

T-02



# AIR BALANCERS- BALANCING HOISTS

**MORE  
THAN A HOIST**  
See Back Cover  
for NEW Slim-Line  
Sensi-Touch®

Bal-Trol® Products are covered by  
Patent No. 5,984,276 and other  
applications pending

**ISO 9001:2000 CERTIFICATION  
No. 5047 1494/B**

**TMI TRI-MOTION  
INDUSTRIES, INC.**  
LEADERS IN AIR BALANCING HOISTS™

**BAL-TROL®**

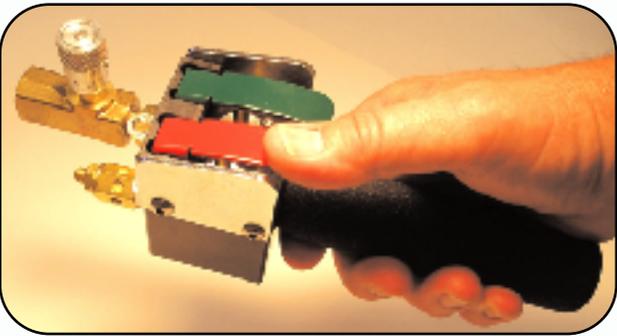
**Speed HANDLE CONTROLS**

- Used for loading & unloading objects that are large & small in size.
- Allow the worker to lift objects remote from the load.
- Speed Handle Controls utilize Thumb Levers for the up and down movement.
- May be used with FULL CAPACITY or MODULAR UNITS.

FLOAT FOR PRECISE POSITIONING: The Speed Handle Controls have a range of float (or balance) of two to six inches. This allows the operator to move the load within a couple of inches of drop off point, then remove hand from the control handle so that the part can be maneuvered into place.

SPEED: The Original and Pro Speed Handle controls allow for variable speeds. Gentle pressure causes a slow gradual movement. Increased pressure causes faster movement. Smooth travel movement is consistent throughout travel. See catalog T-02 for important safety information.

SPEED AND WEIGHT ADJUSTMENTS are easily handled with no additional tools required. The up speed is adjusted by turning the flow control located on the Speed Handle. Down speed is also adjusted at the control handle, for the Original and Pro Speed Handles.

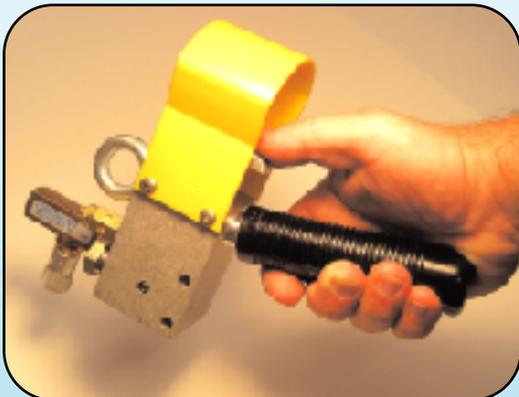
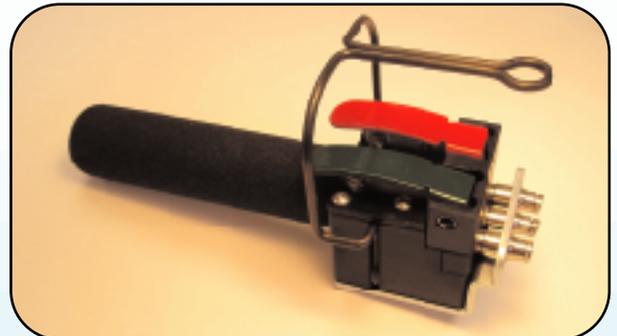


**PRO HANDLE™ - NEW!**

- Small and Lighter.
- Proportional speed up & down, that is the speed is low when the lever is pressed a little and it is higher when the lever is pressed all the way, similar to your car accelerator.
- Works well on Bal-trol® units with 300 lbs. capacity or less.
- Easy to set the up and down speeds initially.

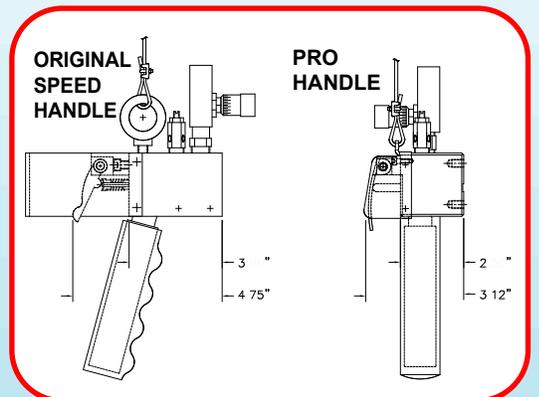
**SLIM HANDLE™ - NEW!**

- Smaller & Light Weight.
- Works well on any size Bal-trol® unit.
- Dual-acting option allows empty hook to be lowered easily on even the largest Bal-trol® units.
- Easy to retrofit on existing Bal-Trol® units.
- This control works thru an air piloted control valve.
- The up and down speeds are set at the Bal-Trol® Air Hoist.



**ORIGINAL SPEED HANDLE™**

- Select this Control for Loads Large in Size.
- Worker Operates Lift Remote from Load.
- Speed Can Be Preadjusted.
- Works well with capacities 300 lbs. and up.



