



# Cobra VT 22-62 Camera Dolly

User Manual

Operational Instructions & Specifications

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Operational Instructions & Specifications

Edition 2

**CHAPMAN**

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## **Cobra VT 22-62 Camera Dolly User Manual**

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The Operator should be qualified to operate  
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## Contents

Safety Features	6
Cobra VT 22-62 Features	7
Specifications	8
Cobra Standard Package	10
Basic Parts Reference	11
4-Way Leveling Swing Head with Clutch	12
Standard Head Positions	14
Nitrogen Balance System / Weight Tray Quick Balancing	16
Weight Tray Quick Balancing	18
Telescoping Column Latch and Safety / Aligning the Dolly	19
Adjustable Tracking Bar and Steering Column Positions	21
Steering Column Height Adjustment	24
Removing the Tracking Bar and Steering Column	25
Installing the Tracking Bar and Steering Column	26
Steering Column and Shifting	27
Cobra with Jib Arms	28
Board Cobra Extension	29
90° Hi/Lo Plate Configuration with Camera at the Ground	30
17" Compact Configuration	31
Cobra on CL Track: 16" Adjustable Track & Curve Track	33
Carrying the Dolly	35
Noise Reduction and Dolly Care	36
Shipping and Handling	37

## Safety Features

### Cobra VT 22-62

*If any part of this manual is faxed or transmitted to a client, this page of warnings **MUST** be attached.*

The Cobra Camera Dolly is the most compact of all Chapman/Leonard's Dollies. The Cobra has a small footprint of only 20" x 22" square and weighs only 235.5 lb.

Added consideration must be given to maintain safe operating conditions. For maximum

**SAFETY**, place counter weights on extension boards to balance variable payloads.

Static balancing is easily obtained as shown.

Dynamic balancing and balancing in movement must also be considered.

Chapman/Leonard Studio Equipment Inc. emphasizes safety first in the development and use of all our equipment.

## WARNING!

It is **NOT** Permitted and is Unlawful to Operate this Equipment within 10 feet of High-Voltage Line of 50,000 Volts or Less.

For Minimum Clearances of High-Voltage Line in excess of 50,000 Volts, see California Code of Regulations, Title 8, Article 37, High-Voltage Electrical Safety Orders.

Source Title 8, California Code of Regulations, Subchapter 5, Group 2, Article 37, §2946, 29 Code of Federal Regulations 1926.451 (F)(6)

Nominal Voltage	Minimum Required (Feet)	Clearance (Meters)
600 up to 50,000	10	3
Over 50,000 to 75,000	11	3.4
Over 75,000 to 125,000	13	4
Over 125,000 to 175,000	15	4.6
Over 175,000 to 250,000	17	4.6
Over 250,000 to 370,000	21	6.4
Over 370,000 to 550,000	27	8.2
Over 550,000 to 1,000,000	42	12.8

## Features

### Equipment Overview

22" minimum height - ground to Mitchell Mount

61" maximum height - ground to Mitchell Mount

\* Add approximately 14 in. from mount to camera lens center.

### Leveling Swing Head with Clutch

The Cobra's Leveling Swing Head has 48 different positions. It can be locked in place or unlocked (see page 14), allowing the head to swing freely making it possible to shoot a smooth 360° pan shot.

### Steering & Tracking Adjustable Modes

The Cobra has two steering modes:

1. Crab
2. Conventional

Both the Steering Column & Tracking Bar are completely removable in just 15 seconds.

### Charging System

One time charging for a given camera load provides infinite lifts. No recharging needed.

### C/L Adjustable Track

The C/L Adjustable Track is designed for the Cobra Dolly, but can also be used on PeeWee Series dollies. The C/L Adjustable Track is 16 in. wide from the center of each rail. The CL adjustable track expands and locks to 21.8 in. as well as standard 24.5 in., accommodating other standard dollies.

