

# PROLYTE THEATRE PRODUCTS



Photo: Royal Opera House, London. © Rob Moore



**PROLYTE PRODUCTS**  
STAGING - RIGGING - TRUSSING

# PROLYTE THEATRE PRODUCTS

Photo: Muziek Theater Amsterdam, The Netherlands



## Het Muziektheater, Amsterdam

Total installation: 2640 m. ProTrac, 102 flybars.

The chosen ProTrac with an integrated HELM 100 profile greatly enhances the application possibilities, ranging from technical solutions to the reduction in labour time.

As Huub Huikeshoven, (head of Stage Department), stated:

“the choice of Prolyte was a deliberate one, we have to be able to rely on service and technical backup and we felt Prolyte could offer us that.”

## Royal Opera House, London

Total installation: 2900 m. ProTrac, 121 flybars.

Based on the standard ProTrac system, a custom made, high-grade aluminium extrusion was installed. Very narrow tolerances for torsion and straightness of the profiles were specified to be able to comply to the high demands the theatre required. The lateral stiffness of the ProTrac had to be very high, as the centre-to-centre distance of the tracks is only 150 mm, leaving no room for any lateral bending.

## Esplanade, Singapore

Total installation: 2220 m. ProTrac, 106 flybars.

When asked why esplanade selected the ProTrac system,

Mr Peter Bretherton, Esplanade’s technical Manager replied:

“There is no lateral bending and the high loading capacity offers many possibilities. The fact that we could still use our existing installation made it an easy choice.”

Photo: Royal Opera House, London, UK

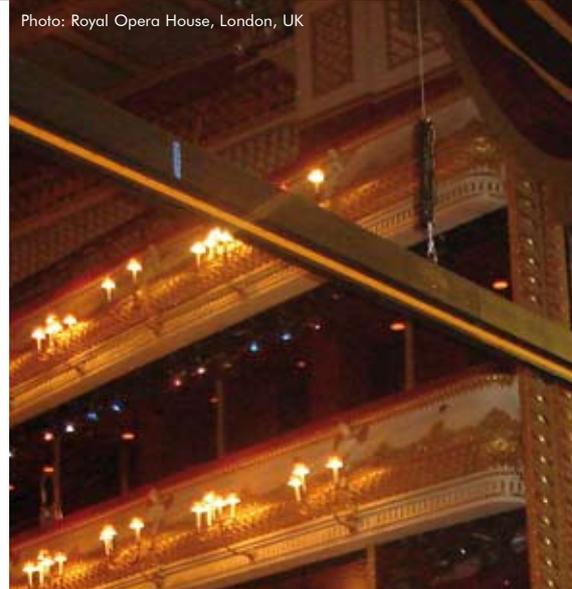


Photo: Esplanade, Singapore





Photo: Royal Opera House, London, UK

\*ProTrac is a patented system

## PROTRAC

Developments within the theatre branch have led to new demands on existing fly-bar systems. A combination of higher loading requirements, due to a growth in the size of productions, and the introduction of the mechanical operated fly-bar systems, have made the existing fly-bar system, in many cases, not suitable for the job. ProTrac is developed to fill this gap. ProTrac is an upgraded fly-bar system with several extra options and a high loading capacity. ProTrac is very flexible; several lengths can be easily combined and connected. The ProTrac system can be installed in all theatres or other venues, without any adjustments to the existing construction.

### System Description

ProTrac consists of a rectangular upper profile of extruded aluminium in combination with a lower round aluminium tube or profile.

Two types of lower profile can be connected to the upper profile:

- tube with slot profile 48,3 mm, with optional integrated rail fit for HELM 100 runner
- tube with slot profile 60 mm, with optional integrated rail fit for HELM 100 runner

The lower profile connects to the upper profile with stud bolts. The nut on this stud bolt slides into to slot of the tubes and can be fixed at any desired place. Suspension points for the complete ProTrac system slide into the slot of the upper profile and are easily fixed, due to a lock and load system.