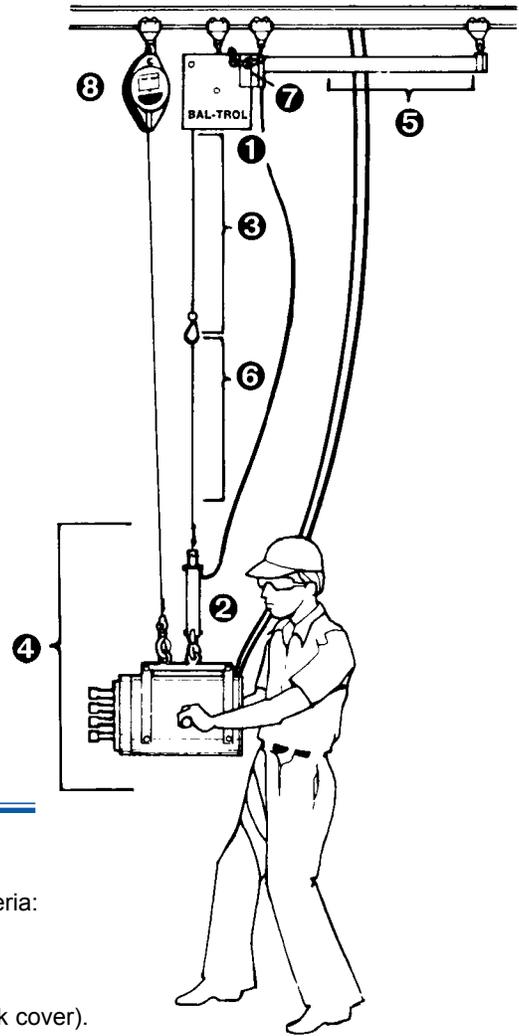
# EXPLANATION OF TERMS FOR BAL-TROL® \*

- U BAL-TROL®**  
Provides a flow of regulated air to one side of a piston riding in a tube. It provides a state of balance or lift.
- V CONTROLS**  
Define application. Four control packages. See pages 2, 3, 4, 5 & back cover.
- W CABLE** Galvanized steel aircraft type.
- X ACTIVE HOOK TRAVEL**  
Distance in feet load moves.
- Y STROKE (SPECIFIED IN INCHES)**  
Movement of piston in cylinder tube.
- Z OVERHANG CABLE (See pg. 16)**  
Extra cable brings load to point where work takes place. Example: Require 2' of travel. Unit is mounted 3' above work area. We would supply a 3' length of cable.

- 7 SECONDARY SUPPORT CHAIN**  
Prevents the possibility of balancer falling. See page 15.
- 8 DROP STOP®** Protects Personnel & Product from falls. Automatically stops possible free fall of loads should hoist fail. Strongly Recommended.

**REGISTERED TRADE NAMES**  
 BAL-TROL®  
 DROP-STOP®  
 ROBOTROL®  
 SENSI-TOUCH®

\* Bal-Trol® is Registered Trademark of Tri-Motion Industries, Inc. Bal-Trol® Products are covered by Patent No. 5,984,276 and other applications pending.



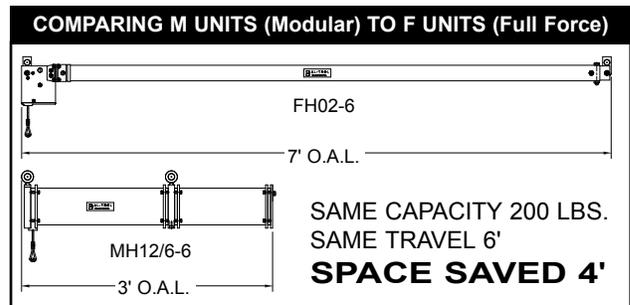
## TRI-MOTION INDUSTRIES...

Bal-Trol® Air Balancers/Air Balancing Hoists feature two distinct styles of units and four control packages. Selection is made on the following **IMPORTANT** criteria:

1. **WEIGHT** (What Bal-Trol® Needs to Lift)
2. **APPLICATION** (Type of Control Required)

- BALANCER** - When a tool or fixture must be virtually weightless (page 2).
- SENSI-TOUCH®** - Pick & Place application for loads small in size (page 3 & back cover).
- SPEED HANDLE** - Pick & Place application for large loads (page 4).
- MULTI-BALANCE** - Select when a Bal-Trol® requires a fixture plus multiple loads (page 5).

3. **SPACE REQUIRED FOR MOUNTING** - Two styles to select:  
**FULL CAPACITY UNITS** Featured on pages 7 & 8 offer 1:1 ratio, these units are dimensionally longer than modular units.  
**MODULAR UNITS** (pages 9 & 10) when mounting space is limited. In the illustration, the two units have the same travel and capacity. Six feet of travel at 200 lb. capacity. 1:1 Ratio equal 7' O.A.L. Modular equals 3' O.A.L.



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# BALANCE (B) CONTROL

FOR CONSTANT WEIGHT BALANCING APPLICATIONS

## PURPOSE - FUNCTION - RESULTS

BALANCERS ARE INTENDED FOR APPLICATIONS WHERE A CONSTANT WEIGHT IS SUPPORTED FROM THE LOAD HOOK.  
BALANCERS GIVE A DEGREE OF WEIGHTLESSNESS TO THE SUSPENDED LOAD. THEY GIVE OBJECT MOBILITY, MINIMIZES OPERATOR FATIGUE, PROTECTS TOOLS FROM BEING DROPPED & DAMAGED.

