



National Parachute Industries, Inc.

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Bob and Jon purchased 12/01

Emergency Parachute Manual

National 425

Type NP6/81101-2

Serial N5334

*SENT FOR REPACKING 3/04
To Natl Parachute*

Models 360, 425 & 490 (TSO-C23b)

PART NUMBERS:

PARACHUTE -- HARNESS/CONTAINER ONLY

P/N: 81101-2	360	Back Style
P/N: 81101-2	425	Back Style
P/N: 81101-2	490	Back Style
P/N: 81101-3	360-S	Seat Style
P/N: 81101-3	425-S	Seat Style
P/N: 81101-3	490-S	Seat Style
P/N: 81101-5	360-C	Chair Style
P/N: 81101-5	425-C	Chair Style
P/N: 81101-5	490-C	Chair Style

*← ** CHUTE WT. 12 LBS
UP TO 205 LBS. PILOT WEIGHT

PARACHUTE -- CANOPY ONLY

P/N: 81002-10	Phantom Aerostar 24
P/N: 81002-20	Phantom Aerostar 26
P/N: 81002-40	Phantom Aerostar 28

*← **



WARNING

Parachuting is a high risk activity which may cause or result in serious *injury or death*.

Parachutes sometimes malfunction, even when they are properly designed, manufactured, assembled, packed, maintained and used. The result of such malfunctions may be *serious injury or death*.

Do not purchase or use any parachute equipment manufactured or sold by National Parachute Industries, Inc. unless you understand and voluntarily accept these risks.

Do not purchase or use any parachute equipment manufactured or sold by National Parachute Industries, Inc. unless you agree to read, understand and follow all manufacturers instructions, recommendations, requirements and limitations.

Do not purchase or use parachute equipment manufactured or sold by National Parachute Industries, Inc. unless you have read, understand and accept this "Warning" and the "No Warranty - Disclaimer - Waiver" which follows.

NO WARRANTY - DISCLAIMER - WAIVER

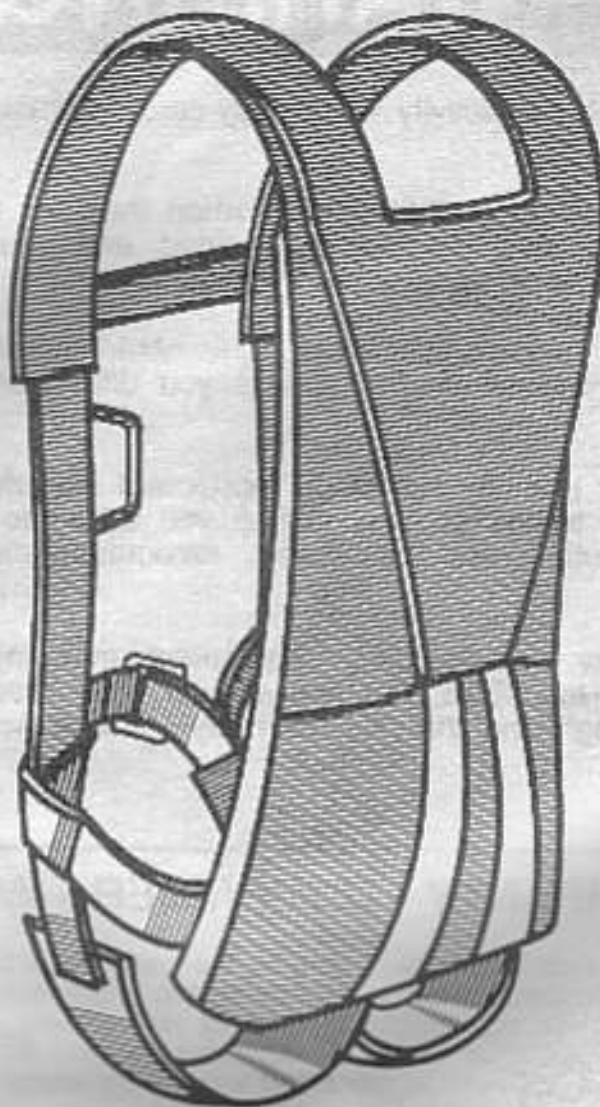
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The liability of National Parachute Industries, Inc. is limited to the replacement of defective parts found under examination by manufacturer to be defective in material or workmanship within 120 days after purchase, and which has not been caused by an accident, striking, improper use, alteration, tampering, excessive use, misuse or abuse. The damages of the Buyer and/or user shall be deemed liquidated in the costs of replacement as above.

