



JackPack v1

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1 Description

The JackPack is a “Jack-of-all-trades” backpack. I designed it out of a need for a moderately sized, well-structured backpack I could use when traveling overnight or over a weekend. It isn’t specifically ultralight, isn’t specifically meant for backpacking, isn’t specifically meant for day use, it’s just a well-rounded backpack.

Dimensions: 11" x 7" x 20"

Total Capacity ~30L

Weight: 21 oz.

Features:

- Top zipper pocket
- Interior zipper pocket
- Main body zipper
- Compression straps
- Large side stretch pockets
- Sternum strap
- Interior lining
- Rigid foam back
- Back panel with spacer mesh and air channels

2 Materials

2.1 Fabrics

Name	ID	Approximate Size	Example Materials
SHELL FABRIC	F1	1 linear ft.	420D ROBIC®
LINING FABRIC	F2	1 linear ft.	1.9 oz. PU-coated Ripstop Nylon
STRETCH FABRIC	F3	8" x 24"	Spandura
FOAM	F4	24" x 20"	6mm EVA Foam
SPACER MESH	F5	24" x 20"	¼" Spacer Mesh
INTERIOR POCKET LINING	F6	11" x 20"	3.4 oz. Pocket Mesh

2.2 Patterns

Name	ID	Quantity	Fabrics
BOTTOM PANEL	P1	1	1x F1
BACK PANEL FOAM	P2	1	1x F4
BACK PANEL LINING	P3	1	1x F2
BACK PANEL LOWER	P4	1	1x F1
BACK PANEL UPPER	P5	1	1x F1
BACK SPACER LOWER	P6	2	1x F1 , 1x F5
BACK SPACER UPPER	P7	4	1x F1 , 1x F1 (mirrored), 1x F5 , 1x F5 (mirrored)
FRONT PANEL	P8	2	1x F1 , 1x F2
INTERIOR POCKET LOWER	P9	1	1x F6
INTERIOR POCKET UPPER	P10	1	1x F6
SIDE PANEL LINING	P11	2	1x F2 , 1x F2 (mirrored)
SIDE PANEL UPPER	P12	2	1x F1 , 1x F1 (mirrored)
SIDE PANEL LOWER	P13	2	1x F1 , 1x F1 (mirrored)
SIDE POCKET	P14	2	1x F3 , 1x F3 (mirrored)
SHOULDER STRAP	P15	2	1x F1 , 1x F1 (mirrored), 1x F5 , 1x F5 (mirrored)
SHOULDER STRAP BASE	P16	2	2x F1
SHOULDER STRAP FOAM	P17	2	2x F4
TOP PANEL BACK	P18	2	1x F1 , 1x F2
TOP PANEL FRONT	P19	2	1x F1 , 1x F2
TOP PANEL LINING	P20	1	1x F2
ZIPPER TAB	P21	6	4x F1 , 6x F2

2.3 Components

Name	ID
SHOULDER STRAPS	C1
STERNUM STRAP	C2
HAUL LOOP	C3
SHOULDER STRAP BASES	C4
FRONT CORDAGE	C5
COMPRESSOR STRAPS	C6
TOP ZIPPER	C7
INTERIOR ZIPPER	C8
BODY ZIPPER	C9
SIDE POCKETS	C10

The total number of each component can be found here: [2.3.11 Total Components](#)

2.3.1 SHOULDER STRAPS

Part	Number	Size
¾" WEBBING	2	18"
¾" LADDER LOCK	2	-

2.3.2 STERNUM STRAP

Part	Number	Size
¾" WEBBING	1	4"
¾" WEBBING	1	9"
¾" BUCKLE	1	-
¾" STRAP SLIDER	2	-
¾" ELASTIC	1	2.5"

2.3.3 HAUL LOOP

Part	Number	Size
¾" WEBBING	1	7"

2.3.4 SHOULDER STRAP BASES

Part	Number	Size
¾" WEBBING	2	18"

2.3.5 FRONT CORDAGE

Part	Number	Size
¾" WEBBING	6	2"
⅛" (3mm) CORDAGE	1	70"
CORDAGE LOCK	1	-

2.3.6 COMPRESSOR STRAPS

Part	Number	Size
¾" WEBBING	2	9"
¾" WEBBING	2	2"
¾" LADDER LOCK	2	-
¾" ELASTIC	2	2.5"