Tri-Motion Air Balancers Provide a Broad Range of Capacities In Each Model and Provide a True Balance Over Entire Travel.

- VIRTUALLY NO MAINTENANCE - EASY INSTALLATION.
- AIR CONSUMPTION IS NOMINAL, INTAKE AIR IS REQUIRED FOR LIFTING LOAD ONLY
- NO SPRING FATIGUE

Depending on adjustment selection, balance can be either CONSTANT: load remains where it is when operation ceases. BIAS UP: load automatically rises when operator is finished or BIAS DOWN: load returns to a down position.

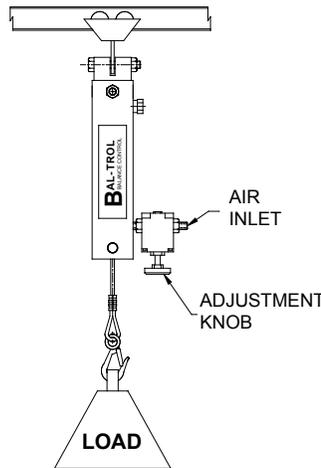
### BALANCER WITH HIGH RELIEF REGULATOR



Adjustment is simple, no additional tools required. Turn the adjustment knob until desired balance is achieved.

Should the main air supply be cut off, check valves keep load from falling.

Chart reflects the range of capacity for units supplied with regulator.



MODEL FH OR FV	MIN/MAX LBS.
50	5-50
01	10-100
M-03	10-80*
M-06	15-100**

\* Maximum based on 4:1 ratio (see page 9).  
\*\*Maximum based on 6:1 ratio (see page 9).

909-30600 Regulator with fitting - nontapped (weight under 100 lbs)  
909-30601 Regulator with fitting - tapped for servo bleed valve.

#### What You Need To Consider When Selecting This Control...

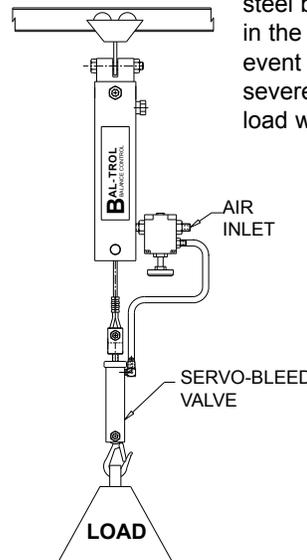
- Weight Of Object(s) 5-100 lbs.
- Unit To Select: MH03, MV03, MH-06, MV-06, FH01, FV01, FH50 & FV50.

### BALANCER WITH SERVO BLEED VALVE\*

No additional tools required for adjustments. Works in conjunction with High Relief Regulator. Simply turn the servo knob until balance is achieved.

Check valves keep load from falling in the event main air supply is lost. Load lowers gradually.

Hose between regulator and servo is a steel braided hose; in the unlikely event hose is severely damaged, load will fall.



MODELS FH, FV, MV12, MH12	MIN/MAX LBS.
02	50-200
03	75-300
06	200-600
08	300-800
12	500-1200
M-06	30-125*
M-12	75-300*
M-40	300-800*

\* Maximum based on 4:1 ratio (see page 9)  
Consult factory if your load is at the high or low extreme end of range.



#### What You Need To Consider When Selecting This Control...

- Weight Of Object(s) 125-1200 lbs.
- Unit To Select: Vertical or Horizontal 200 through 1200 lbs. or the M-12, M-06 or M-40

# SENSI-TOUCH® (S) (SL) CONTROLS

LOAD HOOK IS DIRECTLY UNDER CONTROL

**PURPOSE - FUNCTION - RESULTS**

THIS LIFT ASSIST IS USED FOR PICK AND PLACE APPLICATIONS.  
ENABLES OBJECTS TO BE LOADED AND UNLOADED.  
WHEN SENSI-TOUCH® CONTROL IS SPECIFIED -  
BAL-TROLS (FULL CAPACITY OR MODULAR) AIR BALANCING HOISTS ARE  
MORE THAN A HOIST.

**FLOAT FOR PRECISE POSITIONING:** Sensi-Touch® Control has a range of float (or balance) of two to four inches. This allows operator to move load within a couple of inches of drop off point, remove hands from the control handle so that part can be maneuvered in place.

**SPEED:** This control allows for variable speeds. Gentle pressure causes a slow gradual movement. Increased pressure causes faster movement. Smooth travel movement is consistent throughout travel.

**SPEED AND WEIGHT ADJUSTMENTS** are easily handled with no additional tools required. All up speed is adjusted by turning the flow control on the manifold (located on the Bal-Trol®). Down speed is adjusted at the control handle.

**SAFETY:** Loss of air pressure will not result in load dropping. Bal-Trol® will keep load in place. Once load is in place, load may be removed.