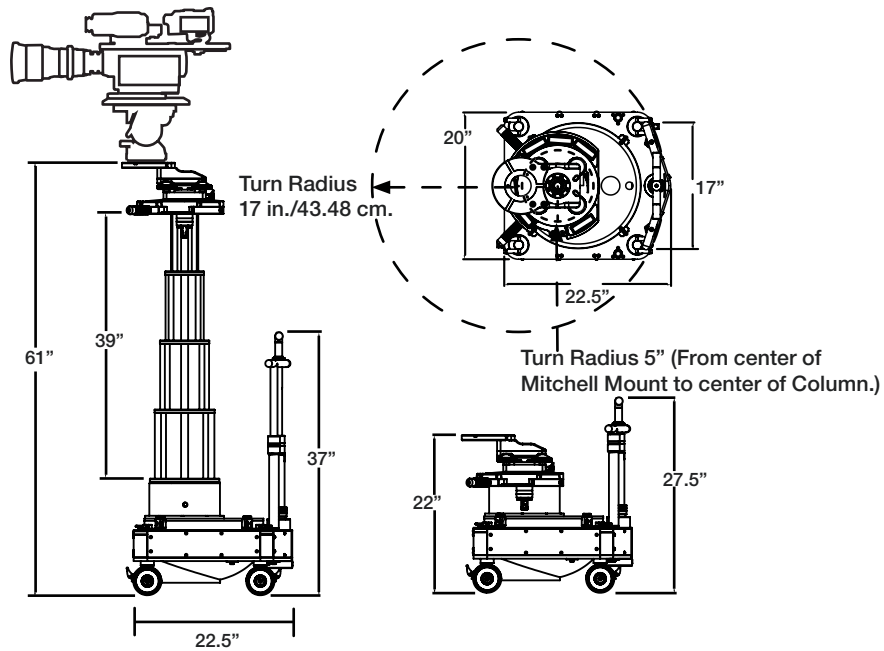
## Cobra VT 22-62

### Specifications

Maximum Payload	375 lb	170 kg
Minimum Camera Mount Height	22 in.	55.88 cm
Maximum Camera Mount Height	61 in.	154.94 cm
Vertical Travel	39 in.	99.06 cm
Column Friction Brake (when engaged)	Up to 50 lb	12.25 kg
Steering Column and Tracking Bar		
Min Height	28 in.	71.12 cm
Max Height	37.5 in.	95.25 cm
Charging System	Nitrogen Balanced System (Unlimited Lifts)	
Chassis Dimension	20 x 22.5 in.	50.8 x 57.15 cm
Minimum Turn Radius	20.5 in.	52.07 cm
Column Diameter (when removed)	17 in.	43.18 cm
Carrying Weight of Chassis	62 lb	28.12 kg
Carrying Weight of Column with Head	173.5 lb	78.70 kg
Total Carrying Weight (Chassis & Column Complete)	235.5 lb	106.82 kg
Track		
C/L Adjustable Straight Track	16 in. width configuration	40.64 cm width configuration
C/L Curve Track	16. width	40.64 width



## Diagram



## Cobra Standard Package

## Item List

Item Number	Item Description	Quantity
32200	Cobra VT 22-62	1
32294	4-Way Leveling Swing Head	1
32256	Cobra, Column Plate	1
32400	Steering Column (Adjustable)	1
32254	Tracking Bar, Cobra	1
32333	Lifting Handle Assembly, COB (60°)	2
32205	Column Handle, 5", Cobra	2
32265	Cobra Medium Tires (Set of 8)	8
32394	Cobra Front/Rear Extension Board	1
32391	Sand Bag Plate, Cobra	1
3002	Trim Weight, 2.2 lb, Lencin	6
3045	Trim Weight, 1.1 lb, Lencin	1
32399	Cobra Utility Pouch	1
32396	Battery Tray	1
20042	Wrench, Tab Lock Lever	1
	<b>Nitrogen Kit</b>	<b>1</b>
2034	1 1/8" Open Wrench	1
2072	Nitrogen Bottle	1
2070	High Pressure Regulator	1
3050	High Pressure Regulator Hose	1
3006	7/32" Lencin Ball - End Hex Driver	1
2005	Spray Can, Pedolly Silicon	1
2004	Screw, Pedolly Turret	8
32420	10" Front Lifting Handles	2
3025	Cobra Column	1
32422	Alignment Bar	1