ProTrac is a modular system. Variable lengths can be connected with an internal tube system, which is bolted into place.

The connection of the lower profile is placed under 45 degree to guarantee flawless runner travel. The ProTrac profiles are black anodised and are furnished with rubber end caps at the end.

The upper profile can be fitted with extra drilled holes of 50 mm (spaced 500 mm) to provide fittings for integrated electrical sockets.



ProTrac can replace the existing bars without the need to make adjustments to the construction or the complete fly-bar system. The steel wires of the existing system can simply be connected to the suspension points of the ProTrac. Calculation methods used for the ProTrac comply to DIN 56921.

### Advantages

- High Loading capacity: Max. Uniformly distributed load = 22,3 kg/m1.
- High Safety Factor: ProTrac has a Safety factor of 5 (on permanent deformation) and 10 (on failure).
- No lateral flex: The lateral bending is less than 2 cm over 24 m length if full load is applied, nearby flybars will not be blocked
- Reduced weight: ProTrac is 20 to 25% lighter than steel ladder beams a substantial load reduction for used winches.
- Modular and flexible: ProTrac can be used in all theatres or other venues, without any adjustments or changes to the structural components.
- Compact building height: ProTrac has a building height of only 306 mm
- Black stays black: ProTrac is anodised with a black, durable coating.

# SPECIFICATIONS PROTRAC



Fig 1. Connection of upper to lower profile by means of stud bolts which are fastened with a self locking nut.

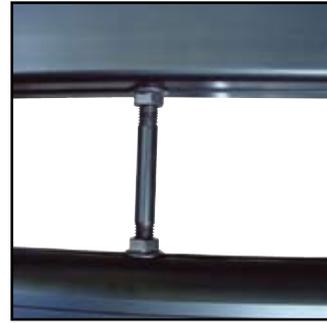


Fig 2. Slide in lock and load block in upper profile.



Fig 3. The 60mm lower profile with integrated rail profile fit for Helm 100 runners.



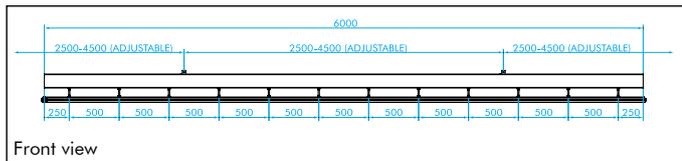
Fig 4. A completely assembled section of ProTrac.

## TECHNICAL SPECIFICATIONS PROTRAC

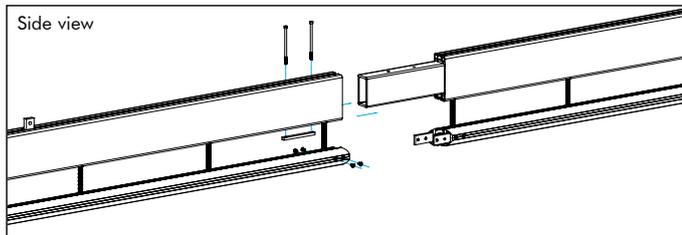
TYPES	UPPER PROFILE	LOWER PROFILE 60 mm + HELM 100	LOWER PROFILE 48,3 mm + HELM 100	LOWER PROFILE 48,3 mm
Alloy	EN AW 6082 T6 F28	EN AW 6005 F26	EN AW 6005 F26	EN AW 6082 T6 F31
Profiles	60 diam.	60 diam.	48,3 diam.	48,3 diam.
Coupling system	bolts	bolts	bolts	bolts
Self weight	6,088 kg/m	2,534 kg/m	1,921 kg/m	1,944 kg/m
Ix in mm <sup>4</sup>	6581770	222400	116630	133896
Wx in mm <sup>3</sup>	90437	7963	4160	5760
Iy in mm <sup>4</sup>	1074310	289000	160570	145635
Wy in mm <sup>3</sup>	36575	9999	6648	6350