CHART BELOW REFLECTS THE WIDE RANGE OF WEIGHT CAPABILITIES

FV & FH MODEL MAX CAP	MIN/MAX WEIGHT RANGE IN LBS.
01-100 LB	10-100
02-200 LB	15-200
03-300 LB	20-300
06-600 LB	50-600
08-800 LB	75-800
12-1200 LB	100-1200
20-2000 LB	200-2000
MV03 & MH03	10-80*
MV06 & MH06	15-125*
MV12 & MH12	20-300*
MH40	75-800*

\*Maximum based on 4:1 ratio (see page 9).

**SENSI-TOUCH® - S & SL**  
Select This Control For Loads Small In Size. Applications Requiring Precise Speed Positioning.



### Original Sensi-Touch® (S)

A thumb ring at the top of the Sensi-Touch® allows the operator to gradually vary the pressure with which he slides the barrel in either directions.

- Larger, fits into even the largest of hands.
- Activates by applying about 8 lbs. of force.
- Down speed adjustment conveniently located on the control.
- Option available for up speed on the control (adds 1.5").

### Slim-Line Sensi-Touch® (SL)

- Small, fits comfortably in most any size hand.
- Activates by applying about 4 lbs. of force.
- Same load bearing capacity as the original Sensi-Touch®.
- Air flow is just as fast as the original Sensi-Touch®.
- Up & down speed adjustments located near the Bal-Trol®.
- Compatible with all sizes of Bal-Trol®.
- The load does not drop when the hoses are damaged or cut.
- Optional dual-acting control, for lowering empty hook easily.
- Operates at 45 PSI minimum.

# SPEED HANDLE (H) CONTROL

## CONTROL REMOTE FROM LOAD

### PURPOSE - FUNCTION - RESULTS

THIS CONTROL IS USED FOR LOADING AND UNLOADING OBJECTS THAT ARE LARGE IN SIZE. SPEED HANDLE CONTROL UTILIZES PUSH BUTTON FOR THE UP AND DOWN MOVEMENT. LIKE THE SENSI-TOUCH®, IT ALLOWS FOR VARIABLE SPEED. THIS CONTROL MAY BE USED WITH FULL CAPACITY OR MODULAR UNITS.

**FLOAT FOR PRECISE POSITIONING:** The Speed Handle Control has a range of float (or balance) of two to four inches. This allows operator to move load within a couple of inches of drop off point, remove hands from the control handle so that part can be maneuvered in place.

**SPEED:** This control allows for variable speeds. Gentle pressure causes slow gradual movement. Increased pressure causes faster movement. Smooth travel movement is consistent throughout travel.

**SPEED AND WEIGHT ADJUSTMENTS** are easily handled with no additional tools required. The up speed is adjusted by turning the flow control located on the speed handle. Down speed is also adjusted at the control handle.

**SAFETY:** Loss of air pressure will not result in load dropping. Bal-Trol® will keep load in place. Once load is in place, load may be removed.

CHART BELOW REFLECTS THE WIDE RANGE OF WEIGHT CAPABILITIES

FV & FH MODEL MAX CAP	MIN/MAX WEIGHT RANGE IN LBS.
01-100 LB	10-100
02-200 LB	15-200
03-300 LB	20-300
06-600 LB	50-600
08-800 LB	75-800
12-1200 LB	100-1200
20-2000 LB	200-2000
<b>MV03 &amp; MH03</b>	<b>10-80*</b>
<b>MV06 &amp; MH06</b>	<b>15-125*</b>
<b>MV12 &amp; MH12</b>	<b>20-300*</b>
<b>MH40</b>	<b>75-800*</b>

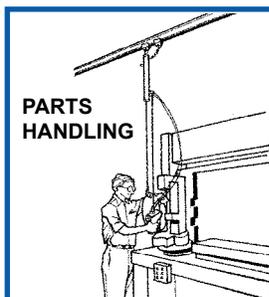
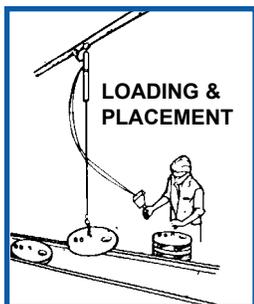
\*Maximum based on 4:1 ratio (see page 9).



**Speed Handle (H)**

For applications that require lowering empty hooks, or light loads, consider the EXHAUST AIR REGULATOR option, (see page 16).