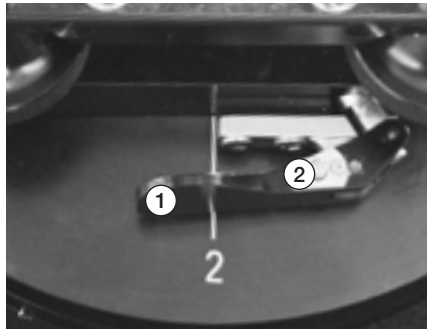
## Basic Parts Reference



## 4-Way Leveling Swing Head with Clutch

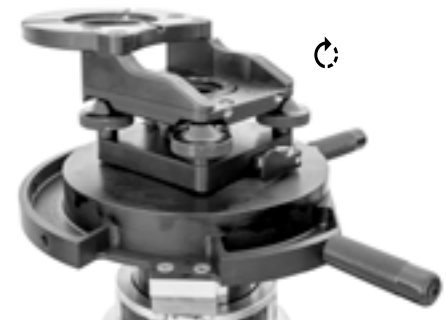
### Controls

- 1 The 4-Way Leveling Swing Head has 48 different locking positions.
- 2 When disengaging the clutch, the Swing Head is released for free rotation.
- 3 To maintain continuous free rotation, engage the locking pin as shown.
- 4 When releasing the clutch, the indexing clutch lock will snap into place at one of the 48 positions.



**Indexing Clutch Detail**

- 1 Clutch
- 2 Locking Pin



**360° Leveling Swing Head Rotation**

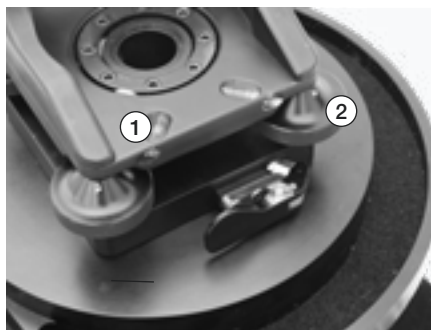
Turn Radius 5" (from center of Mitchell Mount to center of Column.)

- 1 Indexing Clutch

### Leveling the 4-Way Leveling Swing Head

Observe the Bubble Level Indicator positions. If the bubble is not centered in each tube an adjustment should be made. Lower the leveling knob (clockwise) that is diagonally opposite a low bubble.

Raise the leveling knob (counter clockwise) that is diagonally opposite a high bubble. Adjust all four leveling knobs until both bubble level indicators are centered.



1 Leveling Bubble

2 Leveling Knob

## Standard Head Positions

### Controls



Position 1



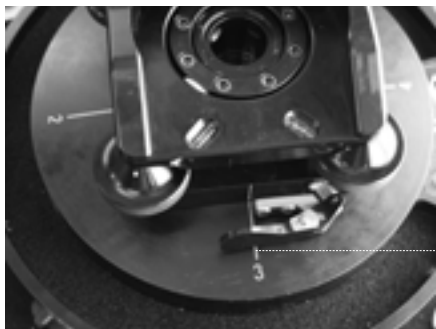
Position 2



Position 3



Position 4



**Note:** The engraved line on the 4-Way Leveling Swing Head. This should be lined up with the marker on the top plate to orient the head to the correct position.

### Mounting Jib Arm

The 4-Way Leveling Swing Head has 48 locking positions. There are four (4) specially marked positions for easy recognition.