2.3.7 TOP ZIPPER

Part	Number	Size
#5 YKK ZIPPER COIL	1	11"
#5 YKK ZIPPER SLIDER	1	-
ZIPPER PULL	1	-

2.3.8 INTERIOR ZIPPER

Part	Number	Size
#5 YKK ZIPPER COIL	1	9"
#5 YKK ZIPPER SLIDER	1	-
ZIPPER PULL	1	-

2.3.9 BODY ZIPPER

Part	Number	Size
#8 YKK ZIPPER COIL	1	45"
#8 YKK ZIPPER SLIDER	2	-
ZIPPER PULL	2	-

2.3.10 SIDE POCKETS

Part	Number	Size
1" ELASTIC BIAS TAPE	2	8"

2.3.11 Total Components

Part	Number	Size
¾" WEBBING	-	126"
¾" LADDER LOCK	4	-
¾" BUCKLE	1	-
¾" STRAP SLIDER	2	-
¾" ELASTIC	-	7.5"
⅛" (3mm) CORDAGE	-	70"
CORDAGE LOCK	1	-
#5 YKK ZIPPER COIL	-	20"
#5 YKK ZIPPER SLIDER	2	-
ZIPPER PULL	4	-
#8 YKK ZIPPER COIL	1	45"
#8 YKK ZIPPER SLIDER	2	-
1" ELASTIC BIAS TAPE	2	8"

3 Assembly

Most seam allowances in this project are 3/8". However, 1/4" is used for zipper tape seams.

3.1 Shoulder Straps

1. Cut out patterns **P15 (SHOULDER STRAP)** and **P17 (SHOULDER STRAP FOAM)**. Gather supplies for component **C1 (SHOULDER STRAPS)**.
2. Place one **SHOULDER STRAP** of fabric **F1 (SHELL FABRIC)** and **F5 (SPACER MESH)** right sides together. Sew seam allowances, leaving top open. Trim down and/or make relief cuts around the curves, within the seam allowances, to help with the next part. This new part will be referred to **SHOULDER STRAP SHELL**.
3. Place **SHOULDER STRAP FOAM** inside the **SHOULDER STRAP SHELL**. The best method I found to do this is to act like you are trying to get a duvet in its cover by reaching inside the wrong side out **SHOULDER STRAP SHELL** and pulling the **SHOULDER STRAP FOAM** through. It will take a lot of effort to "unroll" the shell over the foam, but you should end up with the foam not peeking out from the shell.
4. Repeat for the other shoulder strap. Try to get the location of the foam relative to the opening of the shell the same for both shoulder straps.
5. For both shoulder straps, trim the foam down so that there is 3/8" of shell extending past the end of the foam.
6. Use the **SHOULDER STRAPS** component parts, loop a small amount of webbing through the first rung of the ladder lock and secure with a bar tack. Then position the ladder lock so that it slightly hangs off the shoulder strap and bar tack the lowest point through the entire shoulder strap (see **P15** pattern annotations). Sew the rest of the bar tacks up the shoulder strap. Trim the webbing so that it aligns with the top of the **SHOULDER STRAP SHELL**. Refer to these two shoulder straps as **FINISHED SHOULDER STRAPS**.

3.2 Sternum Strap

1. Gather supplies for component **C2 (STERNUM STRAP)**.
2. Loop and bar tack the shorter webbing through one strap slider and the non-adjustable side of the buckle.
3. Loop and bar tack the longer webbing through the other strap slider. Loop the other webbing end through the adjustable side of the buckle. Finish end of the webbing by folding over ~1/2" and bar tacking in the middle, and over the raw end of the webbing.
4. Take the elastic and fold halfway over itself. Sew a little past the 3/4" mark, and trim extra material. Place elastic loop over longer webbing side to hold down the extra adjustment webbing. Refer to this sternum strap as **FINISHED STERNUM STRAP**.