## MAXIMUM DYNAMIC LOADS

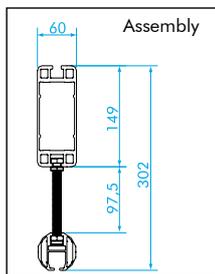
SPAN		DISTRUBUTED LOAD		MAXIMUM ALLOWABLE POINT LOADS							
				↓		↓ ↓		↓ ↓ ↓		↓ ↓ ↓ ↓	
m	ft	kg/m	lbs/ft	kg	lbs	kg	lbs	kg	lbs	kg	lbs
2,5	8,2	462,3	311,1	577,9	1275,4	433,4	956,6	288,9	637,7	239,8	529,3
2,7	8,9	396,1	266,5	534,7	1180,0	401,0	885,0	267,3	590,0	221,9	489,7
2,9	9,5	343,0	230,8	497,4	1097,7	373,0	823,3	248,7	548,9	206,4	455,6
3,1	10,2	299,9	201,8	464,9	1026,0	348,7	769,5	232,4	513,0	192,9	425,8
3,3	10,8	264,4	177,9	436,3	962,9	327,2	722,2	218,1	481,4	181,1	399,6
3,5	11,5	234,8	158,0	410,9	907,0	308,2	680,2	205,5	453,5	170,5	376,4
3,7	12,1	209,9	141,2	388,3	857,0	291,2	642,8	194,2	428,5	161,2	355,7
3,9	12,8	188,7	127,0	368,0	812,1	276,0	609,1	184,0	406,1	152,7	337,0
4,1	13,4	170,5	114,8	349,6	771,6	262,2	578,7	174,8	385,8	145,1	320,2
4,3	14,1	154,9	104,2	332,9	734,8	249,7	551,1	166,5	367,4	138,2	304,9
4,5	14,8	141,2	95,0	317,7	701,2	238,3	525,9	158,9	350,6	131,9	291,0



Front view



Side view



Assembly



- The given allowable loading is for the complete ProTrac system, and is equal for 48,3 mm or 60 mm lower tube.
- The allowable loading is given for the ProTrac only. In a complete system winch capacity and total length also have to be taken in account.
- The total weight of 2 point loads in 2 adjacent fields should not exceed the maximum allowable capacity of the suspension cable points.

**Example:**

Winch / Hoist capacity 750 kg.

Length of ProTrac = 24 m.

Self weight ProTrac = 216 kg.

Free loading capacity = 750 kg - 216 kg = 534 kg.

Point loads: 2 x point loads of 267 kg.

Max. Uniformly distributed load =  $534/24 = 22,3 \text{ kg/m}^1$ .