Position three (3) of the 4-Way Leveling Swing Head puts the weight distribution closer to the center of the Dolly. This setting must be used when attaching the **recommended** Jib Arm to the Cobra.

## Nitrogen Balance System

### Controls

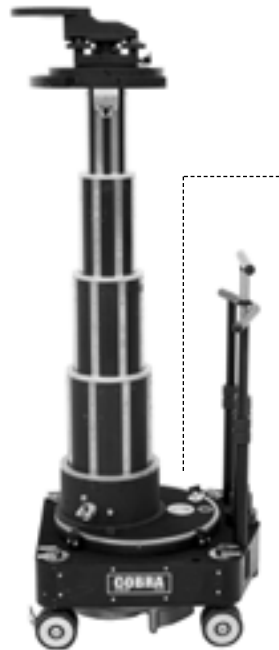
The Nitrogen Balance System is designed to balance the payload, providing a simple way of raising and lowering the telescoping column. Once the payload is balanced by the Nitrogen Balance System, the column and payload can be easily raised, lowered and stopped manually.

**Note:** The telescoping column is balanced at **70 psi**. Anything added to the Cobra should be added to this figure.

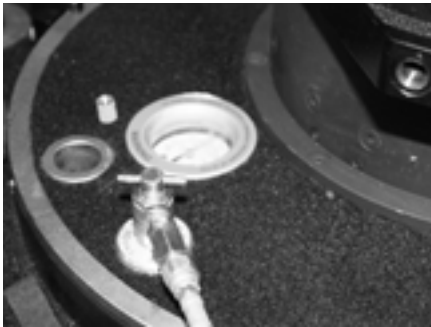
Ex. 200 lb payload = 270psi.

#### Warning!

To prevent damage to the Cobra VT 22-62 maintain a minimum pressure of 70 PSI. The column of the Cobra must not be in use and should remain locked if it contains pressure less than 70 PSI.







### Charging the Tank

To refill, use the nitrogen tank provided. Secure the hose to the intake valve next to the pressure gauge at the rear of the column. Fill until payload is balanced. The backup tank is effective for two (2) full charges.

## Weight Tray Quick Balancing Configuration

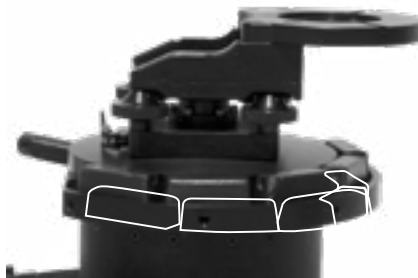
Proper planning is required for varying payloads, as well as changes in temperature. The weight tray provides a quick and easy way to balance any variation to the camera weight. The weights may be used to fine tune the balance of the camera without having to add or remove nitrogen.

### Attention!

**Add or remove weights according to payload adjustments and weather.**

- ⚙ Hot weather can cause the gas to expand, requiring additional weight.
- ❄ Cold weather will shrink the gas, requiring removal of weight.

Changing lenses may require adjustments in the weight tray.



There are six 2.2 lb weights and one 1.1 lb weight that fit into the weight tray. The total excess weight is approximately 14.3 lb.

## Telescoping Column Latch & Safety Configuration

*If the Dolly is not tracking correctly, taken off track or unloaded from transportation, the wheel alignment will have to be adjusted to achieve proper performance.*



First, the Steering Handle needs to be straight (the operator should be able to shift the steering modes). Then, lock the position of the steering column by shifting the dolly in between steering modes (the Steering Column will not be able to rotate if done correctly).

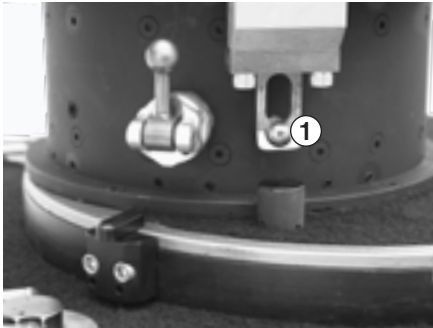
**Note: Handle must be straight as indicated.**

Unlock the wheel tab locks & align the wheels with a straight bar parallel to the chassis as pictured above.