*Illustration of National
Back Style Parachute*



PART NUMBERS:

PARACHUTE – HARNESS/CONTAINER ONLY

P/N: 81101-2	360	Back Style
P/N: 81101-2	425	Back Style
P/N: 81101-2	490	Back Style

PARACHUTE – CANOPY ONLY

P/N: 81002-10	Phantom Aerostar 24
P/N: 81002-20	Phantom Aerostar 26
P/N: 81002-40	Phantom Aerostar 28

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12/01

National 425, 26' canopy

-- Check List --

NATIONAL PARACHUTE - YOUR ONE LAST CHANCE...

World's Best Known Name in Emergency Parachutes!

National Parachute is proud of its fine line of Pilot Emergency Parachutes. When you receive your new parachute system, please check the following:

- > Weight and airspeed limitations are listed on the orange warning label attached to the pocket under the "National" monogram on inboard side of right shoulder. Removal of this label voids all warranties and the TSO. Fold warning label into pocket when wearing parachute, otherwise display label.
- > For ease of access, the packing data card & TSO ID tag are located adjacent to warning label, inside the riser cover on right shoulder.
- > The extra pad(s) with your pilot rig are provided in case you decide to change from Thread Thru hardware to snaps in the future.
- > If parachute is purchased with the GRF "option," the "standard" long leg pads are provided. Pads can be installed by the user if GRF is removed.
- > Laundering instructions for sheepskin option: 1) Rinse with cool water. 2) Wash in warm, soapy water for 3 minutes. 3) Rinse in warm water (twice).



Allow to go through spin Cycles. If wringer type, put through wringer or squeeze out, do not twist. Air dry, then brush. 4) Dryer set at 120 degrees.

- > Seat or Chair models require supplement packing instructions.

CHECK LIST:

- Pilot Rig is Packed
- Size / Model
- Warning Label
- Owner's Manual
- Chair / Seat Supplements
- Decal
- Snap Pads Attached Or Enclosed
- Accessories
- Order Complete
- Save Box for Repacks



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Parachute Highlights

NATIONAL PARACHUTE -- YOUR ONE LAST CHANCE...

World's Best Known Name in Emergency Parachutes!

Highlights for the finest emergency parachutes available today!

NEWS BULLETIN: Nov. 11, 1999

Announcing the new, "A" Harness Option for National Back, Seat and Chair Parachutes. The purpose is to position leg strap hardware away from lap belt. The snap and V-ring are moved 5" rearwards to position the hardware behind lap belt. It serves the same purpose as the "Aerobic" harness by relocating the hardware.

HIGH-TECH PHANTOM AEROSTAR CANOPY:

All National Pilot Emergency Parachutes include the innovative Phantom Aerostar canopy: High profile conical design, 1.1 oz. ripstop nylon, full stow diaper, interwoven crown support band, laminated Kevlar reinforcing, pH Certified Mesh and Ram-Air type line attachment; clearly the state-of-the-art in parachute design and construction.

CALIBRATED STEERING VENTS:

In most reserves the vent size is determined by the size of the "A" panel. The vents in the Phantom Aerostar are uniquely sized for the best combination of steering, stability and rate of descent for each size/model.

FULLY ADJUSTABLE HARNESS:

It is standard to have adjustable chest and leg straps; in addition to this, our stock harness enables full adjustment of the main lift web. This

provides greater comfort and proper fit for a wide range of body sizes.

GRAVITY RETAINER FLAP:

The "GRF" is designed to hold the parachute down and in place while doing aerobatics, just as gravity does normally. Features and Options:

- Prevents parachute from lifting or shifting
- Attached to base/bottom of parachute
- Improves seating comfort
- Leg strap integrated
- Custom options available

5 YEAR OWNER PROTECTION PLAN:

All National Pilot Emergency Parachutes are covered by our extraordinary five (5) Year Owner Protection Plan. If your parachute is damaged in any way during actual emergency use, National pays for the repair or replacement. We have great confidence in our fine products and we stand behind them!



