permanent Magnet

- Seamless Molded TEFLON®
- Polished Finish

- Leakproof Design
- FDA Approved Materials

- Specified Tolerance of TEFLON® Walls
- High Strength Magnetization

## Octagon Spinbar Magnetic Stirring Bars

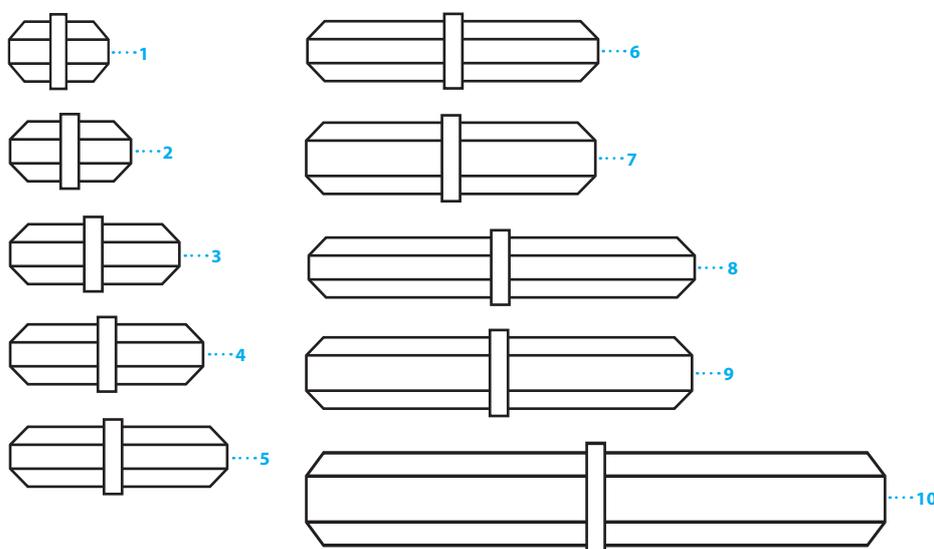
### Vigorous, Thorough Mixing

Used in conjunction with a magnetic stirring plate, Spinbar® stir bars enable uniform, consistent, and thorough mixing of chemical solutions.

- Multi-faceted shape provides greater surface area and added turbulence for more vigorous, thorough mixing when compared to the smooth surface of cylindrical bars
- Pivot ring allows the Spin Bar to “rock” while spinning for better mixing conditions (F37110-1218 does not have a pivot ring)
- Alnico magnet encapsulated in FDA Grade, USP Class VI Teflon® brand PTFE coating; Superior chemical compatibility
- Autoclavable
- Manufactured in a registered ISO 9001:2015 facility, as verified by SGS certification



Actual Size when Document Printed at 100%



CATALOG NO.	DIMENSIONS (L X DIAM.)	QUANTITY/PACK
1. F37110-1308	13 x 8mm	10
2. F37110-1608	16 x 8mm	10
3. F37110-2208	22 x 8mm	10
4. F37110-2508	25 x 8mm	10
5. F37110-2908	29 x 8mm	10
6. F37110-3808	38 x 8mm	10
7. F37110-3810	38 x 10mm	10
8. F37110-5108	51 x 8mm	5
9. F37110-5110	51 x 10mm	5
10. F37110-7613	76 x 13mm	1

## Micro (Flea) Spinbar Magnetic Stirring Bars

### Enlarged Flea Micro

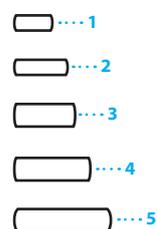


### Small Sample Mixing

Designed for small volume mixing in vessels such as vials, tubes and gradient makers.

