

POWER BEAM®

LINEAR TECHNOLOGY PRODUCTS

INDUSTRIAL LINEAR DRIVES & ACCESSORIES

Pneumatic · Electric · Hydraulic



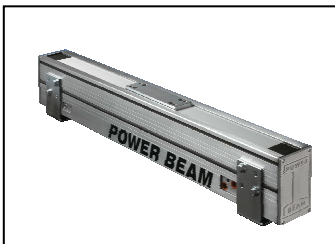
"Original"
IA Series
Pneumatic

*"Power Beam linear drives
integral load support and speed
greatly simplified the design of
our machines."*

Dennis Debano
Belmont Engineering

*"Four years and counting, the
Power Beam has proven itself."*

Ron Huisman
Dofasco Steel



"IA" Series

Original • Lite



"IM" Series

Standard • Electric



Rodless Repair

• All brands •



Linear Guides

BENEFITS:

- Rugged, enclosed, load supporting linear drive with new generation integral linear bearing load support
- Loads to 700+ pounds, and strokes to 20 feet
- High speed, accurate positioning
- Versatile mounting: horizontal, vertical, incline
- Your choice: pneumatic, electric or hydraulic drive source
- Built to customer requirements in North America since 1988

www.powerbeam.ca

INTRODUCTION / BENEFITS:

AN EXTRAORDINARY LINEAR DRIVE SYSTEM:

- Power Beam is a fully enclosed, load supporting linear drive
- Match your application with three different power sources (Pneumatic, hydraulic, electric) and travel/strokes to 20 ft*
- Internal bearing support on carriage for loads to 700+ lbs, eliminating external bearing guides in your design
- High moment capability from 100 to 600 pound feet allow offset positioning of load, for installation where other drive designs would not be suitable
- The entire unit operates in a protective enclosure, reducing maintenance as the external environment has little impact on its operation
- Power Beam linear actuators have been manufactured in North America and successfully installed in challenging environments since 1988.

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* Note: Metric specifications / dimensions available

BENEFITS / ADVANTAGES:



- **LONG LIFE:** Due to the robust construction and fully enclosed design, Power Beam is among the longest lasting linear actuators available today.
- **SIMPLIFIES YOUR DESIGN:** Power Beam is equipped standard with high performance linear guides to support your loads up to 700+ lbs. The combination of “I” beam construction with standard tandem linear guides, allow high moment ratings from 100-600 lb/ft. This eliminates building external support in your design.
- **VERSATILITY:** Mounting in any orientation is possible using the standard foot brackets (included with each Power Beam)
- **CONTROL CHOICES:** Easily match your motion requirements with one of our drive systems:
 - Pneumatic Power Beam “IA” Series offers the longest adjustable cushion in the industry ideal for “end-to-end” motion requirements.
 - Power Beam’s motor driven “IM” Series offers robust accuracy and versatile control for more demanding motion requirements, utilizing stepper, servo, AC, hydraulic, or pneumatic motors.

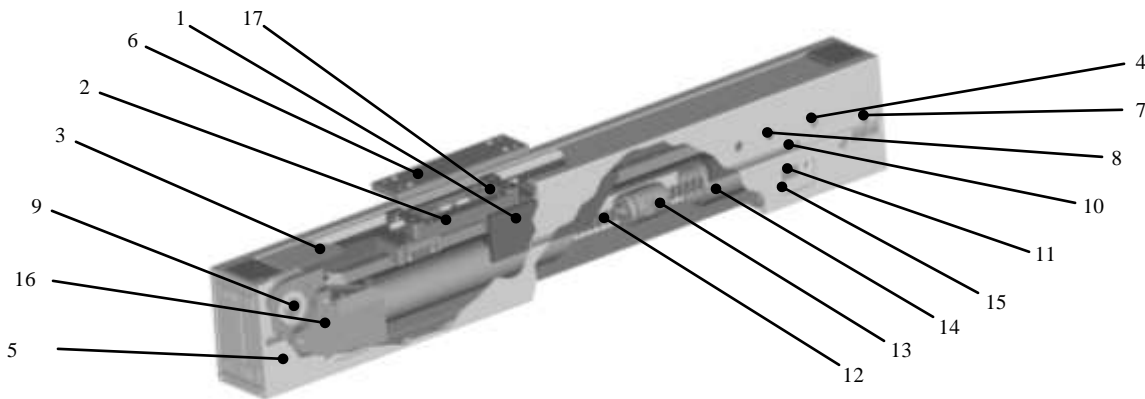


DESIGN EVOLUTION / HISTORY:

The following describes the design evolution from the original Power Beam pneumatic model to the current models:

November 1986	Ascoelectric designs and trademarks original IA series Power Beam linear actuator in a pneumatic version and low-pressure hydraulic version. Ascoelectric introduces and markets the original "Power Beam" linear actuator. This totally enclosed, internally load supported linear actuator is adopted in hundreds of applications worldwide.
February 1995	Ascoelectric introduces "B" series featuring lower carriage height, non-lube piston design, and standard polyester dust belt.
February 2001	Lawrie Smith Mechanics (LSM Inc.) purchases from Ascoelectric the Power Beam name, design, trademarks, manufacturing equipment and inventory. LSM Inc. registered the company as "Power Beam" and successfully re-locates manufacturing and administration to Elora, Ontario, Canada.
April 2001	Power Beam refines production, reducing lead times and improving customer service.
September 2002	Power Beam introduces "C" and "D" series featuring linear guidance system, incorporating modern "THK" style linear bearings, standard external grease access and standard purge port. This reduces lead times, improves product longevity and eases repair and maintenance.
October 2003	Power Beam expands product line to include linear guides, ball screws and rodless cylinder repairs.
March 2004	Power Beam introduces new "IM" version featuring the same rugged load supporting features of the original Power Beam, plus the choice of toothed-belt or ball screw drive force.
July 2004	Power Beam introduces new "IMC" version of rugged motor driven actuator with compact external dimensions.
November 2004	Power Beam introduces "double seal" option on pneumatic actuator to increase longevity in harsh environments.
December 2004	Power Beam introduces "IM800 Integral" version of rugged ball screws driven actuator with integral, <u>self-contained</u> servomotor.
Ongoing	Building upon the solid original design of the Power Beam, the best linear actuator will continue to get better.