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National Parachute News

January

SPECIAL EDITION

1997

AIR SPEEDS & PARACHUTES

In recent years aerobatic aircraft have seen a vast increase in performance and speed. During various maneuvers it is common to exceed 200 knots.

Parachutes, on the other hand, have *not* kept up with this increase. The typical "modern emergency parachute" (of various makes) manufactured in the 80's and 90's is rated up to a maximum deployment speed of 140-150 knots.

BACKGROUND:

In 1981, National set out to design and successfully market a parachute to meet customer demands & requirements in the following areas:

- Small volume
- Light weight
- Comfortable
- Competitive Price
- Meet TSO Requirements

With the above parameters in mind, we developed the *National* line of emergency parachutes. Seventeen years and over 11,000 parachutes later, we earned numerous letters of appreciation for saved lives.

The question some pilots now ask is "what will happen if I bail out and open the parachute at 200+ knots? The answer is "we can not predict the results." Although testing requires a margin of safety, we have no way to

determine the breaking point. Our parachutes are rated at and clearly display a placard indicating 140 knots is the maximum deployment speed.



Emergencies come in different varieties. In a "high air speed" situation (beyond 140-150 kts.) the aircraft may become "aerodynamically dirty" and slow down considerably. If circumstances require an immediate high air speed bail out, we strongly advise the pilot to *delay pulling the ripcord* for 3-4 seconds after exit. In that short time the human body in free fall will decelerate rapidly to air speeds falling within design parameters.

From a development & manufacturing standpoint, time will determine if a broad demand exists for parachutes designed to withstand increased air speeds. Given current parachute materials and technology, this design would be heavier, bulkier and considerably more costly.

(ENL)



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12/2001

PARTS LIST

National 425
26' canopy

PART #	DESCRIPTION
80561-35	*French "Maillon Rapide" #5 Links
81002-1	Phantom 24 Canopy (National 360 only) on #5 Links.*
81002-10	Phantom 24 Aerostar (National 360 only) on #5 Links.*
<u>81002-2</u>	Phantom 26 Canopy (National 425 only) on #5 Links.* ←
<u>81002-20</u>	Phantom 26 Aerostar Canopy (National 425 only) on #5 Links.* ←
81002-4	Phantom 28 Canopy (National 490 only) on #5 Links.*
81002-40	Phantom 28 Aerostar Canopy (National 490 only) on #5 Links.*
81101-2	Harness/Container Assembly Back Style only.
81101-2P	Emergency Parachute Manual
81101-3	Harness/Container Assembly Seat Style only.
81101-3P	Emergency Parachute Manual -- Seat Supplement
81101-5	Harness/Container Assembly Chair Style only.
81101-5P	Emergency Parachute Manual -- Chair Supplement
81101-24	Pilot Chute Bridle, 1" Square Weave Nylon Mil-T-5038, finished to a length of 54.0".
81101-27A	Ripcord Housing, 21.0" O/A length.
81101-27B	Ripcord Housing, 24.0" O/A length.
81101-28A	Locking Loop, Container, Type Ila Line, MIL-C-5040 sewn to finished length of 8 1/2" (8.5) for Back and Chair Style only.
81101-28B	Locking Loop, Container, Type Ila Line, MIL-C-5040 sewn to finished length of 10" / 10 1/2" (10.5) / 11" for Seat Style only.
81101-29	Elastic Staging Loop, 1/8" (.125) Shock Cord, for Seat Style only.
81201-5	Pilot Chute, 357 Magnum-S with tabs, 36" dia., rapid inflation - No substitutes allowed.
81301-2A	Ripcord 33 1/4" (33.25) O/A, 2 pins, spaced 6 3/8" (6.375) apart, with metal Martin Baker handle.
81301-2B	Ripcord 33 1/4" (33.25) O/A, 2 pins, spaced 6 3/8" (6.375) apart, with metal "D" handle.

