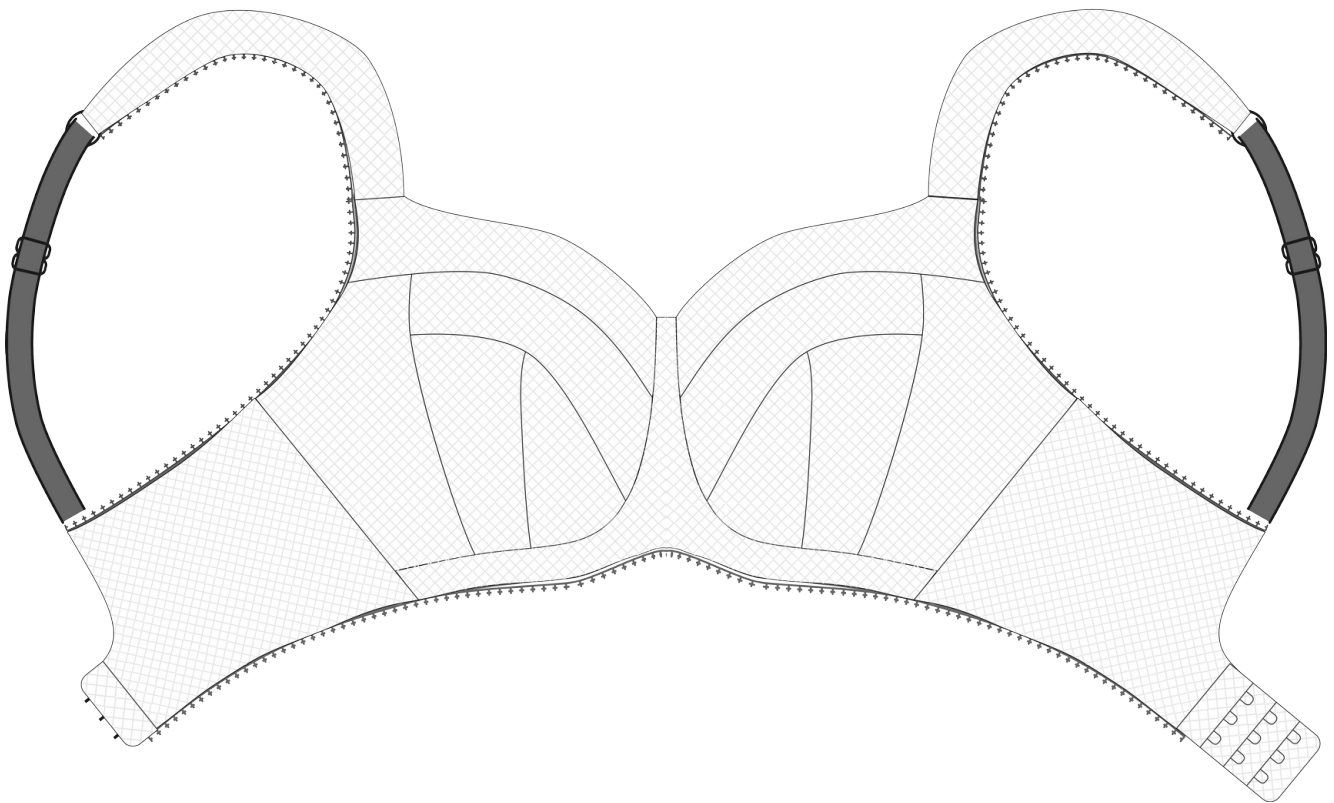
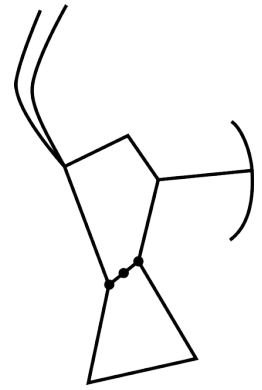