DESIGN FEATURES “IA” PNEUMATIC :



DESIGN ADVANTAGES OF EVERY POWER BEAM :

New generation Power Beams, while retaining the best features of the original design, take advantage of current linear guide technology and added features to further enhance a proven performer.

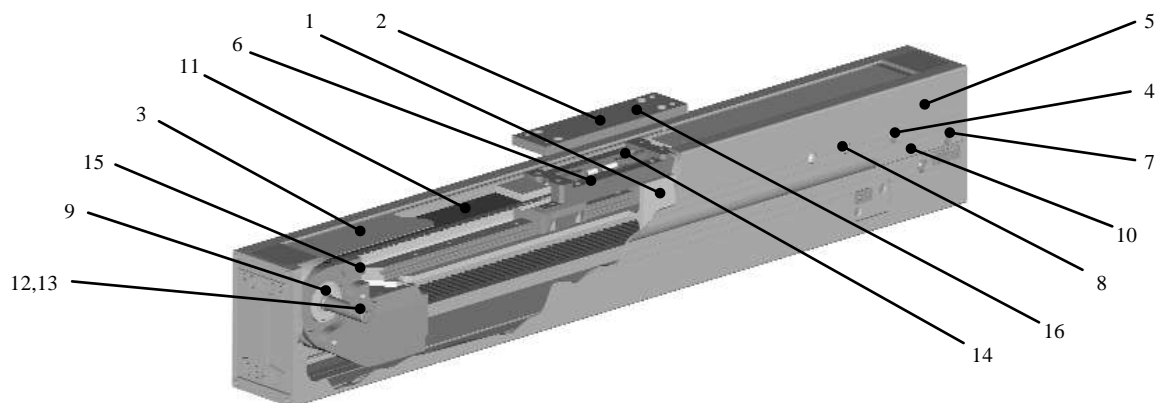
1. Rigid, high tensile aluminum “I” beam.
- NEW!** 2. Load attaches to plated steel carriage, supported by two full size linear guides.
3. Polyester or stainless steel “dust” belt protects internal components (“closed-loop” design eliminates use of magnets to hold belt in place.)
4. Heavy mounting brackets (plated steel, multi-position.)
5. Extruded aluminum covers with integral switch mounting, combined with dust belt, provide an enclosed linear drive, protected from contamination.
6. Low profile, plated steel carriage / load attachment plate. Available in compact to extended lengths.
- NEW!** 7. Purge port, allows application of low pressure air to further prevent ingress of contamination.
- NEW!** 8. External, easy access to linear bearing lubrication fittings.
9. Optional position encoder.
10. Optional limit switches / sensors.

SPECIAL DESIGN FEATURES OF “IA” PNEUMATIC POWER BEAM :

One of the best performing pneumatic rodless cylinders, Power Beam “IA” series is the #1 choice for your application. Available in two bore sizes, providing drive force up to 700 pounds.

11. Longest end-of-stroke adjustable cushioning in industry. (7.0 inches) Achieves controlled deceleration of load
12. Enclosed cable cylinder design featuring nylon coated high tensile steel cables, eliminates side loads on piston, seal and cylinder tube, ensuring long life.
13. Piston with high performance bi-directional seal and standard glide ring provide extremely long life.
14. Cylinder tube: Hard anodized aluminum available in 2.50” and 3.25” bores.
15. Dual connection ports at one end standard. Port at each end optional.
16. Rugged self-lubricating cable seals.
17. Dependable automatic cable tensioning achieved with stacked Belleville washers.
18. Available double cable seal for aggressive environments

DESIGN FEATURES “IM” MOTOR DRIVEN:



DESIGN ADVANTAGES OF EVERY POWER BEAM :

New generation Power Beams, while retaining the best features of the original design, take advantage of current linear guide technology and added features to further enhance a proven performer.

- 2. Rigid, high tensile aluminum “I” beam.
- NEW!** 2. Load attaches to plated steel carriage and supported by two full size linear guides.
- 7. Polyester or stainless steel “dust” belt protects internal components (“closed-loop” design eliminates use of magnets to hold belt in place.)
- 8. Heavy mounting brackets (plated steel, multi-position.)
- 9. Extruded aluminum covers with integral switch mounting, combined with dust belt, provide an enclosed linear drive, protected from contamination.
- 10. Low profile, plated steel carriage / load attachment plate. Available in compact to extended lengths.
- NEW!** 7. Purge port, allows application of low pressure air to further prevent ingress of contamination.
- NEW!** 8. External easy access to linear bearing lubrication fittings.
- 19. Optional position encoder.
- 20. Optional limit switches / sensors.

SPECIAL DESIGN FEATURES OF “IM” MOTOR DRIVEN POWER BEAM :

Power Beam “IM” series gives the designer a choice of power sources, positioning/speed performance, and retains the best features the pneumatic series. Drive forces available to 1000 pounds.

- 21. High tensile reinforced belt drive, or optional ball screw drive.
- 22. Choice of motor drive shaft locations and sizes up to 1.38”
- 23. Large diameter drive pulleys and shafts to 1.38” diameter for long life and high power.
- 24. Dependable automatic belt tensioners.
- 25. Over travel bumpers.
- 26. “Compact” IM series provides smaller external dimensions and available short carriage plate for confined mounting locations.

NOTE: Ball screw driven IM 800 and IM 900 available, contact factory.