## CATWALK TRUSS



Photo : Jan Hoefnagel, Flashlight Rental BV, The Netherlands

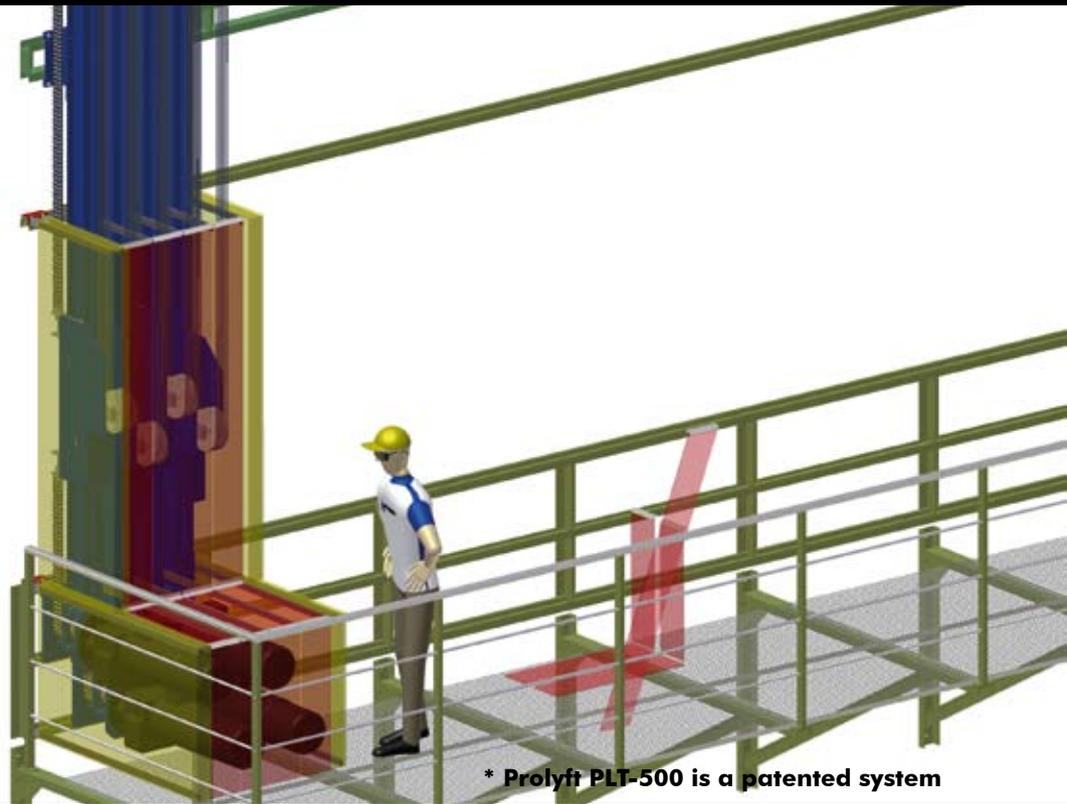
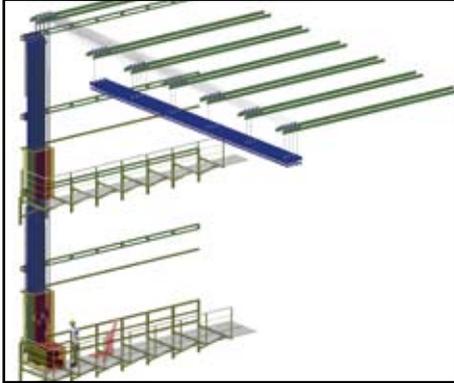
### CATWALK TRUSS

The Prollyft catwalk truss (B100RV-CW) is designed based on the B100V truss. It can be used to create mother grids or working platforms as well as proscenium or lighting bridges in a theatrical environment. The B100RV-CW truss is fitted with an extra handrail on top and a reinforced plate on the bottom side to create a walking platform.

The catwalk truss can be flown by assembling bracing bars with fixed lifting eyes to the bottom braces of the truss.

The catwalk truss is designed and manufactured in compliance with: DIN 1055, DIN 18800, DIN 4112, DIN 4112/A1, DIN 4113-1, DIN 4113-1/A1, DIN 4113-2.

# PROLYFT PERFORMANCE DRIVE PLT-500



## Automated flying systems within reach

Prolyte introduces the Prolyft PLT-500, a linear flying system, based on innovative technology.

Motorised or automated flying systems are now attainable for all types of theatres without an extreme budget impact. The Prolyft PLT-500 can be installed without the need to rebuild your complete theatre.

## Advantages of a motorised system

The investment of a motorised flying system could easily be countered by the many advantages of the PLT-500. Apart from the cut back on personnel costs, as personnel requirement would dramatically diminish, the Prolyft PLT-500 would also save production time, as the counterweight arbor doesn't have to be reloaded for each show. A higher loading capacity is possible, combined with an improved accuracy and repeatability of the movements; enabling a more complex show design.

You can move multiple fly-bars at the same time and at different speeds with easy operation.