HUGS FOR YOUR JUGS

Orion Wireless Bra Pattern

Choosing Your Size, Materials & Supplies



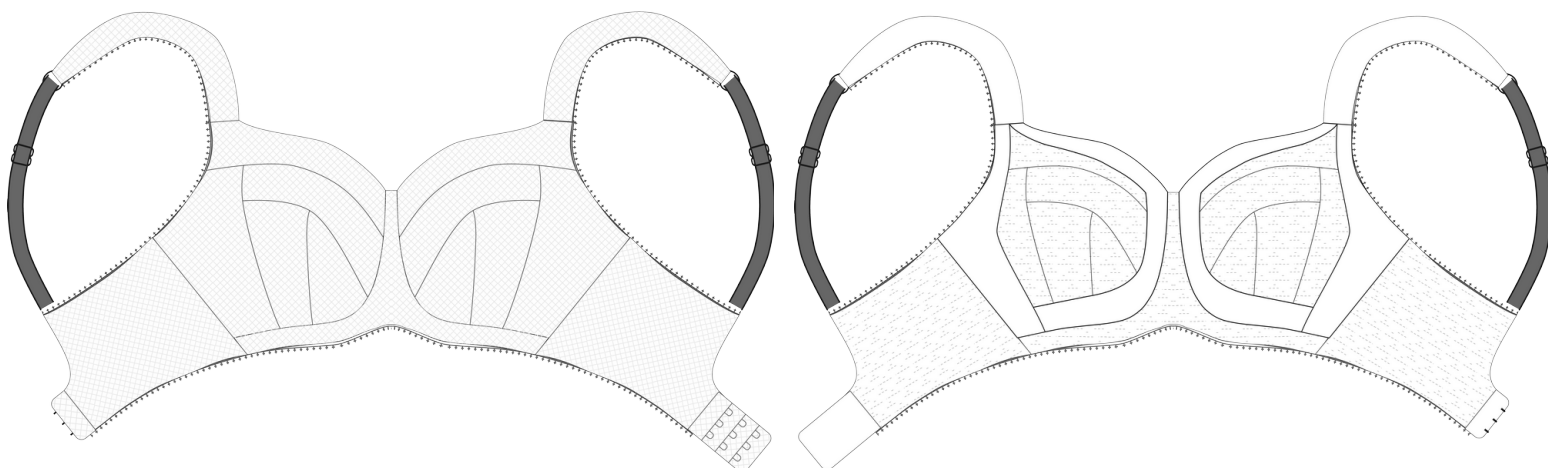
Contents

About the Orion Bra and Intended Fit.....	1
Choosing Your Size.....	3
Measurements.....	3
Size Chart.....	3
Projection Reference Charts.....	4
Supply Checklist.....	6
Materials & Notions Guidance.....	8
Cup & Cradle Fabric.....	8
Wing Fabric.....	8
Foam.....	8
Lining/Using Fashion Fabrics.....	8
Seam Tape.....	9
Elastics.....	9
Tools and Machine Specification.....	9
Tips & Additional Tools for Sewing Lingerie Fabric.....	9

About the Orion Bra and Intended Fit

The Orion bra is a high support, full coverage wireless bra intended to emulate the silhouette and shape of a wired bra under clothes.

It features a half-cradle construction with a centre gore, under cups cradle, but no side cradle piece. It has 5 piece cups, including a neckline piece and a power bar piece intended for maximum lift while keeping the rounded shape typical of wired bras. The centre gore should provide a degree of breast separation, but it is not intended to sit against the body during wear, unlike a typical wired bra.



View A

View B Interior

View A uses cup fabric only, and fabric straps. View B uses foam cup slings and padded straps. **You may mix and match** without additional alteration, or use plain elastic straps (not recommended for H+, instructions not included).

This is a DD+ pattern, and covers sizes 26-44 DD-K. This should fit those with underbust measurements of 25-46" and bust measurements of 5-15" larger than underbust.

Purchase of this pattern includes lifetime access to **AutoAdjusters** on hugsforyourjugs.com - AutoWing, AutoNeckline and AutoCradle. These adjust your pattern to better accommodate differences in projection and in fabric stretch. Instructions on performing these alterations manually are also included in the purchased booklet.

Each size in this pattern is unique, as projection scaling is used instead of standard cross-grading. Projection describes the depth of a bra cup compared to the area it takes up on your chest - more projection means a smaller cradle and neckline for a given volume. Changing to a different projection level is simple, as AutoWing can make the necessary adjustments automatically.