SPECIFICATIONS SUMMARY:

“IA” Series Power Beams

IA 250 (Pneumatic) / IA 325 (Pneumatic)

Construction:	Cable type pneumatic linear actuator with built-in (I-Beam supported) linear guide, enclosed in high strength extruded aluminum covers and “closed-loop” dust belt system.
Operation:	Double acting cylinder, with end of travel cushioning of 7.0in /178mm, and position sensing capability.
Protection:	Internal components protected by aluminum enclosure and “closed-loop” re-circulating dust belt. Purge port standard.
Media:	Compressed air, slight lubrication or non-lubrication.
Operating Pressure:	50-150 PSI / 3.4-10.3 BAR
Lubrication:	Pneumatic: not required, pre-lubricated at factory. Extended life will be achieved with lubrication. Linear guide: standard external access to grease fittings. Extended life will be achieved with lubrication
Bore Sizes:	2.5in / 63mm, 3.25in / 80mm
Maximum Stroke:	20.0FT / 6.00mtr
Load Support:	2 x 25mm linear guides traveling on hardened 25mm rail allows high moment loads (see load rating, page 11)
Repeatability*:	+/- 1/16in / 2.0mm
Accuracy*:	+/- 0.010in / 0.0025mm
Port Position:	Dual ports one end standard, convertible to single port each end.
Ambient Temp Range:	14 - 104°F / 10 - 40°C
Weight:	Base weight = 62 lbs / 28 Kg + 1 lb / . 45Kg per 1in / 25mm of travel (eg: 24in travel = 62 + 24 = 86lbs)

* **Note:** Positioning Accuracy + Repeatability based on several factors. Please contact factory for details.

“IM” Series Power Beams

IM 600 (Belt Drive) / IM 600C (Compact Belt Drive)

IM 700 (Belt Drive)

Construction:	Dual pulley driven, toothed belt, linear actuator with built-in, (I-Beam supported) linear guides, enclosed in high strength extruded aluminum covers, and “closed-loop” dust belt system.
Weight:	Base weight = 62 lbs / 28 Kg + 1 lb / . 45Kg per 1in / 25mm of travel (eg. 24in travel = 62 + 24 = 86lbs) (Compact: eg: 24in travel = 60 + 21.6 = 81.6lbs)
Operation:	Motor driven pulley, reinforced toothed belt, actuating a linear guide supported carriage.
Protection:	Internal components protected by aluminum enclosure and “closed-loop” re-circulating dust belt. Purge port standard.

SPECIFICATIONS SUMMARY (CONT'D)

Load Support:	2 x 25mm linear guides traveling on hardened 25mm rail allow high moment loads (see load rating, page 11)
Max Speed:	100in / 2.5m / second
Max Travel Length:	20FT / 6.00 Meters
Shaft Size:	5/8, 7/8, 1, 1 3/8in / 16-35mm diameter
Linear Travel Per Pulley Revolution:	11.8in / 300mm
Pulley Pitch DIA:	3.74in / 95mm
Pulley Mass:	IM 600 / 600C = contact factory IM 700 = contact factory
Belt Weight:	IM 600 = .10lb/FT, .15Kg/mtr IM 700 = .12lb/FT, .19Kg/mtr
Max Force:	IM 600, 600C = 700lbs / 318Kg (See Drive Force, Page 10) IM 700 = 1000lbs / 454Kg (See Drive Force, Page 10)
Repeatability*:	+/- .005in / -.001mm
Accuracy*:	+/- .010in / 0.025mm

Note: Position Accuracy + Repeatability is based on various factors, Please contact factory for details

IM 800 (Ball screw Drive) **IM 900 (Ball Screw Drive)**

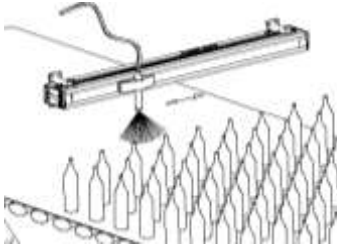
Construction:	Ball Screw driven linear actuator with built-in, (I-Beam supported) linear guides enclosed in high strength extruded aluminum covers, and “closed-loop” dust belt.
Operation:	Motor driven rolled ball screw actuating, (linear guide supported) load carriage.
Protection:	Internal components protected by aluminum enclosure and “Closed-Loop” re-circulating dust belt. Purge port standard.
Max Force:	IM 800 – 700lbs / 318Kg (See Drive Force, page 10) IM 900 – 100lbs / 454Kg (See Drive Force, page 10)
Load Support:	2 x 25mm linear guides traveling on hardened 25mm rail allow high moment load (see load rating, page 11)
Max Speed:	50in / 1.25M per second
Max Travel Length:	118in / 3mtr (Note: max length determined by screw critical speed)
Repeatability*:	+/- .005in / -.001mm
Accuracy*:	+/- .010in / 0.025mm

Note: Position Accuracy + Repeatability is based on various factors, Please Contact Factory

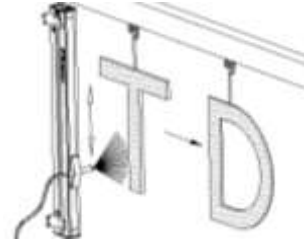
APPLICATIONS:

Power Beam actuators have been successfully installed in a wide variety of applications. These actuators can be installed in horizontal upright, inverted, vertical and inclined positions. Power Beams can be installed in aggressive environments by choosing optimum installation orientation and appropriate options. Choice of pneumatic, electric stepper, servo, AC frequency drive and hydraulic motor drive options allow tailoring Power Beam's performance to application requirements. Built in load supports simplify machine design and fabrication. The following illustrations show some of the applications for Power Beam. Please visit www.powerbeam.ca to view the latest application examples.

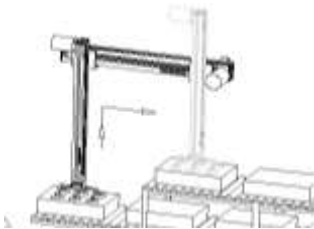
“RINSE”



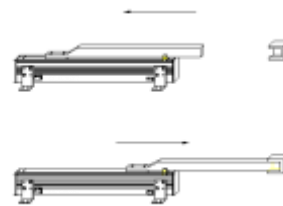
“SPRAY”



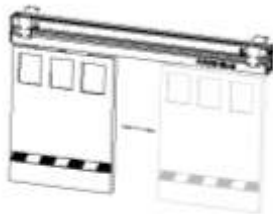
“PICK & PLACE”



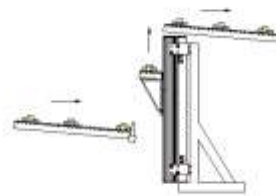
“REACH”



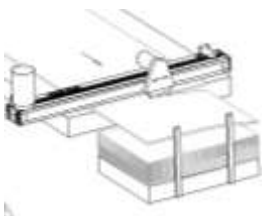
“DOOR”