- Particularly useful for environmental testing and life science applications in which small sample volumes need to be prepared and evaluated
- Alnico magnet encapsulated in FDA Grade, USP Class VI Teflon® brand PTFE Coating; Superior chemical compatibility
- Manufactured in a registered ISO 9001:2015 facility, as verified by SGS certification
- Autoclave safe

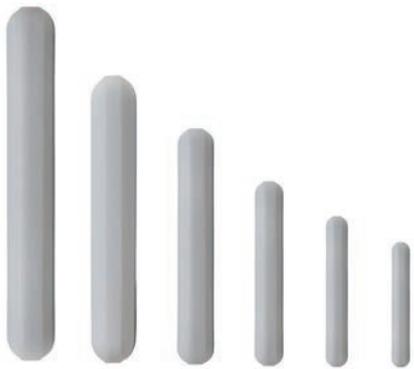
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CATALOG NO.	DIMENSIONS (L X DIAM.)	QUANTITY/PACK
1. F37119-0502	5 x 2mm	10
2. F37119-0702*	7 x 2mm	10
3. F37119-0803	8 x 3mm	10
4. F37119-1003	10 x 3mm	10
5. F37119-1303	13 x 3mm	10

\*Square Ends

## Polygon Spinbar Magnetic Stirring Bars without Pivot Ring



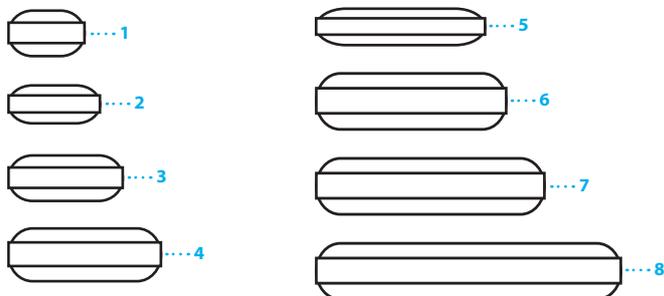
### Scrapes Solids from Vessel Bottom

High quality Teflon encapsulated magnetic stirring bars ensure efficient mixing with consistent results.

- Multi-faceted polygon shape with increased surface area creates added turbulence relative to similar sized, smooth cylindrical bars to provide thorough mixing
- Absence of a pivot ring allow the Spinbar to stay close to the bottom of the vessel enabling “scraping” of solids
- Optimal coupling with magnetic spindrive as entire length of stir bar is in close contact
- Alnico magnet encapsulated in FDA Grade, USP Class VI Teflon® brand PTFE Coating; Superior chemical compatibility
- Manufactured in a registered ISO 9001:2015 facility, as verified by SGS certification
- Autoclave safe



Actual Size when Document Printed at 100%



CATALOG NO.	DIMENSIONS (L X DIAM.)	QUANTITY/PACK
1. F37120-1006	10 x 6mm	10
2. F37120-1205	12 x 5mm	10
3. F37120-1506	15 x 6mm	10
4. F37120-2008	20 x 8mm	10
5. F37120-2205	22 x 5mm	10
6. F37120-2508	25 x 8mm	10
7. F37120-3008	30 x 8mm	10
8. F37120-4008	40 x 8mm	10

## Giant Polygon Spinbar Magnetic Stirring Bars without Pivot Ring

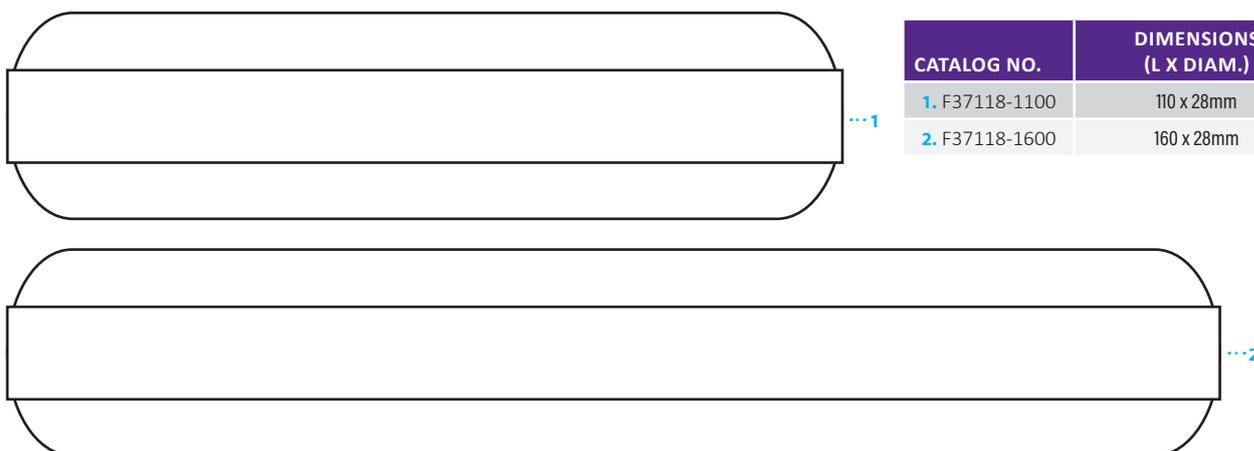
### Teflon® PTFE Bars for Large Volume Stirring