3.3 Back Panel

1. Cut out patterns **P3 (BACK PANEL LINING)**, **P4 (BACK PANEL LOWER)**, **P5 (BACK PANEL UPPER)**, **P6 (BACK SPACER LOWER)**, **P7 (BACK SPACER UPPER)**, and **P16 (SHOULDER STRAP BASE)**. Gather supplies for components **C3 (HAUL LOOP)** and **C4 (SHOULDER STRAP BASES)**.
2. Place wrong side of **BACK SPACER LOWER** of fabric **F5 (SPACER MESH)** on top of the right side of **BACK SPACER LOWER** of fabric **F1 (SHELL FABRIC)**. Baste stitch within seam allowance.
3. Repeat for both left and right **BACK SPACER UPPER** parts of the same respective materials.
4. Sew **BACK SPACER LOWER** part to lower cutout of **BACK PANEL LOWER**, right sides together.
5. Repeat for both left and right **BACK SPACER UPPER** in the left and right cutouts of **BACK PANEL LOWER**. Refer to this bottom back part as **BACK LOWER PANEL**.
6. Baste stitch **HAUL LOOP** webbing to the top of the **BACK LOWER PANEL**, using the edge of the spacer mesh and shell as the outside alignment of the webbing.
7. Baste stitch the **FINISHED SHOULDER STRAPS** to the top of the **BACK LOWER PANEL**, directly to the outside of the haul loop (on the spacer mesh portions). Make sure the bottom of the shoulder straps curve to the outside of the bag.
8. Align **BACK PANEL UPPER** to the top of the **BACK LOWER PANEL**, right sides together (the baste stitched haul loop and shoulder straps will be between the two). This may require making relief cuts at the hard angles (see **P5** annotations). Sew the two parts together. Make bar tacks on the haul loop webbing, as well as the shoulder straps, for added strength. Refer to this as **OUTSIDE BACK PANEL**.
9. Fold the bottom seam allowance of **SHOULDER STRAP BASE** (as annotated) wrong sides together. Top stitch close to the edge ($< \frac{1}{8}$ "). Trim extra material from bottom corners. Fold in half vertically (as annotated). Take the webbing from **SHOULDER STRAP BASES** and feed one end inside the folded material, starting from the top-stitched side, until the end of the webbing reaches the back edge. The webbing should be flush with the fold. Box stitch the webbing in between the material. Repeat for the other base.
10. Place **OUTSIDE BACK PANEL** wrong sides together with **BACK PANEL LINING** and baste stitch except at the top. Baste stitch both **SHOULDER STRAP BASE** as annotated on **P4**. Refer to this as the **FOAMLESS BACK PANEL**.

3.4 Top Panel

1. Cut out patterns **P18 (TOP PANEL BACK)**, **P19 (TOP PANEL FRONT)**, **P20 (TOP PANEL LINING)**, and two **P21 (ZIPPER TAB)** each of fabric **F1 (SHELL FABRIC)** and **F2 (LINING FABRIC)** (a total of four). Gather supplies for component **C7 (TOP ZIPPER)**.
2. Place both **TOP PANEL BACK** patterns wrong side together. Baste stitch inside seam allowance. Repeat for both **TOP PANEL FRONT** patterns.
3. Place two **ZIPPER TAB** of either material wrong sides together. Baste stitch around the perimeter, in the seam allowance. Repeat for remaining two zipper tab pieces.
4. Construct the top zipper panel by following the guide described in **Appendix A - Zippers**, using **TOP PANEL BACK**, **TOP PANEL FRONT**, **ZIPPER TAB**, and **TOP ZIPPER**. The right side of the **TOP PANEL BACK** and **TOP PANEL FRONT** parts are the **SHELL FABRIC** sides. Trim the extra material of **ZIPPER TAB**. The resulting top zipper panel should be the same overall size of the **TOP PANEL LINING**. Refer to this part as **OUTSIDE TOP PANEL**.
5. Place **TOP PANEL LINING** and **OUTSIDE TOP PANEL** wrong sides together. Baste stitch inside seam allowance. Refer to this top panel as **FINISHED TOP PANEL**.