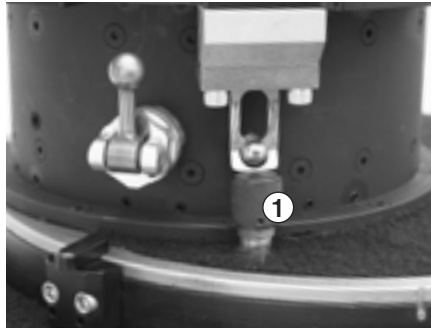
Re-engage the wheel tab locks.

Repeat operation on other side of the Dolly. Now the Dolly is properly aligned.



The safety pin and latch should be used for carrying, transportation and storage.

#### 1 Safety Pin and Latch



The double safety lock ensures the function of the safety pin and latch.

#### 1 Double Safety Lock

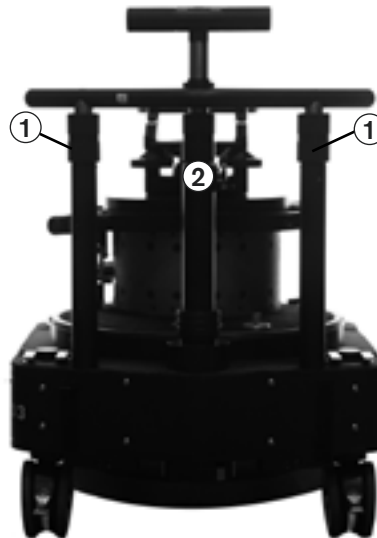
## Adjustable Tracking Bar & Steering Column Positions Configuration

*The tracking bar and steering column can be independently adjusted to high and low positions manually, using the lock-down collars.*

- 1 Tracking Bar Lock-Down Collars
- 2 Steering Column Lock-Down Collars

### Adjusting the Height

- 1 Loosen the collars.
- 2 Slide to high or low position.
- 3 Tighten the collars.





Steering Column and Tracking Bar in low positions.



Steering Column and Tracking Bar in high position.



Steering Column in low position without Tracking Bar.



Steering Column in high position and Tracking Bar in low position.



Dolly without Steering Column or Tracking Bar.

## Steering Column Height Adjustment

### Instructions



#### Adjusting the Handle from High to Low Position

- 1 Loosen Top Collar
- 2 Press button all the way in
- 3 Lift handle 1/4" until it clicks
- 4 Release Button
- 5 Lift Steering Column Handle to High Steering Position



#### Adjusting the Handle from Low to High Position

- 1 Loosen Top Collar
- 2 Press button all the way in
- 3 Lift handle 1/4" until it clicks
- 4 Release Button
- 5 Lift Steering Column Handle to High Steering Position



- 1 Column Lock-down Collar



## Removing the Tracking Bar & Steering Column

### Assembly

*Three (3) latches underneath the rear of the chassis allow for quick securing/releasing of the tracking bar and steering column.*



### Steering Column Lock

- 1 The center latch secures/releases the steering column.



### Tracking Bar Locks

The left & right latches secure/release the tracking bar.



## Installing the Steering Column

### Assembly

**Note:** When installing the steering column make sure the keyway is aligned with the slot in the receiver tube.

**Note:** When installing the steering column, make sure the column pin (sticking out of the bottom of the column) is fully extended so that it can be easily locked in by the center latch.



1 Keyway Slot



2 Keyway



3 Keyway Aligned

## Steering Column & Shifting Configuration



### Standard Steering Mode

The standard steering column is capable of two (2) different steering modes. In Conventional Mode, the rear wheels pivot as the operator makes a tracking turn. In Crab Mode, all wheels turn in unison enabling the Dolly to be moved in any direction while maintaining the orientation of the camera plane. The operator can select any mode by rotating the steering column.