Projection scaling means that in this bra, **each cup letter is more projected** than the previous. Many bra patterns use the same cups for each sister size - for example, 28G, 30FF, 32F, 34E, 36DD would all use the same cup. In Orion, the 28G has the same cup volume but uses a smaller cradle than 30FF, 32F and so on. From DD-K the pattern spans 4 cups' worth of projection (2 cups from DD-GG, 2 cups from GG-K). That is, if you scaled DD and K to the same cradle size, the K would be 4 cup sizes deeper.

As bra fitting can be unintuitive, please follow the **measuring and size guide** when choosing your initial size.

This bra is very sensitive to differences in materials, even rigid bra-making materials can stretch more than anticipated in the pattern and this can have a significant impact on support. For this reason, **please follow the stretch reduction guidelines** and use AutoNeckline and AutoCradle to adjust as necessary.

Due to the complex design of this bra, alterations before a first toile are not recommended. Cup shape and more involved alterations can be found in the Orion Bra Alterations Course.

Choosing Your Size

In simple terms: your band size is your underbust measurement, and your cup size is the difference between bust and underbust measurements in inches.

Measurements

1. Band size

Measure around your underbust in inches (no bra on), once loosely and once comfortably snugly.

If the difference between the two is ≤ 2 ", use the band size closest to your loose underbust measurement.

If the difference is 2-3", use a band size between your loose and snug underbust measurements.

If the difference is >3 ", use the band size closest to your snug underbust measurement.

2a. Cup volume - if a well-fitting bra is owned:

In your well-fitting bra, measure around your full bust.

2b. Cup volume - if no well-fitting bra is owned:

Without a bra on, measure around the fullest part of your bust while leaning forwards, and again while lying down. Take an average of these two measurements.

Size Chart

	Orion Cup Size					
Cup Size	DD	E	F	FF	G	GG
Bust-Underbust Difference	5"	6"	7"	8"	9"	10"
Cup Size	GG	H	HH	J	JJ	K
Bust-Underbust Difference	10"	11"	12"	13"	14"	15"

Projection Reference Charts

After your first toile, you may find that the bra takes up too little or too much area on your chest for the depth of the cup. This is called projection, and we can adjust this for a better fit.

More projection means you want the bra to take up less area on the chest, less projection means you want the bra to take up more area on the chest.

To use this chart, first, find the size you have sewed. Then choose an equivalent cup volume by moving Northeast or Southwest from your starting size. These are called sister sizes. Cut out and sew the cups and cradles for your new size, and adjust the wing length of this new size to fit your actual band size - use the AutoWing software included to get your wing instantly, or use the tutorial in the alterations section.

Projection Reference DD-GG	diagrams exaggerated					
Projection level -->						
Colours = equivalent cup volume Rows = band size Columns = cup letter	26DD	26E	26F	26FF	26G	26GG
	28DD	28E	28F	28FF	28G	28GG
	30DD	30E	30F	30FF	30G	30GG
	32DD	32E	32F	32FF	32G	32GG
	34DD	34E	34F	34FF	34G	34GG
	36DD	36E	36F	36F	36G	36GG
	38DD	38E	38F	38FF	38G	38GG
	40DD	40E	40F	40FF	40G	40GG
	42DD	42E	42F	42FF	42G	42GG
	44DD	44E	44F	44FF	44G	44GG

Projection Reference GG-K	diagrams exaggerated					
Colours = equivalent cup volume	26GG	26H	26HH	26J	26JJ	26K
	28GG	28H	28HH	28J	28JJ	28K
	30GG	30H	30HH	30J	30JJ	30K
	32GG	32H	32HH	32J	32JJ	32K
	34GG	34H	34HH	34J	34JJ	34K
	36GG	36H	36HH	36J	36JJ	36K
	38GG	38H	38HH	38J	38JJ	38K
	40GG	40H	40HH	40J	40JJ	40K
	42GG	42H	42HH	42J	42JJ	42K
	44GG	44H	44HH	44J	44JJ	44K

Supply Checklist

See [materials and notions guidance](#) for more information on suggested fabrics & fabric/notion properties

☐ Stabilised knit fabric for Cup & Cradle

Specialist lingerie fabric eg. (strong) 20 denier/sheer cup lining, stabilised tricot, nylplex, and laminated lingerie fabrics