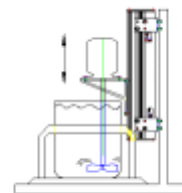
“ELEVATOR”



“CUT-TO-LENGTH”



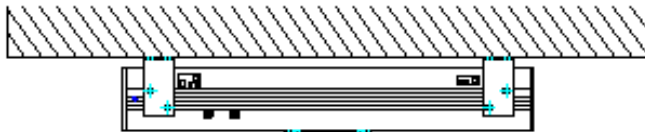
“MIX”



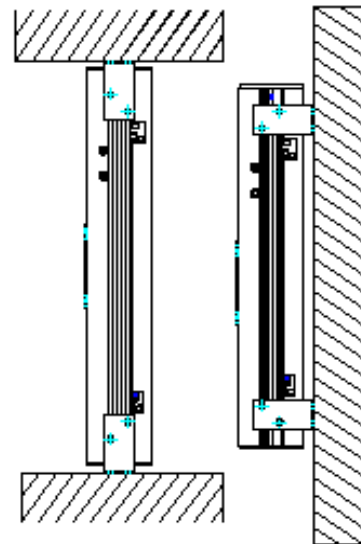
MOUNTING/ INSTALLATION :

- Universal mounting of Power Beam in any position allows flexibility in the application to machine design*
- Each Power Beam is supplied with four (4) universal mounting brackets for horizontal upright, inverted, and vertical mounting.**
- **LOAD MOUNTING:** Load may be directly attached to flat steel carriage drive plate supported by internal linear bearings, or the drive plate may be attached to the machine frame and Power Beam becomes driven. “Wrap-around” drive plate adapter is available to allow inverted mounting of Power Beam.
- **INTERMEDIATE MOUNTING:** Required for long strokes and / or high load applications.
(See Dimensions pages and Loads/ Forces page)
- **DUAL CARRIAGE or LONG CARRIAGE OPTION:** Available to support long / heavy loads.
- **PARALLEL MOUNTING:** Possible using joining drive shafts.
 - * Dust belt facing up or down on horizontal is preferred for longest belt life.
 - ** **CAUTION:** On vertical applications, proper selection and strict adherence to machine safety requirements is advised.

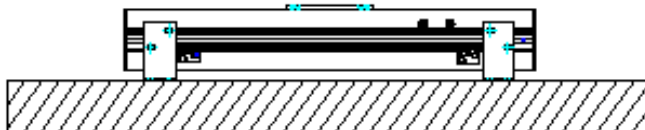
A : HORIZONTAL INVERTED



C : VERTICAL



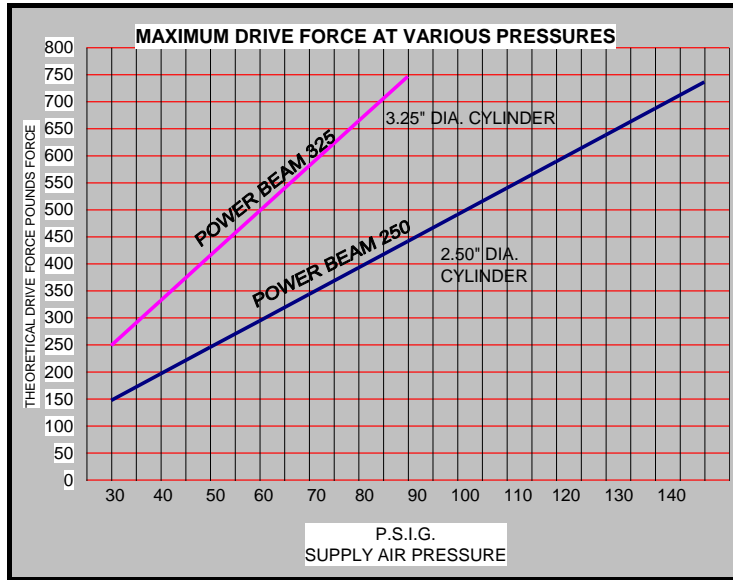
B : HORIZONTAL UPRIGHT



DRIVE FORCE:

“IA” PNEUMATIC POWER BEAM:

Drive force at various pressures



Example:

At the left, the Drive Force in pounds is plotted against the air pressure supply. For example, if the Power Beam 325 was supplied with 70 P.S.I.G. of air pressure, the maximum load that could be “supported” would be 581 pounds. Maximum force recommended 700 pounds.

“IM” POWER BEAM:

Drive force is determined by several factors; (Motor Size, Gear Revolution, Speed, Acceleration, and Inertia) Data below is a general guideline only: (Contact factory for specific applications.)

BELT DRIVE:

IM600 – 700 lbs / 3000 N

IM700 – 100 lbs / 4900 N

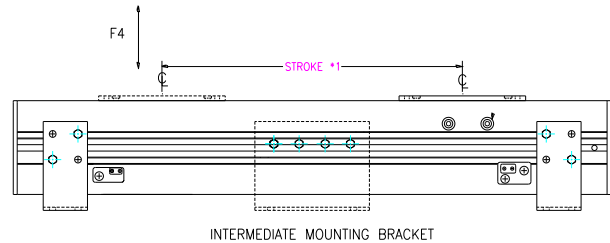
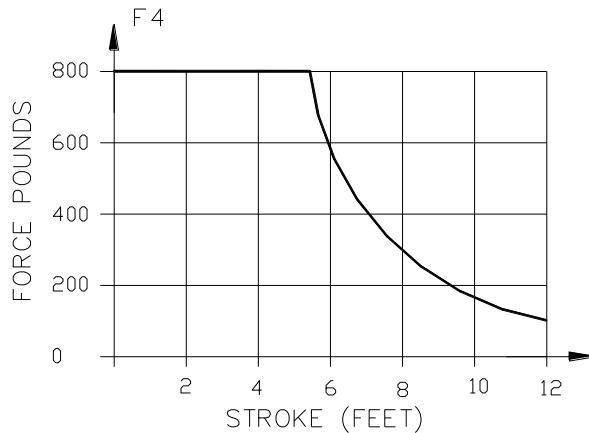
BALL SCREW DRIVE:

IM800 – 450 lbs / 2000 N

IM900 – 960 lbs / 4300 N

LOAD RATINGS:

LOAD / TRAVEL SPECIFICATIONS:



“F4” maximum is determined by distance between mounting brackets

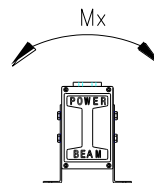
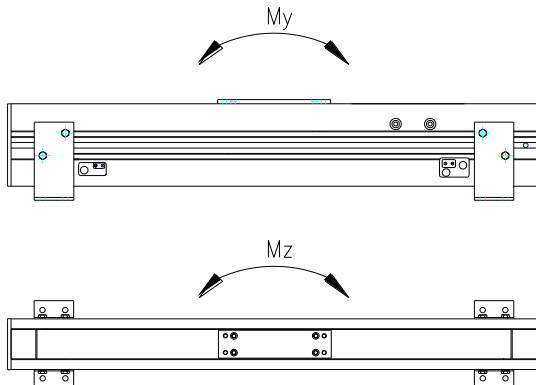
NOTES:

1. When intermediate brackets are fitted, the term “stroke” equals the distance between brackets.
2. Intermediate brackets are provided standard on stroke lengths of 144.0” and longer.

LOAD / MOMENT SPECIFICATIONS:

Power Beam Loading

The preferred configuration for loading is with the center of gravity of the load as close to the surface of the drive plate as possible and coinciding with the center point of the drive plate. Some applications may require variations to the preferred arrangement of loading which produce additional forces that potentially may adversely affect the service life of the unit. To assure satisfactory service it is of significant importance to design Power Beams into systems considering loading, load location configuration, velocity and environment to achieve optimum performance.

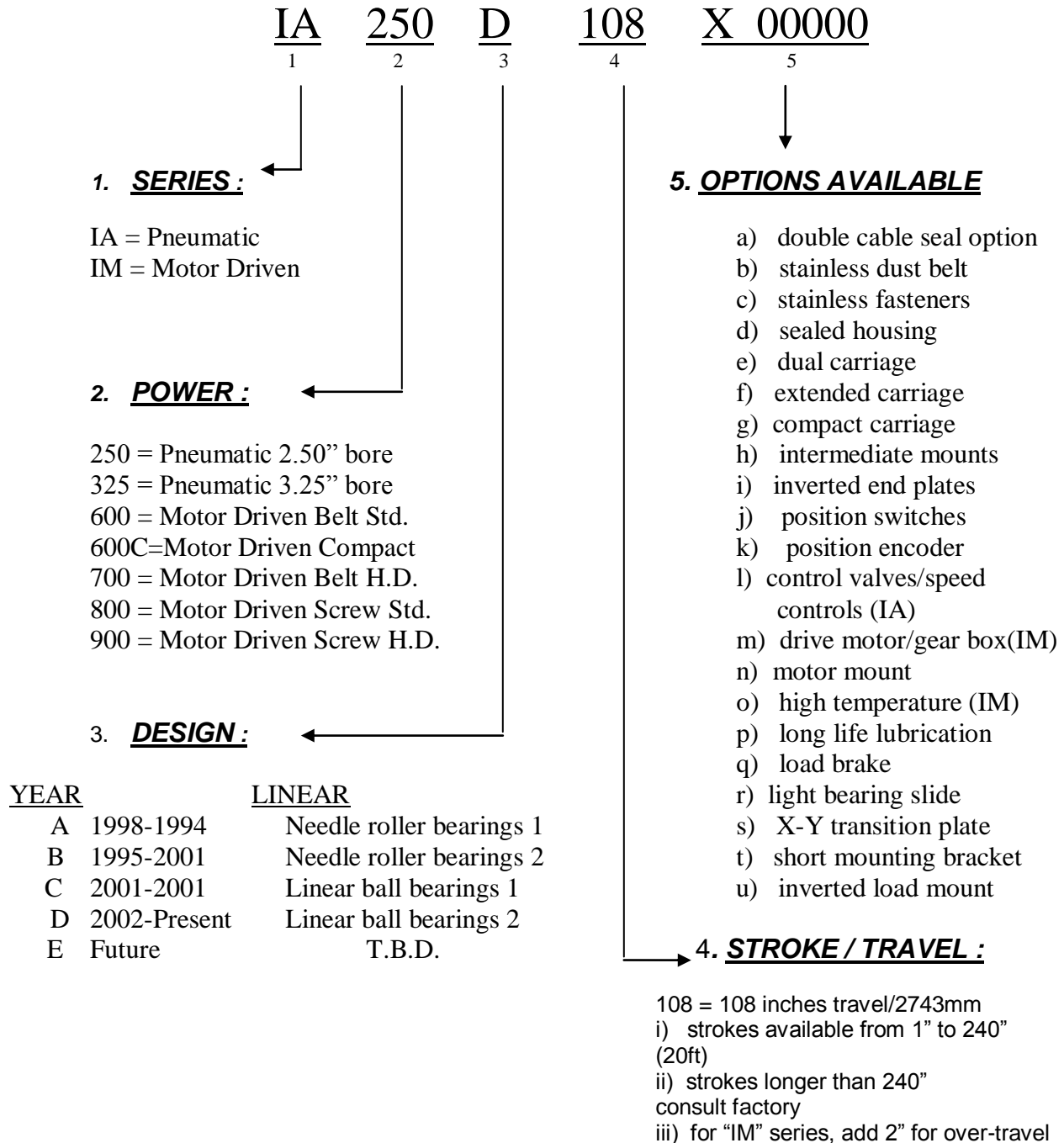


Power Beam Load/Moment	
Mx (Roll)	600 - 1800 in/lbs (60 - 200 Nm)
My (Pitch)	7200 in/lbs (800 Nm)
Mz (Yaw)	7200 in/lbs (800 Nm)