CAUTION CAUTION CAUTION

Choose Model Size based on pilot weight. Recommended Model Sizes:

Up to 177 lbs. pilot weight - National 360 with 24' Canopy

Up to 208 lbs. pilot weight - National 425 with 26' Canopy ←

Up to 241 lbs. pilot weight - National 490 with 28' Canopy

OPERATING LIMITATIONS

Recommended minimum deployment height:	500 ft AGL
Pilot weight range:	100 lb (45 kg) to 241 lb (109 kg)
Stability:	$\pm 5^\circ$ from vertical at gross
Normal altitude loss during opening:	200-300ft
Ripcord pull force:	5 lbf (23 N) Min. / 22 lbf (97.9 N)
Forward drive:	3 -10 kts (depending upon weight)
Steerability:	360° in 10 seconds at gross weight
Opening time:	2½ - 3 seconds (normal opening)
Opening speed:	140 Knots maximum (all sizes)

AEROSTAR SERIES IN EFFECT 01/01/90

Phantom AeroStar series 24, 26 and 28 are folded and packed identical to the Phantom 24, 26 and 28 series. The AeroStar includes all of the standard features - high profile conical design, ultra low air permeability ripstop nylon fabric, full stow deployment diaper, interwoven crown support band and low bulk braided nylon lines. Perhaps even more important are the all new features exclusive to the Phantom AeroStar:

- 5 Year Owner Protection Plan - the Phantom AeroStar is covered by our extraordinary 5 year Owner Protection Plan. If your reserve is damaged in any way during actual emergency use, National pays for the repair or replacement. We have great confidence in our products and we stand behind them.
- pH Certified Mesh - the new super strong mesh used in the steering vents is Certified pH neutral (6-8) by the manufacturer and by National.
- Laminated Kevlar Reinforcing - now all reinforcing bands (skirt, crown and apex) are constructed with laminated Kevlar, providing unprecedented strength and resistance to friction burns. The highly important skirt band has more than twice the strength of competitive reserves.
- Calibrated Steering Vents - in most reserves the vent size is determined by the size of the "A" panel. The vents in the Phantom AeroStar are uniquely sized to provide the best combination of steering, stability and rate of descent for each size/model.

PHANTOM RUBBER BANDS

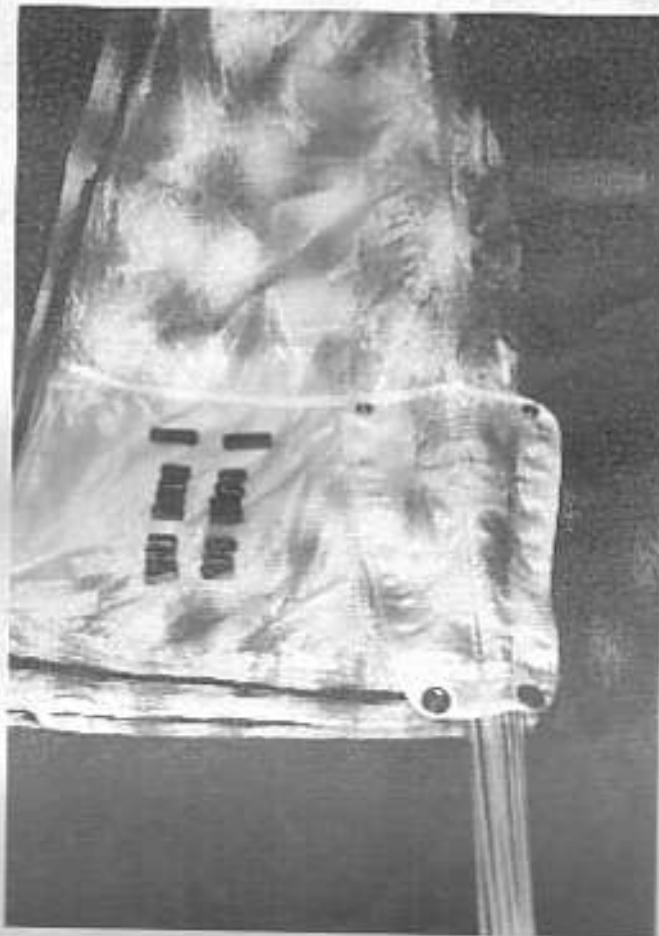
Pictured are new special rubber bands designed specifically for packing Phantom Round Reserves.

These bands are similar to the standard retainer band but are 1¼" long so that more tension is maintained on the low bulk lines.

If you would like to order more, they are available from National in 1 lb. boxes.