Bra Size (DD-GG)	Cup & Cradle Fabric Size	Bra Size (GG-K)	Cup & Cradle Fabric Size
26DD-GG, 28DD-G, 30DD-FF, 32DD-F, 34DD-E, 36DD	60 × 40 cm / 24 × 15"	26GG-K, 28GG-JJ, 30GG-J, 32GG-HH, 34GG-H, 36GG	75 × 45 cm / 30 × 18"
28GG, 30G-GG, 32FF-GG, 34F-GG, 36E-GG 38DD-GG, 40DD-GG, 42DD-GG	70 × 65 cm / 28 × 26"	28K, 30JJ-K, 32J-K, 34HH-K, 36H-K, 38GG-K, 40GG-K, 42GG-K, 44GG-K	85 × 70 cm / 32 × 28"

☐ Powernet for Wing

Medium to firm recommended, typically 140-200gsm. Avoid powermesh.

Band Size (DD-GG, GG-K)	Powernet Size (DD-GG)	Powernet Size (GG-K)
26-30	42.5 × 17.5 cm / 17 × 7"	40 × 20 cm / 16 × 8"
32-36	50 × 20 cm / 20 × 8"	45 × 22.5 cm / 18 × 9"
38-44	60 × 22.5 cm / 24 × 9"	57.5 × 25 cm / 23 × 10"

☐ Foam for strap and slings (View B)

Cut and sew lingerie foam or spacer, 2-5mm thickness (2-3mm preferred).

Bra Size (DD-GG)	Foam Size (View B)	Bra Size (GG-K)	Foam Size (View B)
26DD-GG, 28DD-G, 30DD-FF, 32DD-F, 34DD-E, 36DD	35 × 25 cm / 14 × 10"	26GG-K, 28GG-JJ, 30GG-J, 32GG-HH, 34GG-H, 36GG	47.5 × 35 cm / 19 × 14"
28GG, 30G-GG, 32FF-GG, 34F-GG, 36E-GG, 38DD-GG, 40DD-GG, 42DD-GG, 44DD-GG	55 × 35 cm / 22 × 14"	28K, 30JJ-K, 32J-K, 34HH-K, 36H-K, 38GG-K, 40GG-K, 42GG-K, 44GG-K	60 × 40 cm / 24 × 16"

- ☐ **Nylon Seam Tape - 3.75m (4.25y) (DD-GG), 4.25m (4.75y) (GG-K)**
8-12mm width. See Seam Tape section in Materials & Notions Guidance for substitutions
- ☐ **Plush lingerie elastic (lower band) - 60-100cm (24-40") (DD-GG and GG-K)**
12-15mm (DD-GG), 15-18mm (GG-K)
- ☐ **Plush lingerie elastic (upper band) - 1m-1.3m (40-50") (DD-GG and GG-K)**
10-15mm (DD-GG), 12-15mm (GG-K). Less needed if using elastic straps.
- ☐ **Lingerie strap elastic (adjustable strap portion & U back) - 60cm (24") (DD-GG and GG-K)**
15-25mm (DD-GG), 18-25mm (GG-K). Fabric/foam straps may be substituted with full elastic straps (instructions not provided).
- ☐ **1 set metal rings and sliders - 15-25mm**
2 rings and 2 sliders corresponding to strap elastic width.
- ☐ **1 set Hook and Eye - 57mm**
Pattern is drafted for standard 3 hook 57mm in DD-GG and GG-K. 2 hook may be used for DD-FF. 4 hook recommended for maximum support in HH-K. Alteration provided by AutoWing and in Alterations section.
- ☐ **High quality polyester thread**
1 spool typically suffices
- ☐ **(Optional) Soluble adhesive - pritt stick, wonder tape, basting spray for synthetics**
Used on foam straps and hook and eye for ease of sewing

Materials & Notions Guidance

Cup & Cradle Fabric

This bra is designed for stable knits on all pieces except the wing (piece 10). Appropriate materials for maximal lift include (strong) 20 denier*, stabilised tricot, nylplex, and laminated lingerie fabrics. For the DD-GG range sheer cup lining* and duoplex may also be used. Wovens such as quilting cotton are not recommended. If fabric has >3% stretch, take indicated darts from cradle pattern piece.