3.5 Side Panels

1. Cut out patterns **P11 (SIDE PANEL LINING)**, **P12 (SIDE PANEL LOWER)**, **P13 (SIDE PANEL UPPER)**, **P14 (SIDE POCKET)**. Gather supplies for components **C6 (COMPRESSOR STRAPS)** and **C10 (SIDE POCKETS)**.
2. Place mirrored **SIDE PANEL UPPER** of fabric **F1 (SHELL FABRIC)** and **F2 (LINING FABRIC)** wrong side together and baste stitch inside seam allowance. Repeat for **SIDE PANEL LOWER** with the same respective materials. The **SHELL FABRIC** side of these panels is the right side.
3. Find **SIDE POCKET** with a top sloping the opposite direction of the right side of the **SIDE PANEL UPPER** (the slope of the side pocket should match the slope of the tension strap annotations on **P13**). Take elastic bias tape elastic for **SIDE POCKETS** and fold over the top side of the **SIDE POCKET**, sewing into place by using a wide and long zig-zag stitch (to allow stretching of the stitch, see **P14** annotation).
4. Place **SIDE POCKET** wrong side to right side of **SIDE PANEL UPPER**, aligning the bottom and sides. Baste stitch inside seam allowance.
5. Align top of **SIDE PANEL LOWER** and bottom of **SIDE PANEL UPPER**, right sides together. The stretch fabric of the pocket should be between the two layers. Make sure to match the sides annotated with "TO BACK" and "TO FRONT" on **P12** and **P13**. Sew the parts together. Fold the seam allowance up towards the upper part and top stitch ¼" from the previously created seam (this will be on the pocket stretch material). The resulting side panel should be the same overall size as the **SIDE PANEL LINING**. Refer to this part as **OUTSIDE SIDE PANEL**.
6. Take the shorter webbing and ladder lock from **COMPRESSOR STRAPS**. Make loop around first rung of the ladder and baste stitch to the **OUTSIDE SIDE PANEL** as annotated in **P13**.
7. Take the elastic and fold halfway over itself. Sew a little past the ¾" mark, and trim extra material. Place elastic loop over longer webbing side to hold down the extra adjustment webbing. Take the longer webbing and loop through the ladder. Baste stitch to the other side of **OUTSIDE SIDE PANEL**. Finish end of the long webbing by folding over ~1/2" and bar tacking in the middle, and over the raw end of the webbing.
8. Place **OUTSIDE SIDE PANEL** and **SIDE PANEL LINING** wrong sides together and baste stitch. Repeat all steps for other side panel. Refer to these side panels as **FINISHED SIDE PANELS**.

3.6 Front Panel

1. Cut out patterns **P8 (FRONT PANEL)**, **P9 (INTERIOR POCKET LOWER)**, **P10 (INTERIOR POCKET UPPER)** and two **P21 (ZIPPER TAB)** of fabric **F2 (LINING FABRIC)**. Gather supplies for components **C5 (FRONT CORDAGE)** and **C8 (INTERIOR ZIPPER)**.
2. Construct the interior zipper panel by following the guide described in **Appendix A - Zippers**, using **INTERIOR POCKET LOWER**, **INTERIOR POCKET UPPER**, **ZIPPER TAB**, and **INTERIOR ZIPPER**. Before performing the top stitch, bar tack the front cordage loops inside the seam allowance for added strength. Trim the extra material of **ZIPPER TAB**. The resulting interior pocket panel should be the same overall size of **FRONT**. Refer to this part as **INTERIOR POCKET**.
3. Fold all six pieces of webbing for **FRONT CORDAGE** in half and baste stitch as annotated for **P8**. Place **FRONT** and **INTERIOR POCKET** wrong sides together and baste stitch within the seam allowance. Refer to this front panel as **COMPLETED FRONT PANEL**.

3.7 Back, Sides, Bottom, and Top Unification

1. Cut out patterns **P1 (BOTTOM PANEL)** and **P2 (BACK PANEL FOAM)**. Gather **FOAMLESS BACK PANEL**, **FINISHED SIDE PANELS**, and **FINISHED TOP PANEL**.
2. Place both **BOTTOM PANEL** patterns wrong side together. Baste stitch within seam allowance. The **F1 (SHELL FABRIC)** side is the right side. Make relief cuts as annotated in **P1**.
3. Place one of the **FINISHED SIDE PANELS** and the **BOTTOM PANEL** right side together. Align the bottom of the side panel and the sides of the bottom panel. Match the "TO FRONT"/"TO BACK" annotations on both panels. Sew at seam allowance. Since each corner of these panels will be a 3-D corner, start and stop the stitch exactly at the seam allowance (leaving 3/8" before and after the stitch).
4. Repeat for the other **FINISHED SIDE PANELS** part.
5. Place **BOTTOM PANEL** portion of the unified part and **FOAMLESS BACK PANEL** right sides together, aligned on bottom edge (see annotation on **BOTTOM PANEL**). Sew at seam allowance. Finish 3-D corners by again starting/stopping stitch at the seam allowance, not into it.
6. Place **FINISHED SIDE PANELS** portions of the unified part and **FOAMLESS BACK PANEL** right sides together. Sew at seam allowance. Finish 3-D corners by again starting/stopping stitch at the seam allowance, not into it.
7. Bar tack tension strap webbing and pocket bias tape inside the allowance, on either side, for added strength. If the tops of the side and back panel do not align, trim down.
8. Place **BACK PANEL FOAM** inside of the **FOAMLESS BACK PANEL**, through the open top. Trim down the foam if needed. The foam should be able to sit flat but should still be snug enough to not shift around. Make sure the top of the foam is 3/8" from the top of the back panel. When foam fit is satisfactory, baste stitch top closed.
9. Place the **BACK PANEL** portion of the unified part and **TOP PANEL** right sides together, aligned at the newly closed top of the back panel and the back side of the top panel. Sew at seam allowance. Finish 3-D corners by again starting/stopping stitch at the seam allowance, not into it.
10. Place **FINISHED SIDE PANELS** portions of the unified part and **TOP PANEL** right sides together. Sew at seam allowance. Finish 3-D corners by again starting/stopping stitch at the seam allowance, not into it.
11. If the connected sides top panel and side panels panel do not align, trim down. Refer to this unified part as **UNIFIED BSBT**.