## Modular System

The Prolyft PLT-500 is a double purchase linear drive system with minimum space requirements.

The system uses the existing installation on the grid, providing this can accommodate the upgraded capacity of the flying system and complies with current health and safety regulations. You will be able cut back substantially on building or renovation costs.

## From Basic to High End solutions

The PLT-500 is deliverable in several types, from an reliable basic AC drive, with or without variable speed options, to a full fledged servo drive which offers maximum accuracy and control options. All options offer the highest security and repeatability in their speed and positioning, due to the very precise movements and feedback options.

- Fixed speed (6m/min) AC drive
- Variable speed (0-2 m/sec) AC drive
- Variable speed (0-2 m/sec) Servo drive

## Excellent System Features

- Strong linear transfer, loading capacity up to 500kg.
- Smooth and quiet operation.
- Speeds up to 2m/s.
- Safe, complies with SIL 3 and BGV-C1 regulations. TÜV tested, approval pending.

## Installation Benefits

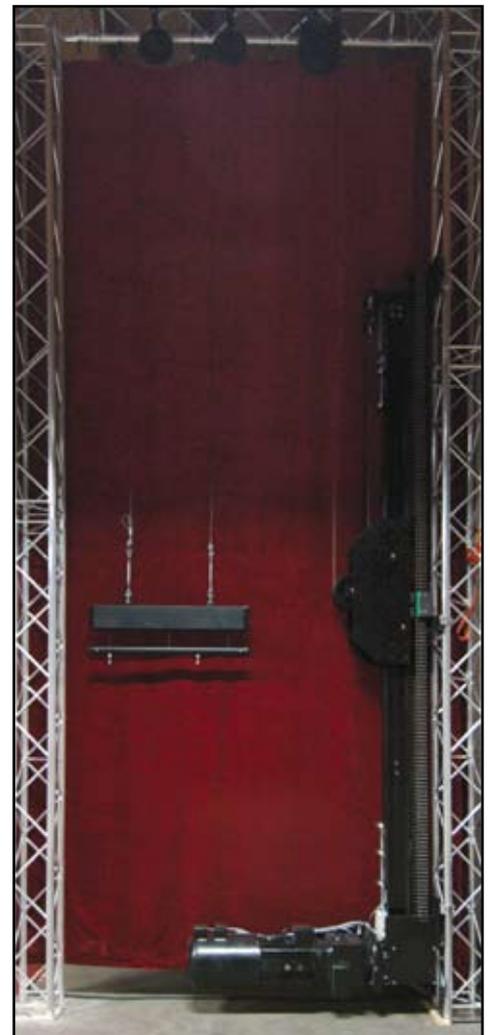
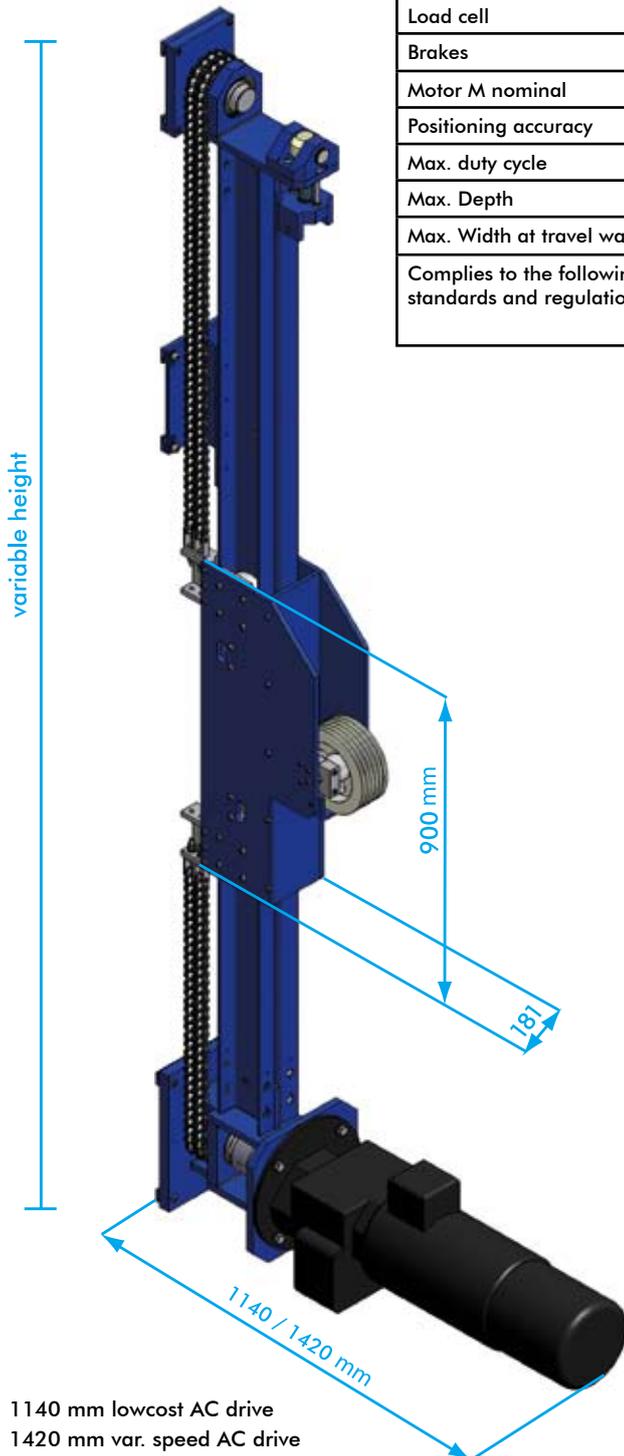
- Flexible, modular plug and play system, scalable to your theatre
- Space saving, building space limited to 200mm width per fly bar, no huge winch drums to accommodate
- Integral low cost price, building size and building or renovation costs reduction
- Cuts back on personnel costs