Rotate the handle gently to shift into Crab or Conventional modes.

### 1 Perforated Securing Disc

The tracking bar & steering column are secured together using a perforated securing disc.

### 2 Prongs

To secure the tracking bar to the steering column, push the disc down and fit the three (3) prongs into the perforated securing disc.

To disengage, pull up. For convenience, the securing disc will magnetically attach to the top of the steering column.

## Cobra with Jib Arms

### Configuration

**Warning:** Heavy payloads loads must be used in the number three (3) head position. This keeps the weight distribution over the center of the Dolly. (See page 16).

The Stinger Jib Arm is the ideal arm for the Cobra Dolly. The Stinger Jib Arm combined with the 90° Hi/Lo Plate and 4-Way Leveling Swing Head weighs approximately 135 lb. With the camera and counter weight the payload will be well over 200 lb. Charging the nitrogen system is required.

**Note:** The camera can be under-slung or over-slung without being removed using quick release pins on the 90° Hi/Lo plate as well as the tightening knobs on the Mitchell Head.



The Mitchell Head may be under-slung or over-slung.



Over-slung or Under-slung 90° Hi/Lo Plate.

## Board Cobra Extension Configuration

*The extension board is designed to offset eccentric camera loads such as the three (3) ft. or four (4) ft. Chapman Slider. The extension board is designed to carry counter weights.*



Cobra Front/Rear Extension Board



Cobra Left/Right Extension Board



When using the CL Slider we recommend having the 4-Way Leveling Swing Head in the number three (3) position and counterweight (see page 16).

## 90° Hi/Lo Plate with Camera at the Ground Configuration



Here the camera has been mounted on the 90° Hi/Lo plate on the Cobra Dolly. This will bring the camera to ground level or lower when using the 7 in. extension.

The Cobra extension board with counter weights is recommended for stability when using the 90° Hi/Lo Plate as pictured. Center the balance with counter weights on the extension board opposite the 90° Hi/Lo Plate and camera.



90° Hi/Lo Plate with extension may be used on track to bring the camera to ground level or lower.



Adjust the column and engage the friction lock to set the camera at the desired height.

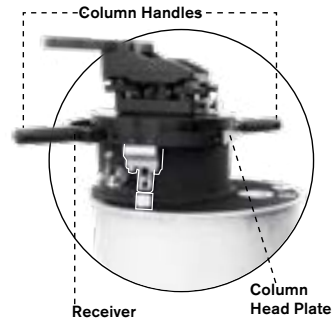
## 17" Compact Configuration

### Configuration

*Detach the center column from the chassis to use the Cobra 17 in. compact configuration.*



Make sure quick release latches are open.



Screw the straight lift handles into two (2) of the six (6) available receiving holes located on opposite sides of the head plate.

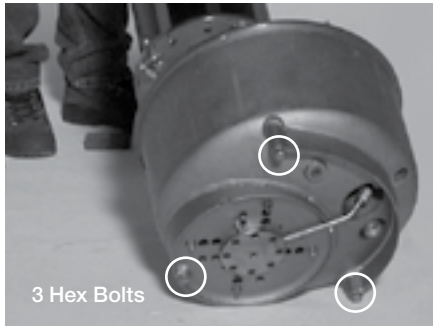
Safety pin and latch pictured in secure position with double safety lock engaged.



After the column has been locked, carefully lift the column out of the chassis and place on a flat surface.

**80 lb per person**

Tab with Hex Bolt



- 1 Using 5/8 in. wrench, attach tab to hex bolt.
- 2 Attach tab to floor using provided hex screw.



### Securing the Stand Alone Column with Tab Locks

The stand alone column feature is used in tight, compact areas such as stairs, stadium seating, etc.

Securing tabs makes it possible to attach the column to a flat surface.