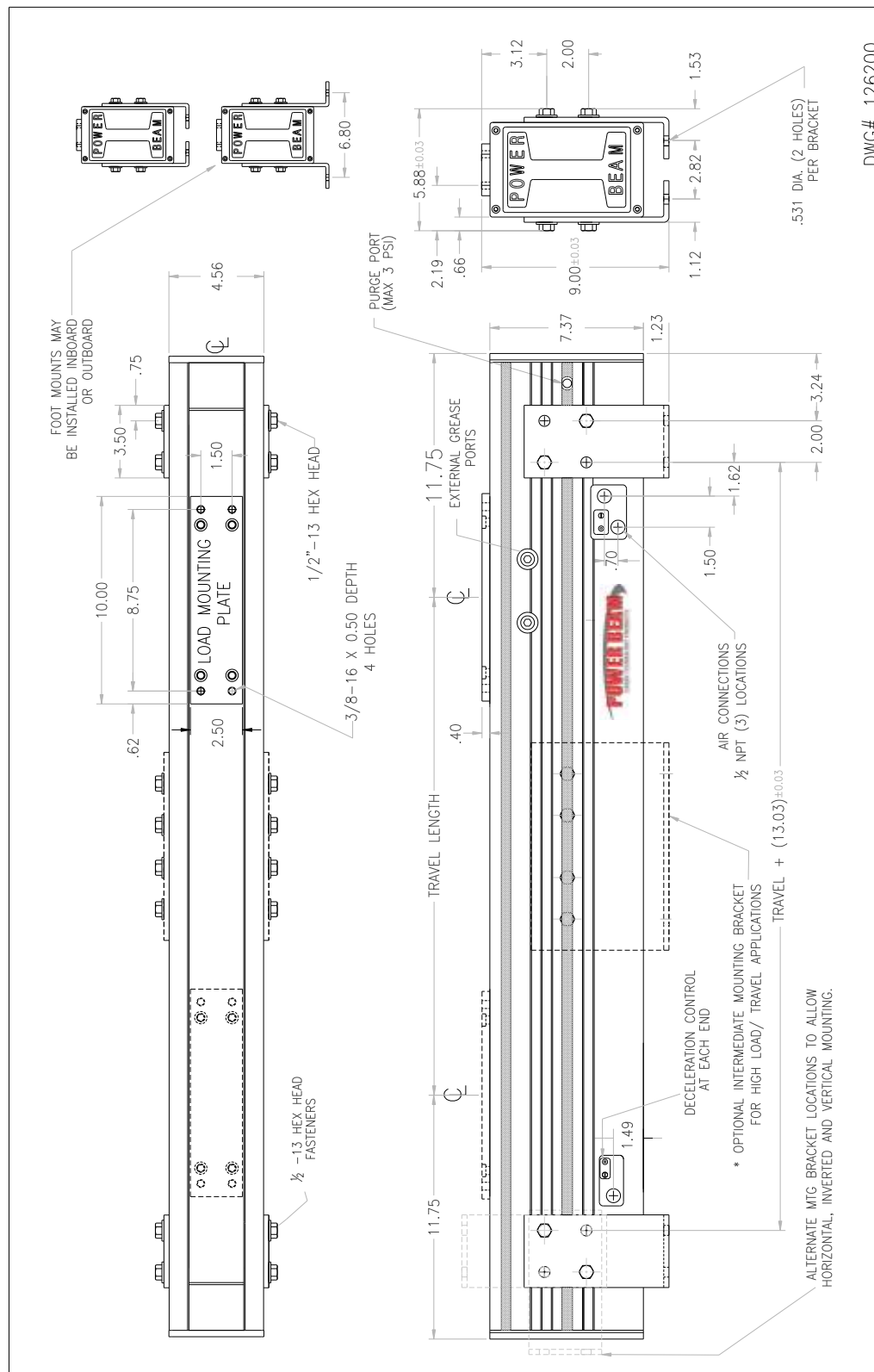
“Mx” maximum is determined by distance between mounting brackets

HOW TO ORDER :

MODEL NUMBER:

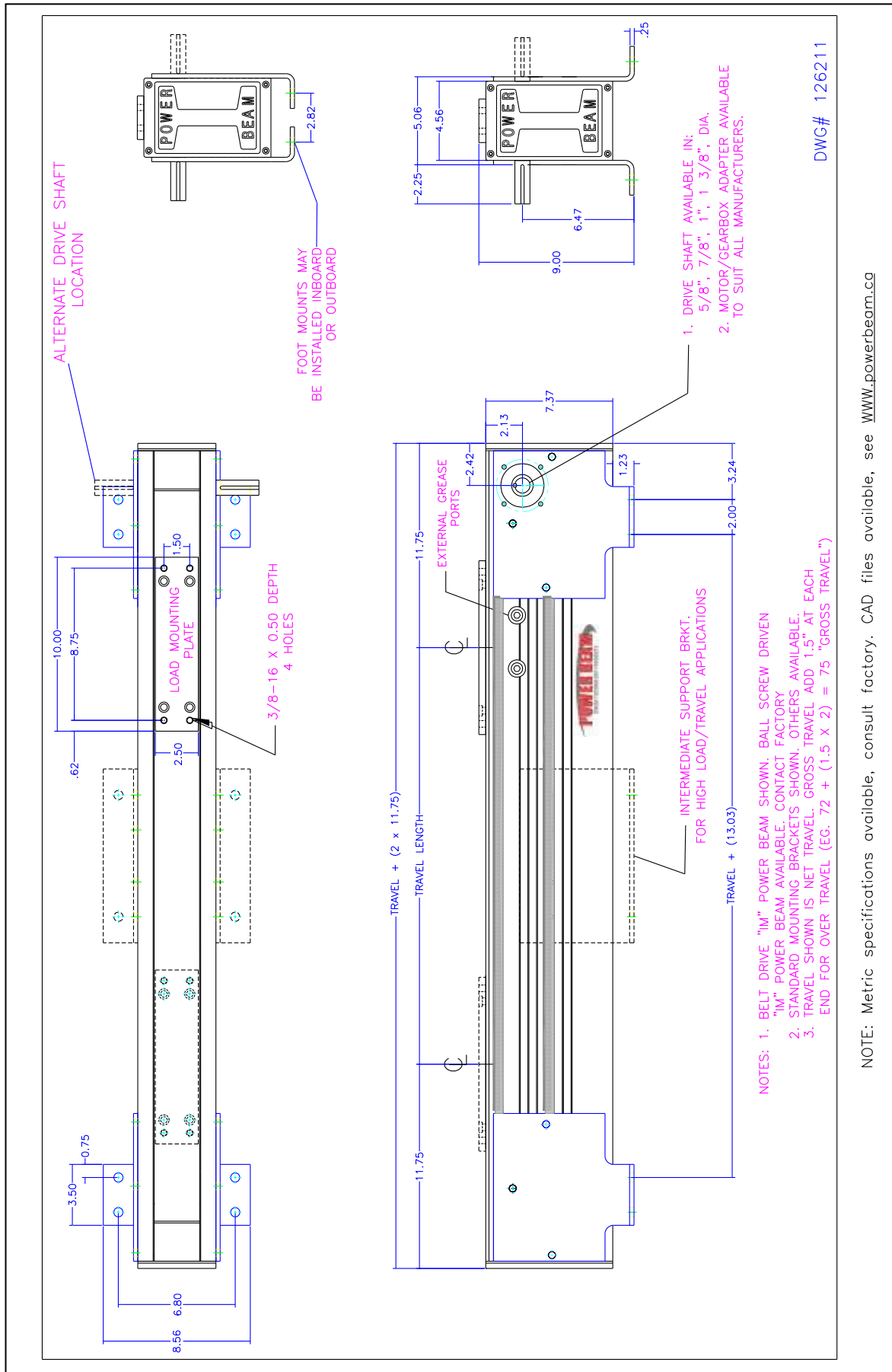


DIMENSIONS / “IA” SERIES:



NOTE: Metric specifications available, consult factory. CAD files available, see WWW.powerbeam.ca

DIMENSIONS / “IM” SERIES



"COMPACT POWER BEAM"

ALTERNATE DRIVE SHAFT LOCATION

LOAD MOUNTING PLATE

3/8-16 X 0.50 DEPTH 4 HOLES

OPTIONAL COMPACT CARRIAGE PROVIDES COMPACT LENGTH O/A LENGTH

EXTERNAL GREASE PORTS

INTERMEDIATE SUPPORT BRKT. FOR HIGH LOAD/TRAVEL APPLICATIONS

1. DRIVE SHAFT AVAILABLE IN: 5/8", 7/8", 1", 1 3/8", DIA.
2. MOTOR/GEARBOX ADAPTER AVAILABLE TO SUIT ALL MANUFACTURERS.

NOTES: 1. BELT DRIVE "IM" POWER BEAM SHOWN. BALL SCREW DRIVEN "IM" POWER BEAM AVAILABLE. CONTACT FACTORY
2. STANDARD MOUNTING BRACKETS SHOWN. OTHERS AVAILABLE.
3. TRAVEL SHOWN IS NET TRAVEL. GROSS TRAVEL ADD 1.5" AT EACH END FOR OVER TRAVEL (EG. 72 + (1.5 x 2) = 75 "GROSS TRAVEL")

DWG# 126211

NOTE: Metric specifications available, consult factory. CAD files available, see WWW.powerbeam.ca

REPAIR KITS / PARTS :

NOTES: When ordering parts, provide model number and serial number. Parts not shown on this list are available, contact Power Beam

- **REPAIR KITS:**

- **106847-L*** Cable kit for “IA250”: Includes: cables, piston, cartridges / seals, cushion springs / seals, cylinder seals, hardware and instructions NOTE: double seal option available for aggressive environments
- **106848-L*** Cable kit for “IA325”: Includes: cables, piston, cartridges / seals, cushion springs / seals, cylinder seals, hardware and instructions NOTE: double seal option available for aggressive environments
- **125059*** Carriage Bearing Kit: Designs A-B: Includes 12 pre-greased needle roller bearings, with hardware and instructions
- **125060*** Carriage Bearing Kit: Designs C-D: Includes 2 heavy duty linear guides with instructions (matching rail sold separately)
- **125473-L*** Polyester Dust Belt Kit: Includes replacement Belt, splice, nylatron belt scrapers, UHWM polyethylene edge seals and instructions (Polyester belt standard equipment 1994-present)
- **106844-L*** Stainless Steel Dust Belt Kit: Includes replacement belt, splice, stainless steel belt scrapers, UHWM polyethylene edge seal and instructions (stainless belt standard equipment 1988-1994, optional 1994-present)

*** L = Indicate stroke length in inches**

- **MOUNTING BRACKETS / DRIVE PLATES:**

- **106841** Universal Mounting Brackets: For top, bottom or end mounting (4 pcs) Zinc plated steel, includes hardware
- **106841S** As above, except stainless steel
- **106841C** Compact Mounting Bracket: Lowers beam 1.0”
- **106841CS** As above, except stainless steel
- **106868** Intermediate Mounting Bracket: Installed at one or more intervals to maintain length related load ratings and / or for stroke lengths of 240.0” (12 feet) or longer
- **106868S** As above except stainless steel
- **106868C** Compact Intermediate Mounting Bracket: Lowers Beam 1.0”
- **106868CS** As above except stainless steel
- **106698** 180° (inverted) Drive Plate: Zinc plated steel, allows top mounting of load with inverted mounting of beam or vice versa

NOTE: For complete parts list and support, contact Power Beam

TERMS/CONDITIONS OF SALE:

1. **SAFETY PRECAUTIONS:** It is the Purchaser's sole responsibility to ensure the product is installed in a manner, which safeguards personnel and machinery from injury or damage due to failure of product. Adequate guarding and safety controls must be utilized to ensure operator safety and protection according to current workplace regulations. Power Beam products must not, under any circumstances be used as an elevating, lifting, or hoisting device for personnel.
2. **ORDER OF ACCEPTANCE:** All orders or services are subject to acceptance and approval of Power Beam. Any such order shall be subject to these Terms and Conditions of Sale, and acceptance shall be conditioned on Purchaser's assent to such conditions. Purchaser's assent shall be deemed given unless Purchaser shall expressly notify Power Beam in writing to the contrary within five (5) days after receipt of acknowledgement to confirmation of order.
3. **CANCELLATION AND CHANGES:** Purchaser may modify no order accepted by Power Beam in any manner unless agreed to in writing, by Power Beam. Order cancellations, including reductions to order quantities, and changes shall be governed by the following:
 - (a) Any standard product order scheduled for shipment within five (5) working days of your request to cancel or modify will be shipped as previously acknowledged and you agree to accept shipment and payment responsibility, in full, at the price agreed upon.
 - (b) "Customer Special" orders scheduled for shipment within twenty (20) working days of your request to cancel or modify will be shipped as previously acknowledged and you agree to accept shipment and payment responsibility, in full, at the price agreed upon.
 - (c) All work in connection with "Customer Special" orders, not covered under Paragraph B, will be stopped immediately upon notification, and you agree to reimburse Power Beam for all work-in-progress and any materials or supplies used, or for which commitments have been made by us in connection therewith.
4. **QUOTATIONS AND PRICES:** Written quotations automatically expire 30 calendar days from the date issued unless terminated sooner by written notice. (Verbal quotations expire unless accepted in writing the same day.)

All published prices and discounts are subject to change without notice. In the event of a net price change, the price of product(s) on order will be the price in effect on the date of order acknowledgement. Any addition to an outstanding order will be accepted at prices in effect when the addition is made.
5. **MINIMUM BILLING:** Orders amounting to less than \$25.00 net will be billed at \$25.00.
6. **TAXES:** Any Manufacturer's Tax, Retailer's Occupation Tax, Use Tax, Sales Tax, Excise Tax, Duty, Customer, Inspection or Testing Fee, or any other tax, fee, or charge of any nature whatsoever, imposed by any government authority, on or measured by any transactions between Power Beam and Purchaser shall be paid by the Purchaser in addition to the prices quoted or involved. In the event Power Beam shall be required to pay any such tax, fee, or charge, Purchaser shall reimburse therefore.
7. **TERMS OF PAYMENT:** Net invoice amount is due within 30 days from date of invoice subject to credit approval. A 2% per month service charge shall apply to all invoices in excess of 45 days. All clerical errors are subject to correction. All invoices in excess of 60 days will subject that account to an immediate shipping hold.
8. **F.O.B. POINT:** All sales are F.O.B. Elora, Ontario, Canada unless quoted otherwise.
9. **DELIVERY:** Delivery of product(s) by Power Beam to a carrier shall constitute delivery to Purchaser, and regardless of freight payment, title and all risk or loss or damage in transit shall pass to Purchaser at that time.

Should shipment be held beyond scheduled date, upon request of Purchaser, product will be billed and Purchaser agrees to accept any charges for warehousing, trucking and other expenses as may be incident to such delay.

Power Beam takes great care in crating its product. Power Beam cannot be held responsible for breakage after having received "In Good Order" receipts from the transporting carrier. Purchaser must make all claims for loss and damage to the carrier within 14 days from receipt of goods. Power Beam will assist insofar as practical in securing satisfactory adjustment of such claims wherever possible.

Claims for shortages or other errors must be made in writing to Power Beam and any additional expense of the method or route of shipment specified by Purchaser shall be borne by the Purchaser.
9. **SHIPPING SCHEDULES:** All quoted shipping schedules are approximate and will depend upon prompt receipt from Purchaser of confirming copy of Purchase Order. Dimensional drawings and specifications submitted by Power beam to Purchaser for approval must be returned to Power Beam within 10 working days, with approval granted, and any exceptions noted, in order to avoid delay in manufacturing schedules.

Orders which include penalty clauses for failure to meet shipping schedules will not be acceptable, except in those cases specifically approved in writing by the Owner of Power Beam.

Power Beam shall not be liable for damage as a result of any delay due to any cause beyond Power Beam's reasonable control, including, without limitation, an Act of nature; act of Purchaser; embargo, or other government act. Regulation or request; fire; accident; strike; slow down; war; riot; flood; terrorist activity; delay in transportation; and inability to obtain necessary labor, materials or manufacturing facilities. In the event of any such delay, the date of delivery shall be extended for a period equal to the time loss by reason of the delay. The acceptance of the product when delivered shall constitute a waiver of all claims for damages caused by any such delays.
10. **RETURN OF PRODUCT:** No products may be returned without first obtaining a Return Goods Authorization from Power Beam. All transportation charges shall be prepaid by the Purchaser; however, assembled products classified as "special" / "custom" and other products, which have been modified or built as "Customer Specials," are not returnable to Power Beam.
11. **WARRANTY: POWER BEAM WARRANTY PRODUCT** MANUFACTURED BY IT TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SHIPMENT OR 8 MILLION LINEAR FEET (WHICHEVER OCCURS FIRST). IF WITHIN SUCH PERIOD ANY SUCH PRODUCT SHALL BE PROVED TO POWER BEAM'S SATISFACTION TO BE SO DEFECTIVE, SUCH PRODUCT SHALL EITHER BE REPAIRED OR REPLACED AT POWERBEAM'S OPTION.

THIS WARRANTY SHALL NOT APPLY:

(a) PRODUCTS NOT MANUFACTURED BY POWER BEAM. ARE SUBJECT TO WARRANTY AS STATED BY SUPPLYING MANUFACTURER
(b) TO PRODUCT WHICH SHALL HAVE BEEN REPAIRED OR ALTERED BY PARTIES OTHER THAN POWERBEAM SO AS, IN JUDGEMENT, TO AFFECT THE SAME ADVERSELY, OR
(c) TO PRODUCT WHICH SHALL HAVE BEEN SUBJECT TO NEGLIGENCE, A ACCIDENT, OR DAMAGE BY CIRCUMSTANCES BEYOND THE CONTROL OF POWER BEAM OR TO IMPROPER OPERATION MAINTENANCE OR STORAGE, OR TO OTHER THAN NORMAL USE AND SERVICE

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO IMPLIES WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, POWER BEAM SHALL NOT BE SUBJECT TO ANY OTHER OBLIGATIONS OR LIABILITIES WHATSOEVER WITH RESPECT TO PRODUCT MANUFACTURED OR SUPPLIED BY POWER BEAM OR SERVICE RENDERED BY IT.
12. **CONSEQUENTIAL DAMAGE:** Power Beam shall not, under any circumstances be liable for consequential damages.

CONTACT :

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