Heavy duty bars for use in stirring large volumes of fluid utilizing large magnetic stirring machines such as the Cool Stir Large Volume Stirrer, H37028-0001 or other large machines.

- Will fit into vessels with a minimum neck diameter of 32 mm
- Multi-faceted surface adds turbulence relative to similar size smooth cylindrical stirring bars
- Alnico magnet encapsulated in FDA Grade, USP Class VI Teflon® brand PTFE Coating; Superior chemical compatibility
- Manufactured in a registered ISO 9001:2015 facility, as verified by SGS certification
- Autoclave safe



Actual Size when Document Printed at 100%



CATALOG NO.	DIMENSIONS (L X DIAM.)	QUANTITY/PACK
1. F37118-1100	110 x 28mm	1
2. F37118-1600	160 x 28mm	1

## Elliptical (Egg-Shaped) Spinbar Magnetic Stirring Bars

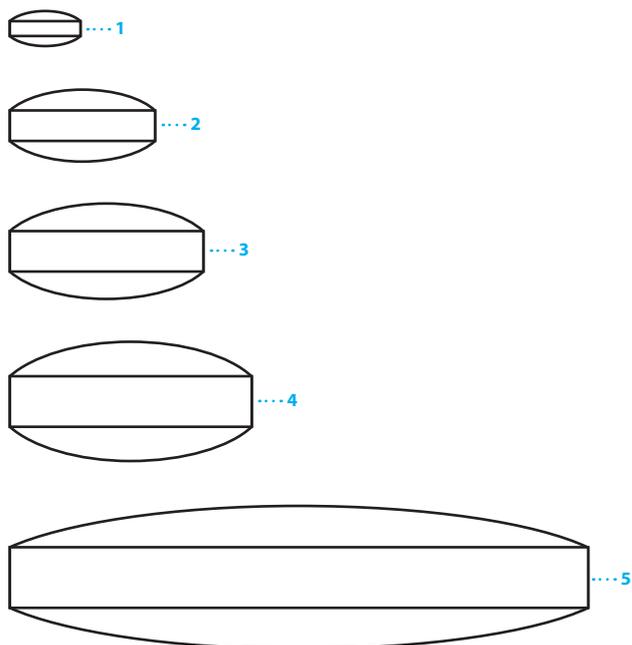


### “Eggcellent” for Round Bottom Flasks

Used in conjunction with a magnetic stirring plate, Spinbar® stir bars create uniform, consistent, and thorough mixing of chemical solutions.

- Contoured egg shape is ideal for use in round-bottom vessels / flasks; ensures complete mixing
- Offers minimal contact when used in plastic containers; minimizes scraping
- Egg shape provides pivot point without a separate ring or abrupt change in contour for smoother mixing
- Alnico magnet encapsulated in FDA Grade, USP Class VI Teflon® brand PTFE Coating; Superior chemical compatibility
- Magnets are egg-shaped for more uniform ‘strength’ throughout the bar, except three smallest sizes have a cylindrical magnet
- Manufactured in a registered ISO 9001:2015 facility, as verified by SGS certification
- Autoclave safe

Actual Size when Document Printed at 100%



CATALOG NO.	DIMENSIONS (L X DIAM.)	QUANTITY/PACK
1. F37130-1005	10 x 5mm	10
2. F37130-2010	20 x 10mm	10
3. F37130-2513	25 x 13mm	10
4. F37130-3216	32 x 16mm	5
5. F37130-7620	76 x 20mm	1