Using a hex bolt, attach tabs underneath the column. Use a screw to secure the tab to a flat surface.



Stand alone column base width: 17 in.



## Cobra on CL Track

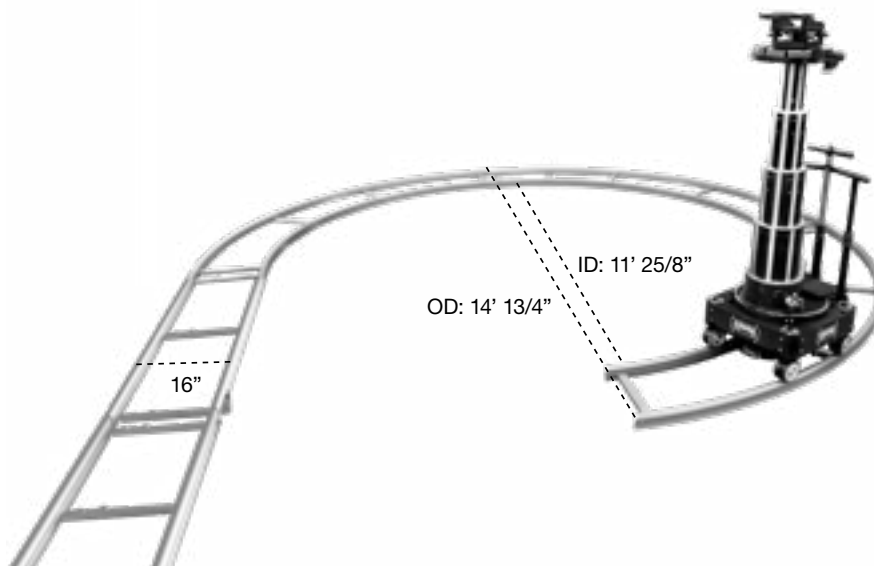
### 16" Adjustable Track & Curve Track

*The C/L Adjustable Track at the 16 in. configuration, and C/L 16 in. Curve Track was designed for the Cobra Dolly.*

The C/L Curve track has been designed for the 16 in. width setting on the CL Adjustable Track. The PeeWee Series Dollies and the Cobra Dolly will work on the curve track.

*Track Width	16 in.
Straight Outside Diameter	17.5 in.
Straight Inside Diameter	14.5 in.
Curve	90
Curve Outside Diameter	14' 1 <sup>3</sup> / <sub>4</sub> "
Curve Inside Diameter	11' 2 <sup>5</sup> / <sub>8</sub> "

\*(Track width is taken from the center of each rail).



C/L Adjustable track and C/L curve track.

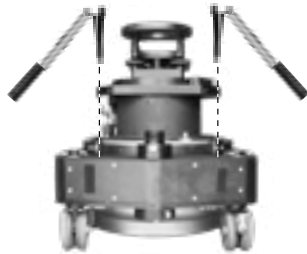
### Wheel Tab Locks



While using the Cobra on CL 16 in. Curve Track, unlock all eight (8) wheel tab locks to reduce tracking friction.

To eliminate squeak noise on wheels, we recommend applying Zep-Par Silicone Mold Release Spray.

## Carrying the Dolly Configuration



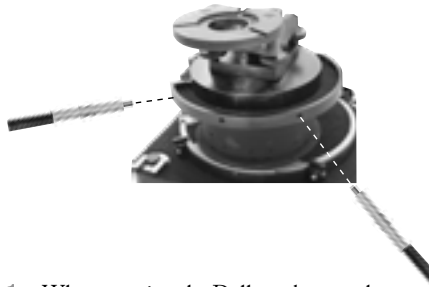
### Column Lifting Handles

The column lifting handle should be screwed into the middle receiving hole located in the front of the column top plate.

### 60° Lifting Handles

The 60° lifting handles should be used for loading and unloading the Dolly for transportation. The 60° lifting handles enable equal carrying load.