The most heavily stressed pieces on the bra are the upper upper cup (piece 1) and cradle (piece 6). These pieces are most liable to stretch and are most important for the support structure. For the best support in larger sizes, line these pieces with opposing stretch for maximum strength, and/or use the foam slings provided, as well as checking and adjusting for excess stretch.

*consider lining sheer fabrics for pieces 1 and 6 in all size sets.

Every fabric behaves differently, even within the recommended list. It is important to toile the bra with the same main fabrics, seam tape and elastic you plan to use for the final bra, and compare your bra's stretch to the stretch charts for the neckline and cradle. Adjust these as necessary.

Wing Fabric

For the wing, medium to firm powernet is recommended. This is typically in the range of 140-200gsm, although the rebound does not depend solely on the fabric weight: high rebound (resistance to stretch) is the most important quality for support. Consider a double layer of powernet for the best support.

Foam

View B includes foam padded straps and foam slings, for maximum support. This bra can provide full lift in all sizes without foam slings or straps, but the foam helps prevent creasing and can help to distribute force better to the band, which may be more suitable for all-day wear in the largest sizes. Cut and sew or spacer foam can be used here, 2-3mm thickness recommended to reduce bulk.

Lining/Using Fashion Fabrics

A range of knit fabrics such as (stable or stretch) lace, powermesh, tulle and jerseys may be used on some or all pattern pieces if lined using appropriate fabrics listed above. To construct using these, baste lining and fashion layers together and treat as one. High stretch fashion layers may be trimmed slightly smaller and stretched to fit to prevent wrinkles when sewn.

Stretch lace, low recovery powermesh and jerseys may be used on the wing when paired with a suitable powernet lining. An increase in wing length may be needed if the lining increases the rebound (resistance to stretch) of the wing.

Seam Tape

The neckline and all seams are finished and stabilised using seam tape. This is a low stretch nylon tape that is topstitched over the seams. This can be purchased separately or cut along the grain of 20 denier, sheer cup lining or other non-laminated cup fabric.

If seam tape can't be obtained:

- Heavy cotton or other nonstretch stay tape/ribbon may be used to stabilise the neckline (hidden in a hem or using foldover elastic - instructions not provided),
- Wire channelling may be used to finish the cup-cradle seam
- Seam tape may be skipped as an inner cup seam/top of cradle finish, seams should be topstitched instead (instructions are not provided for this in this booklet).
- Upper band elastic may be used to finish the neckline, but an alteration to shorten the neckline must be performed - see "neckline stretch reduction changes" for more information. Instructions for sewing are not provided, but follow similar principles to the booklet (do not excessively stretch the neckline elastic when sewing).

Elastics

Elastics should be high quality and have strong rebound - resistance to stretch. Fold-over elastic is not a suitable alternative, but may be used in addition to plush band elastics. Elastic straps may be used instead of fabric in DD-GG, 20-25mm (3/4-1") width recommended for comfort.

Tools and Machine Specification

Machine must sew a zig zag and a straight stitch, with a 3 step zigzag strongly recommended.

Stretch or microtex needles recommended for sewing lingerie fabrics

Small rotary cutter (3cm diameter) recommended for fabric cutting, sharp fabric scissors may be used if preferred

Tips & Additional Tools for Sewing Lingerie Fabric

Cut band elastics after sewing, and leave elastic tails to start and end seams. Trim after finishing both passes of stitching for the neatest look

- Stretch 75/90 needles are usually best, but laminated and nylplex fabrics may benefit from a 90 microtex
- Bulky seam aid (aka hump jumper) may be useful when sewing hooks
- Rounded tailor's ham (or balled up cotton towel) recommended for ease of pressing cup seams
- Duck billed embroidery scissors useful for trimming seam allowances

- Use scraps to lead and tail seams to prevent delicate fabric falling into machine
- Lockstitch (multiple stitches with very small stitch length) instead of backstitch at the start and end of seams to reduce bulk and keep fabric flat
- A smaller needle plate when straight stitching can prevent fabric falling into machine
- Flat head pins are useful for pinning lace
- Sewing clips are useful for pinning straps/foam
- A stiletto tool can be useful for slippery fabrics
- Washable adhesives such as pritt stick and soluble basting tape may be helpful, particularly with foam and hook and eyes