**Sterileware®**

**Sterile Sampling Tools**  
from Bel-Art – SP Scienceware®

- FDA grade – safe for food, drug and cosmetic contact
- Sterilized by gamma irradiation; individually packaged; lot stamped
- Pre-notched bag allows easy opening

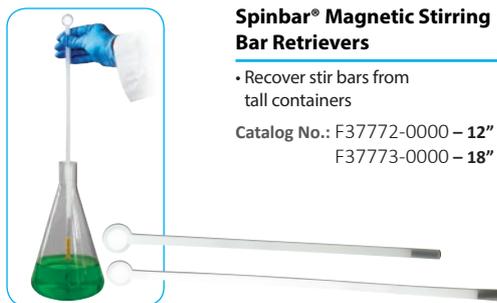
visit [www.belart.com](http://www.belart.com), keyword ‘Sterileware’

# Magnetic Stirring Accessories



## Spinbar® Magnetic Stirring Bar Garage

- Convenient parking for multiple shapes and sizes
  - Prevents demagnetization
- Catalog No.: F37790-0000



## Spinbar® Magnetic Stirring Bar Retrievers

- Recover stir bars from tall containers
- Catalog No.: F37772-0000 – 12"  
F37773-0000 – 18"



## Magnetic Stirring Bar Positioner / Retriever

- Positions stir bars in solution without risk of splashing
  - Removes bars without touching or emptying contents
- Catalog No.: H37780-0000



## Spinbar® Magnetic Stirring Bar Restrainer

- Secures stirbars while emptying vessel contents
  - Fits ergonomically in one hand
- Catalog No.: F37786-1000



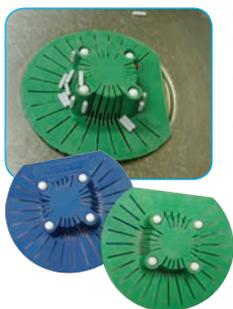
## Magnetic Stirring Bar Arrester

- Secures stirbars while emptying vessel contents
  - Prevents solution contamination
- Catalog No.: F37786-0000



## Battery Powered Magnetic Stirrer

- Portable, lightweight stirring power up to 1 liter without electricity
  - Speeds up to 900 RPM
- Catalog No.: H37017-0000



## Spinbar® Magnetic Stirring Bar Sink Strainer

- Prevents stirbars from going down the drain
  - Chemical resistant
- Catalog No.: F37787-0000 – Blue  
F37787-0001 – Green



## Jumbo Magnetic Spinbar® Stirring Bar Retriever

- Retrieves large stirring bars from deep vessels
  - Easy grip "T" handle
- Catalog No.: F37781-0000



## Air Operated Turbine Magnetic Stirrer

- Operates on 3-8 psi air pressure
  - Stirs vessels up to 1 liter
- Catalog No.: F37002-0000



## Spinbar® Flexible Magnetic Stirring Bar Retrievers

- Retrieve stirbars from containers or sink drains
  - 13" (33cm) flexible Teflon® rod
- Catalog No.:  
1/2" Diam. x 2 1/16"L (12.5mm x 53mm)  
H37774-0000 – White  
H37774-0020 – Blue  
H37774-0010 – Red  
H37774-0030 – Yellow  
5/8" Diam. x 2 1/16"L (16.5mm x 53mm)  
H37774-0101 – White  
H37774-0121 – Blue  
H37774-0111 – Red  
H37774-0131 – Yellow



## Magnetic Stirring Bar Retriever

- Moves stirbar to top of vessel for easy retrieval
  - No need to clean/autoclave the retriever after use
- Catalog No.: F37775-0000



## Cool Stir® Large Volume Magnetic Stirrer

- Large volume stirring for tanks or drums 10 liters-208 liters (2.5-55 gallons)
  - Powerful internal rare earth magnet couples optimally with 3-6" stirring bars (sold separately)
- Catalog No.: F37028-0001