The handles are secured in the same receivers as the tracking bar. The locking system for the handles are the same as the tracking bar. (refer to pages 25-26).



- 1 When carrying the Dolly make sure the column is fully compressed.
- Make sure the safety pin and latch are in a secure position with double safety lock engaged (21-22).
- 2 Point the 4-way Leveling Swing Head in position three (3) (See page 16).
- 3 Position a person at the front and rear of the Dolly. Properly lift and carry the Dolly.



**Carry weight of Cobra: 235.5 lb**  
(including weight of Leveling Head, Cobra Dolly and Lifting bars)

## Noise Reduction and Dolly Care

### Maintenance

#### Warning!

Harmful vapor can cause eye, skin and respiratory irritation.

**Always read Warning Labels.**

Always begin cleaning the Dolly with a vacuum cleaner. Never use an air hose because dirt and metal shavings will find their way into joints and bearings. This can seriously shorten the life of the Dolly.

Never directly spray the Dolly with water.

Use soap and water applied to a cloth or paper towel, or preferably a brush to wipe down the rubber and metal parts of the Dolly.

Wax the exterior of the Dolly using **Megular's Mirror Glaze Cleaner Wax**. This keeps the Dolly cleaner during regular use and preserved the finish. A clean Dolly will ensure optimum performance with smooth and quiet movements while enhancing its aesthetics.

Spray the tires with **Zep Par NC Silicone Spray** (Key Words on Label are "Mold Release Agent"). This dramatically improves tire performance on tile floors, hardwood, track and even on concrete. Use the same spray to clean the tires.

**Note:** There is a sponge in the cap of the Zep-Par Silicone spray. When applied to wheels and track, the Zep-Par can be sprayed into the sponge and applied by hand to eliminate emissions and odors.



For Metal



For Rubber and Plastic

## Shipping & Rental Return

**Notice:** When shipping by air, all gas must be released from the Cobra's pressure tank. When emptying gas from the pressure tank the telescoping column must be locked and must remain locked. Any elevation of the column without at least 85 PSI of gas will damage the column.

The Cobra VT 22-62 must be properly crated before shipment. Make sure to attain a signed receipt from your chosen transport company to confirm shipment.

Rental bays are located on the left, immediately after entering the **Chapman / Leonard** facility. Trucks should be backed into the bays for easier loading. If no bays are available, please park on Raymer Street and advise the Rental Office of your arrival.

A customer service agent will notify you once a space becomes available.

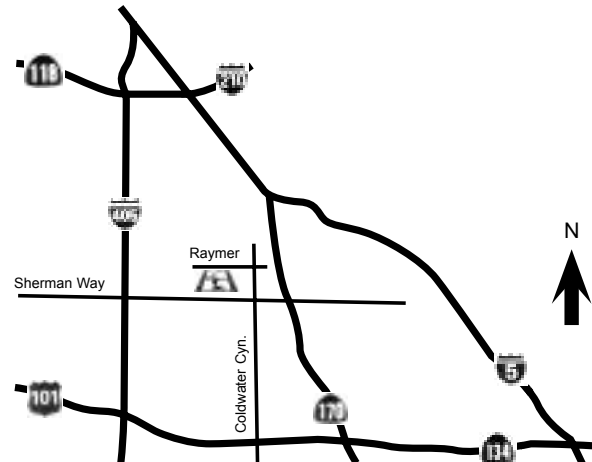
All drivers must report to the rental office to process paperwork before loading/unloading may begin. Our Rental Staff is well trained to process equipment and documents efficiently.

### Rental Office Hours

Monday - Friday	7am - 6pm
Saturdays	8am - 12 pm

### Address

Chapman/Leonard Studio Equipment, Inc.  
12950 Raymer Street  
North Hollywood, CA 91605





**CHAPMAN/LEONARD**  
— STUDIO EQUIPMENT INC. —