**SPEED HANDLE - H**  
Select This Control For Loads Large In Size.  
Worker Is Remote From Load.



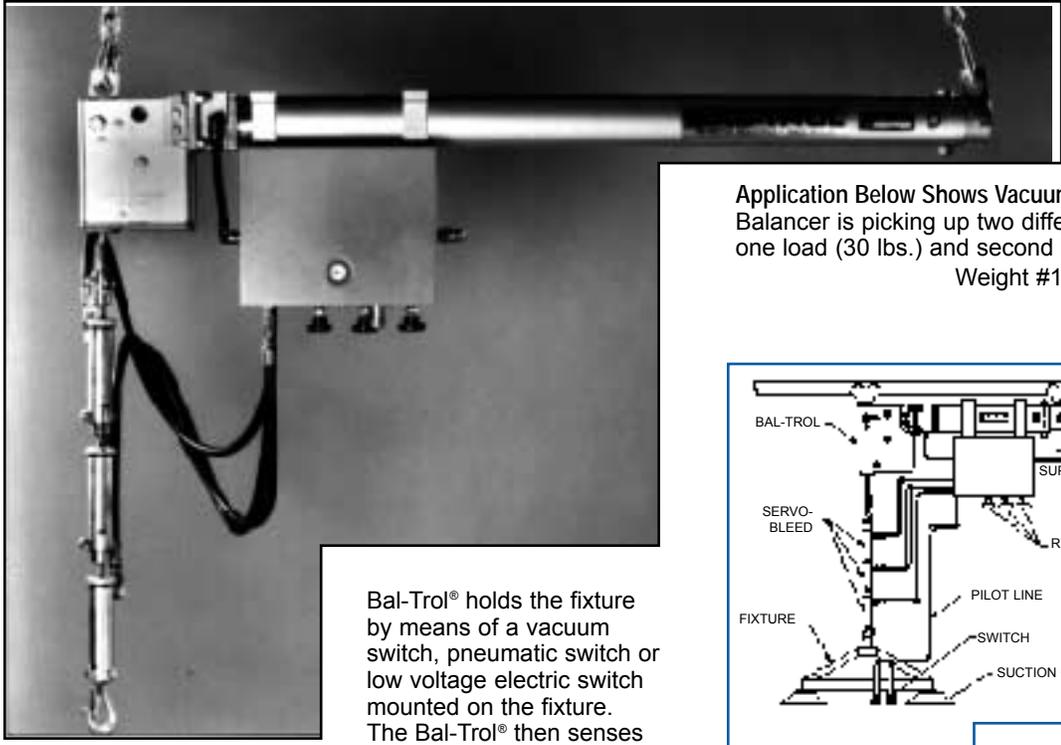
# MULTIPLE BALANCE PACKAGE

FOR FIXTURE APPLICATIONS ONLY

## PURPOSE - FUNCTION - RESULTS

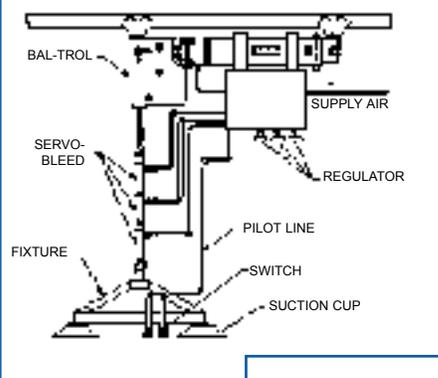
MULTI BALANCE CONTROL (DUAL, TRIPLE OR QUAD) IS INTENDED FOR APPLICATIONS WHERE DIFFERENT WEIGHTS, SUCH AS AN END EFFECTOR (VACUUM, MAGNETIC OR CLAMPING) PICKS UP 1 OR MORE DIFFERENT LOADS VARYING IN WEIGHT.

CONTROLS



Application Below Shows Vacuum Triple Balancer MTB Package. Balancer is picking up two different loads with vacuum cups, one load (30 lbs.) and second load (40 lbs.)

Weight #1 Vacuum Fixture 50 Lbs.  
Weight #2 Load 30 Lbs.  
Weight #3 Load 40 Lbs.  
120 Lbs.



The Fixture Is Virtually Weightless With No Load Attached.

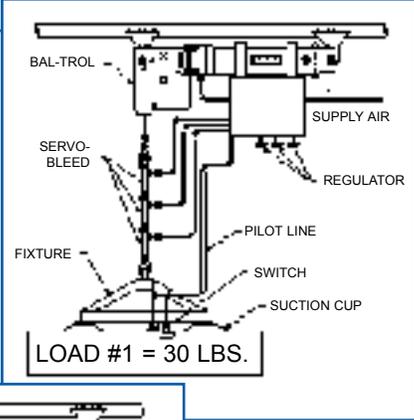
MODEL	APPLICATION CAPACITIES
SDB	DUAL BALANCER 0-100 LBS.
STB	TRIPLE BALANCER 100-300 LBS.
MDB	DUAL BALANCER 300-1000 LBS.
MTB	TRIPLE BALANCER 300-1000 LBS.
LDB	DUAL BALANCER
LTB	TRIPLE BALANCER

Other Packages Available  
Consult TMI Technical Sales Department

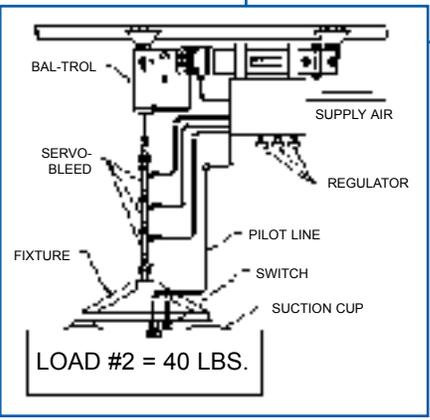
Bal-Trol® holds the fixture by means of a vacuum switch, pneumatic switch or low voltage electric switch mounted on the fixture. The Bal-Trol® then senses the fixture and load(s).

IMPORTANT: TRI-MOTION WILL SUPPLY SWITCH IF REQUESTED. IN THE EVENT SWITCH IS NOT CUSTOMER SUPPLIED, TRI-MOTION MUST BE ADVISED AT TIME OF QUOTE/ORDER.