## Reliable Control

- Compatible with existing control systems
- Integrated load monitoring system.
- Very precise and reliable positioning.

# PROLYFT PERFORMANCE DRIVE PLT-500

Technical Specifications PLT-500				
Drive type	Units	Basic	Mid-end	High-end
Drive chain		16B-2 (1"x17.2duplex)	16B-2 (1"x17.2duplex)	16B-2 (1"x17.2duplex)
Working load limit	kg	700	700	700
Motor power	kW	1,5	15	15
Controller		n.a.	Freq. Converter	Servo controller
Max. Fly-bar velocity	m/sec	0.2	2	2
Max. Fly-bar acceleration	m/sec <sup>2</sup>	0.2	2	2
Max. Fly-bar deceleration on E-stop	m/sec <sup>2</sup>	Direct stop by brakes	3.3	3.3
Load cell		LMS 500/100	LMS 500/1000	LMS 500/1000
Brakes		2x23 Nm	2x105Nm	2x105Nm
Motor M nominal	Nm	15	70	70
Positioning accuracy	mm	n.a.	± 1	± 1
Max. duty cycle	%	40/60	40/60	40/60
Max. Depth	mm	1100	1340	
Max. Width at travel wagon	mm	200	200	200
Complies to the following standards and regulations		NEN-EN-61508 (SIL-3), BVG-C1, MR 98/37/EG, NPR-8020-10, DIN 56950 TÜV approved		



PLT-500 in test set-up

## OTHER PROLYTE PRODUCTS



website: [www.stagedex.com](http://www.stagedex.com)



Photo: Silk, The Netherlands



website: [www.prolyft.com](http://www.prolyft.com)



Photo: Fresnel, Spain



Photo: Silk, The Netherlands



## PROLYTE PRODUCTS

STAGING - RIGGING - TRUSSING

website: [www.prolyte.com](http://www.prolyte.com)



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