

Experimental Rocketry Motor Casings and Hardware Email : woody@proxhardware.i8.com

PRO-X HARDWARE

P.O. Box 1011
Tooele, UT 84074
435-882-6547

www.PROXHARDWARE.com

Please send payment to address at left.
Check, Cashiers Check, or Money Order
Payable to **Woody's Rockets**

10/31/2002

38 mm Motor Case Set



3" Motor Case Set



Forward Closure



3" Nozzle Adapter Set



3" Nozzle Sets



Nozzles: 38 mm, 2", 3"



Case Length	Propellant Length *	Propellant Grains	Motor Case	Quantity	Complete Motor (1)	Quantity	TOTAL
38 mm Motor							
6.25"	4.0"	2	\$18		\$48		
8.25"	6.0"	3	\$22		\$52		
10.25"	8.0"	4	\$26		\$56		
14.25"	12.0"	6	\$34		\$64		
20.25"	18.0"	9	\$48		\$78		
3 Inch Motor							
15.0"	10.5"	2 +1ts	\$70		\$140		
22.875"	19.5"	4 +1ts	\$115		\$185		
31.875"	28.5"	6 +1ts	\$140		\$210		
43.875"	40.0"	(8 or 9) +1ts	\$200		\$270		

* 38 mm - closure and nozzle installed total length 2.25", average grain length ~2.0"

* 3 Inch - closure and nozzle installed total length 3.5", average grain length ~4.5"

ts = tracking smoke grain ~1.5"

1) Complete motor includes: Forward closure, motor case, blank nozzle, nozzle washer, one set "o" rings for closure and nozzle, and snap rings. **(Thrust Ring Extra)**

Miscellaneous Motor Parts	Price Each	Quantity	TOTAL
38 mm Motor			
Forged Eye Bolt 3/8"	\$6		
Forward Closure - Plugged	\$15		
Silicone "O" Ring (1-Fwd Closure, 2-Nozzle)	\$1		
Snap Ring	\$1		
Nozzle Washer	\$1		
Thrust Ring	\$6		
38 mm Graphite Nozzle Blank	\$16		
3 Inch Motor			
Forged eye Bolt 1/4"	\$4		
Forward Closure - Plugged	\$30		
Silicone "O" Ring (2-Fwd Closure, 2-Nozzle)	\$2		
Snap Ring	\$3		
Nozzle Washer	\$5		
Thrust Ring	\$10		
3 Inch Motor Nozzle Set			
3" Nozzle Adapter (use with 2" graphite nozzle in 3" motor case, (additional "O" rings, nozzle washer, trust ring & snap ring required)	\$40		
Nozzle Blank 2" (use with adapter above)	\$30		
Nozzle Blank 3"	\$55		

Call: 435-882-6547
Email : Woody @ proxhardware.i8.com

ORDER TOTAL + Shipping charges :

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Pro-X Hardware provides motor cases and motor hardware for high power experimental rocketry. Tubing is available in the popular rocket motor size of 38 mm and 3 inch (76 mm). All Pro-X Hardware motor tubing is anodized in brilliant purple. Anodizing provides extra strength to the tubing as well as a distinctive and durable finish. Every motor tube is carefully machined to established dimensions and tolerances. Propellant sizing is suggested on the order form. How you manufacture and configure the grains is up to you.

Pro-X Hardware is **NOT** compatible with commercial reloads like Aerotech, Kosdon TRM by Aerotech or Animal Motor Works. However, Pro-X Hardware is machined to the same specs as Kosdon motor tubing. Forward closures are plugged and have no well for traditional black powder recovery charge or delay grain. An altimeter, timer or similar device is necessary to control recovery deployment for your rocket.

A typical motor is assembled with the propellant grains sleeved in a paper liner and inserted in the mid section of the motor case. Motor parts are assembled using a system of "O" rings to seal the forward closure and the nozzle. Snap rings are used to secure the forward closure and the nozzle washer, nozzle and thrust ring aft. A motor retainer ring is installed on the exterior of the case.

Experimental Rocketry is where **YOU** make the propellant. Several sources exist for gaining an understanding of propellant formulation.

Graphite Nozzles

Each nozzle blank is expertly machined to fit Pro-X Hardware from fine grade graphite.

A Nozzle Adapter is recommended for the 3 inch 15 " and 22.875 " cases, for potential "K" and "L" reloads respectively. The adapter set sleeves into the aft of the motor case just like the full size 3" nozzle. (Additional "O" rings, nozzle washer thrust ring and snap rings are needed). The full size 3" nozzle is recommended for experimental reloads of full "L" and higher in the 31.875" and 43.875" motor cases.

You drill the nozzle throat to your specs based on analysis of your propellant.

Pro-X Hardware graphite nozzles are intended for Pro-X Hardware.

Experimental High Power Rocketry is an unpredictable sport !

Because of the inherent dangerous nature of this sport, and with the buyer developing formulated propellant for high power rocket ships, the buyer assumes any and all liability associated with the purchase and use of materials from Pro-X Hardware.