**Correct Model Is Based On Maximum Weight**  
Example: Fixture is 50 Lbs.  
Load Weight 200 Lbs.  
250 Lbs.  
Select Model MDB

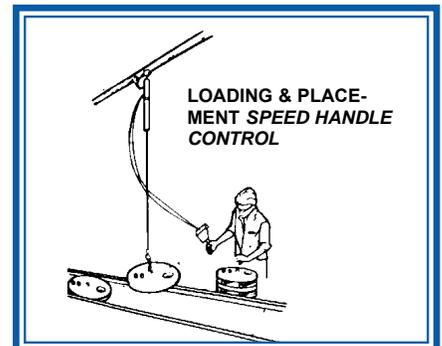
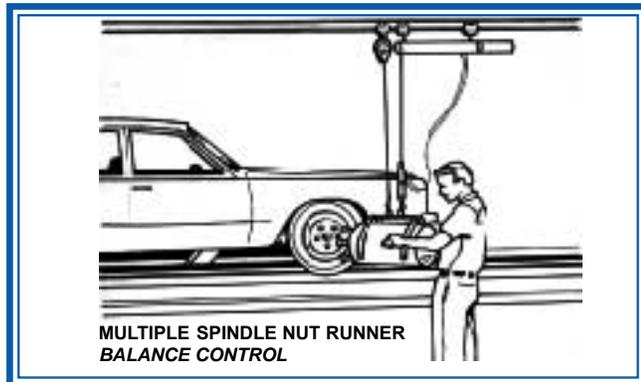
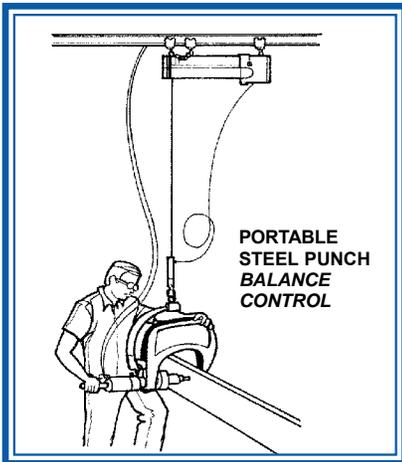
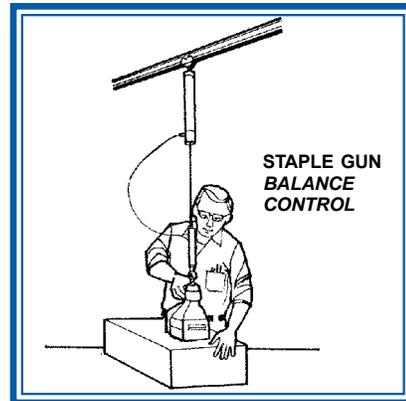
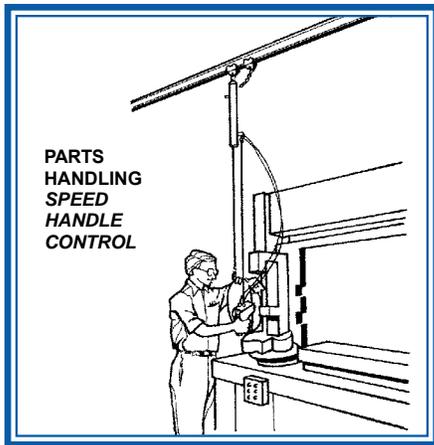
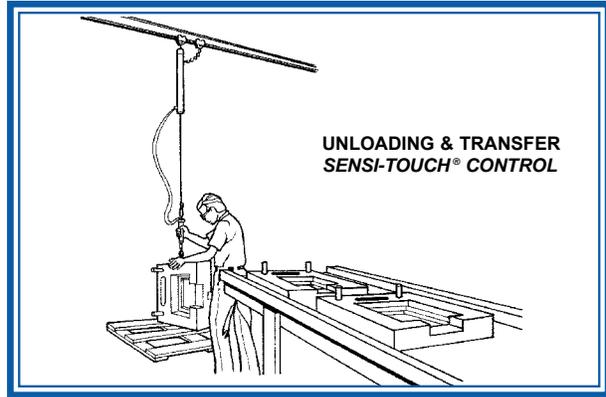
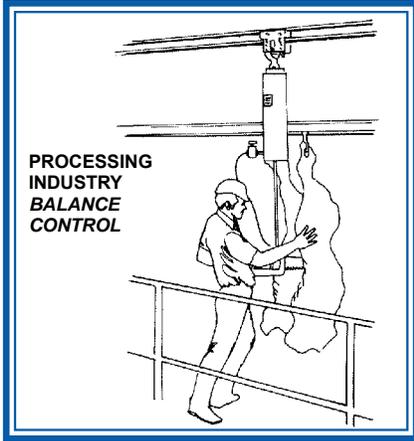


The Fixture Is Virtually Weightless With Load # 1 Attached.



The Fixture Is Virtually Weightless With Load #2 Attached.

**IMPORTANT TIP:**  
When Figuring Available Mounting Space, Consider Bal-Trol®, End Effector, Controls (Add 10" for Each Control for MDB & MTB and 12.5" for Each Control for LDB & LTB) and Load(s). Dimensions In Our Example of MTB - Each Control Would Add 10" Total = 30".