NOTE:

We recommend that standard Parachute Industry type rubber bands be used for the first two Locking stows (two rubber bands that get attached to the #0 grommets). For the balance use Phantom rubber bands.



FITTING OF THE PARACHUTE

The standard harness has thread-thru adjustments on both leg straps and on the chest strap. Put the pack and harness on over the shoulder and fasten the chest strap. Pull the leg straps up between the legs and fasten both sides. Pull the free ends of the straps to remove excess slack and still maintain comfort. Models after 01/1988 have a floating harness (see our donning instructions pages 12-14).

HANDLING THE PARACHUTE

When your National 360, 425 and 490 is in the aircraft care must be exercised to insure that it is not damaged. Be sure that it does not come in contact with any sharp metal surfaces, or any loose objects which might cut or snag it. All metal edges, exposed nuts and bolts, etc. should be taped or covered to prevent wear on the parachute container. Be sure that the parachute does not come in contact with water, oils, acids, grease or dirt. When in doubt consult your nearest parachute rigger, parachute loft or the manufacturer.

Prior to each flight the parachute should be inspected before it is put on. Check for any unsafe condition. Check the ripcord and be sure the handle is secure but accessible. Lift the back flap and check the ripcord pins to be sure they are properly seated in their loops. Check the packing data card to be sure that the parachute has been repacked within the previous 120 days.

NOTE: The 120-day repack cycle recommended by the manufacturer is a maximum. If for any reason your parachute is not in the condition it was when packed, it should be inspected and repacked, regardless of the time since previous packing. For foreign customers - see Advisory Circular on page 11.

USING THE PARACHUTE

Refer to operating instructions and canopy control pages 15-20.

CARE OF THE PARACHUTE

Refer to page 21.

ADVISORY CIRCULAR

ALL NATIONAL 360, 425 AND 490 EMERGENCY PARACHUTE ASSEMBLIES (BACK, SEAT AND CHAIR)

THE NATIONAL EMERGENCY PARACHUTE OWNERS MANUAL ITEM - CARE OF THE PARACHUTE

Inspection and packing (general) specifies a maximum period of 120 days between successive inspection and repack cycles.

This provision exists under US FAA Part 91.15 which requires the 120 day periodic inspection and repack cycle.

Where no Government Legislation exists to set a mandatory inspection and repack cycle, the above listed National Emergency Parachutes series may have the inspection and repack cycle extended to 8 months.

DONNING INSTRUCTIONS

For units with "FLOATING HARNESS". (Jan. 1988 onwards) This harness enables you to fully adjust your harness for a customized fit.

Please take a moment to study our illustration showing the components of the harness (page 13).

The main lift web (MLW) passes between two layers of side strap webbing. On the back of the MLW beneath your ripcord handle is a strip of Velcro Pile. On the inside of your side strap is a strip of Velcro Hook. When these two pieces of Velcro are mated your MLW and side strap are held in place. To change adjustment, insert your index and middle fingers between the two layers of webbing and peel Velcro parts apart. Keep fingers inserted to prevent Velcro from remating. Slide MLW strap to desired position. Remove fingers and press two Velcro parts firmly together.

Your pilot rig also comes with adjustable leg pads. The pads can be easily moved on your leg strap (below the junction of side strap and MLW). To keep them to the desired position, insert index finger between back of leg strap and upper end of leg pad cushion and unmate the Velcro. Slide cushion to new position, remate Velcro and firmly press Velcro parts together. The pads will now be held in proper adjustment for future use.

Suggested steps to fit your pilot rig (page 14).

1. Stand backpack upright in a standard chair with back rest.
2. Unthread/unsnap chest strap and leg straps, let them hang loosely to the side.
3. Seat yourself in the chair.
4. Drape shoulder/yoke part of harness over your shoulders; fasten chest strap.
5. Follow steps pertaining to unmatting and mating of Velcro parts as described earlier and move side strap to desired position.
6. Bring leg straps around your thighs, thread them through adapters or if harness is equipped with snaps, hook snap up with V-ring adapter and pull to remove slack. Now stand up and move leg pads to desired position and mate Velcro parts as described above. Tighten up leg straps as tight or as loose for your comfort. Tuck leg strap ends into leg pad cushion.

FLOATING HARNESS