3.8 BSBT and Front Unification

1. Cut out two **P21 (ZIPPER TAB)** each of fabric **F1 (SHELL FABRIC)** and **F2 (LINING FABRIC)** (a total of four). Gather **UNIFIED BSBT, COMPLETED FRONT PANEL**, and materials for component **C9 (BODY ZIPPER)**.
2. Place two **ZIPPER TAB** of either material wrong sides together. Baste stitch around the perimeter, in the seam allowance. Repeat for remaining two zipper tabs.
3. Separate zipper teeth and feed zipper sliders on both sides of the zipper coil. Sew a **ZIPPER TAB** on both ends of the zipper coil (following guide in **Appendix A - Zippers**). Do not trim the zipper tabs yet.
4. Mark the midpoint of the zipper and align with the midpoint of the top of the **COMPLETED FRONT PANEL**, right sides together. Continue following the zipper guide by starting the stitch at this midpoint and going all the way down one of the sides. Then, start back at the midpoint and sew the other side. Trim down the two front/back facing sides of each zipper tab so that the width matches the zipper tape (and is parallel with the zipper tape edges). Do not trim the side of the zipper tabs that extends passed the bottom of the front panel.
5. Perform zipper the top stitch. Don't go over the 6 webbing loops (push them towards the outside of the front panel). Instead, after the top stitch is finished, fold the webbing loops towards the inside of the front panel and bar tack (going over the top stitch). Refer to this front panel and body zipper part as **FRONT PANEL BODY ZIPPER**.
6. Flip **UNIFIED BSBT** inside out. Mark the exact midpoint of the front edge of the **TOP PANEL**. Mark the exact midpoint of the body zipper part of the **FRONT PANEL BODY ZIPPER**. Align these two points and continue following the zipper by starting the stitch at this midpoint and going all the way down one of the sides. Then, start back at the midpoint and sew the other side. This will unify the BSBT and front. Before doing the top stitch, bar tack tension strap webbing and pocket bias tape inside the allowance, on either side, for added strength.
7. When doing the top stitch, do not stitch over the webbing for the compression strap. Instead, after the top stitch is finished, fold the webbing towards the back of the pack and bar tack (going over the top stitch).
8. Align the bottom of the front panel and front of the bottom panel right sides together. Since each corner of these panels will be a 3-D corner, start and stop the stitch exactly at the seam allowance (leaving 3/8" before and after the stitch). Refer to this as the **UNIFIED JACKPACK**.

3.9 Finishing the Pack

1. Feed cordage through front cordage loops, into cordage lock, and trim down to desired length.
2. Apply zipper pulls to each zipper slider.
3. Finish the internal raw edges. My preferred method is to use a zig-zag/overlock stitch.

Appendix A - Zippers

The method I use for doing zippers with zipper tabs is from LearnMYOG (check out his awesome patterns and guides at www.learnmyog.com). The guide can be found [here](#) (starting at 1:17 for zipper tabs, then starting from the beginning for the top/bottom panels).

The patterns are sized so the when the panels are aligned the first stitch is made $\frac{1}{4}$ " from the edge of the zipper teeth. Then, when flipping the material back over and top stitching, the top stitch should be $\frac{1}{2}$ " from the edge of the zipper teeth.

It's recommended that after the first stitch but before the top stitch, the raw edges of the zipper coil/fabric are finished with a zig-zag/overlock stitch.

The zipper tab pattern (**P21**) is oversized and meant to be trimmed after being sewed onto the zipper coil. Don't forget to attach zipper(s) before closing off the ends of the zipper coil!