No Spring Fatigue = Reduced Operator Fatigue  
 Minimal Maintenance = Reduced Costly Downtime  
 Uncluttered Work Areas = Reduced Potential Safety Hazards  
**BAL-TROL® = GREATER WORKER OUT-**

# F-FULL CAPACITY UNITS - 8 MODELS

**TWO MOUNTING STYLES AVAILABLE - HORIZONTAL AND VERTICAL MOUNT**

- Full Capacity Units Offer Ergonomic Solutions For Employee Fatigue, Efficiency And Workplace Safety.
- They Offer A Wide Range Of Capacities: 10-2000 Lbs.
  - Least Expensive - Fewest Moving Parts
  - Cable & Seals Easily Changed In The Field
  - Made To Order Travels From 1' to 15' Or More

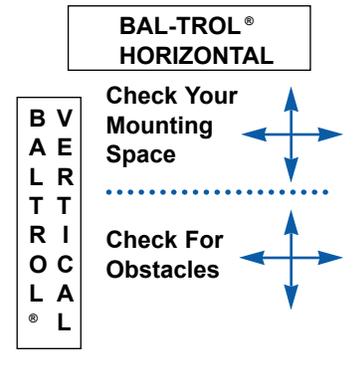
## VERTICAL BAL-TROL®



**Consider This When Selecting Vertical Model Available Vertical Mounting Space Requires High Ceilings**

FV01-4-S shown

**Important Tips When Selecting FH or FV Units**



## HORIZONTAL BAL-TROL®



FH03-3-B shown

**Consider This When Selecting Horizontal Model Horizontal Mounting Space & Vertical Space (Sheave moves the cable from horizontal plane to a vertical plane).**

## MODEL SELECTION

MODEL	BORE SIZE (Inches)	CAPACITY @ 80 PSI	CAPACITY @ 100 PSI
50	1	50	65
01	1-1/2	100	125
02	2	200	250
03	2-1/2	300	375
06	3-1/4	600	750
08	4	800	1000
12	5	1200	1500
20**	6	2000	2500

Travel can be specified in 1/4 foot increments. \*\*Model 20 (2000 lbs.) is available as an air balance hoist ONLY. Select S (Sensi-Touch®) or H (Speed Handle) Control.

**HOW TO ORDER - FIGURE (1) CAPACITY, (2) TRAVEL, (3) CONTROL OPTIONS AND (4) CHECK OVERALL LENGTH BEFORE ORDERING - SEE MODULAR UNITS FOR SPACE SAVING**

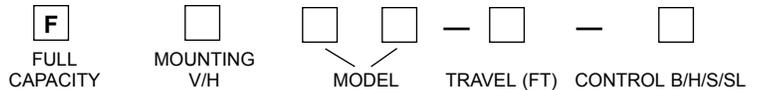
Examples: **Model - FV12-4-S**  
Full Cap., Vertical, 1200 lbs. Capacity, 4 ft. of Travel, Sensi-Touch® Control indicate "S" or "SL" (See page 3).

**CHECK UNITS OVERALL LENGTH**

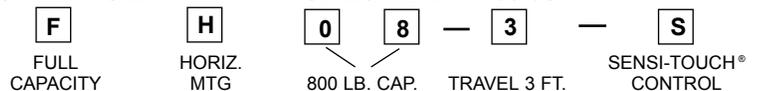
**Model - FH02-5-B**  
Full Cap., Horizontal, 200 lbs. Capacity, 5 ft. of Travel, Balance Control Package.(See page 2).

**CHECK YOUR HORIZONTAL & VERTICAL DIMENSIONS**

**ORDERING FULL CAPACITY**



**ORDER FULL CAPACITY HORIZONTAL - FH08-3S**



**WE RECOMMEND OUR SAFETY CHAIN & DROP STOP® LOAD ARRESTORS (OSHA APPROVED) FOR SAFETY OF PERSONNEL AND PRODUCT.**

BAL-TROL® F

# F-FULL CAPACITY

## FH - HORIZONTAL DIMENSIONS

MODEL	A	B	C	F	G	H	S	W	X	Y	Z	DIA.	THK.	CABLE DIA.	PORTS (NPT)
50	1.00	3.00	4.50	2.25	2.50	N/A	N/A	8.10	6.85	1.50	2.00	.75	.13	ID: 1/16 OD: 3/32 (7 X 7)	1/8
01	1.50	3.00	4.50	1.91	6.00	3.00	16.69	11.56	10.06	2.50	3.38	1.00	.18	ID: 1/8 OD: 3/16 (19 X 7)	3/8
02	2.00	10.00	5.00	1.63	7.00	3.00	16.69	13.26	11.53	2.00	4.13	1.00	.18	ID: 5/32 OD: 1/4 (7 X 19)	3/8
03	2.50	10.00	5.00	1.63	7.00	3.00	16.69	13.26	11.53	2.00	4.63	1.00	.18	ID: 5/32 OD: 1/4 (7 X 19)	3/8
06	3.25	12.50	5.50	2.41	8.63	4.00	17.69	19.06	16.41	2.00	5.50	1.00	.50	ID: 3/16 OD: 5/16 (7 X 19)	1/2
08	4.00	12.50	6.00	2.00	10.63	4.00	17.69	19.06	16.48	2.00	6.25	1.00	.50	ID: 1/4 OD: 3/8 (7 X 19)	1/2
12	5.00	12.50	6.00	1.50	10.63	4.00	17.69	21.13	18.30	2.00	7.63	1.00	.50	ID: 1/4 OD: 3/8 (7 X 19)	1/2
20	6.00	N/A	8.00	3.00	16.44	4.00	17.69	25.36	22.80	4.00	8.00	1.00	.75	ID: 5/16 OD: 1/2 (7 X 19)	1/2

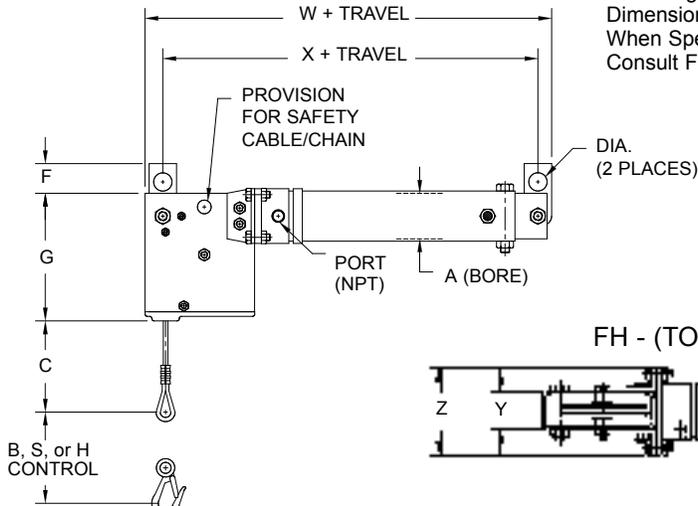
ALL DIMENSIONS IN INCHES

## FV - VERTICAL DIMENSIONS

MODEL	A	B	C	D	E	H	L	S	U	DIA.	THK.	CABLE DIA.	PORTS (NPT)
50	1.00	3.00	4.50	1.00	2.00	N/A	7.75	N/A	4.06	.75	.13	ID: 1/16 OD: 3/32 (7 X 7)	1/8
01	1.50	3.00	4.50	1.00	2.38	3.00	7.94	16.69	4.56	1.00	.18	ID: 1/8 OD: 3/16 (19 X 7)	1/4
02	2.00	10.00	5.00	1.00	2.38	3.00	7.94	16.69	5.06	1.00	.18	ID: 5/32 OD: 1/4 (7 X 19)	1/4
03	2.50	10.00	5.00	1.00	2.38	3.00	7.94	16.69	5.56	1.00	.18	ID: 5/32 OD: 1/4 (7 X 19)	1/4
06	3.25	12.50	5.50	1.00	3.28	4.00	9.92	17.69	6.31	1.00	.50	ID: 3/16 OD: 5/16 (7 X 19)	1/2
08	4.00	12.50	6.00	1.00	3.26	4.00	10.82	17.69	7.06	1.00	.50	ID: 1/4 OD: 3/8 (7 X 19)	1/2
12	5.00	12.50	6.00	1.00	3.00	4.00	12.97	17.69	8.06	1.00	.50	ID: 1/4 OD: 3/8 (7 X 19)	1/2
20	6.00	N/A	8.00	1.00	3.00	4.00	13.36	17.69	9.06	1.00	.75	ID: 5/16 OD: 1/2 (7 X 19)	1/2

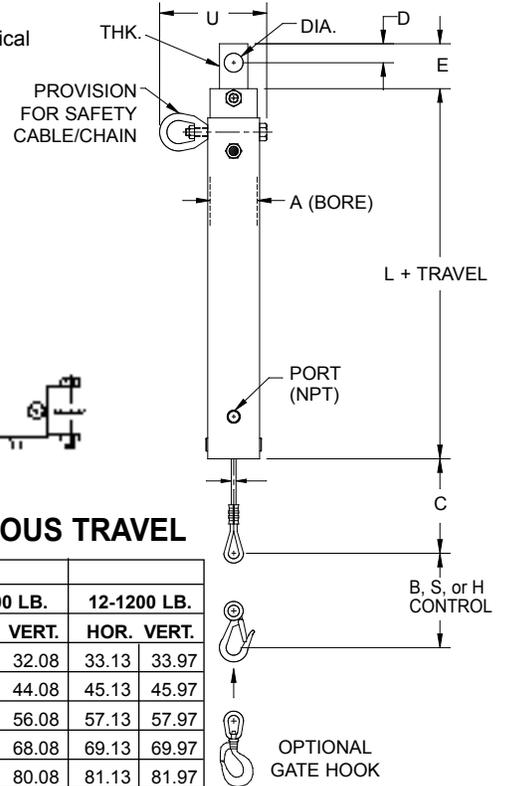
ALL DIMENSIONS IN INCHES

### FH - HORIZONTAL DIMENSIONS



NOTE: We Reserve The Right To Change Specifications And Dimensions Without Notice. When Specifications Are Critical Consult Factory.

### FV - VERTICAL DIMENSIONS



## F - FULL CAPACITY OVERALL LENGTH AT VARIOUS TRAVEL

TRAVEL	50-50 LB.		01-100 LB.		02 & 03		06-600 LB.		08-800 LB.		12-1200 LB.	
	IN FEET	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.
1'	20.10	26.25	23.56	26.82	25.26	27.32	31.06	30.70	31.06	32.08	33.13	33.97
2'	32.10	38.25	35.56	38.82	37.26	39.32	43.06	42.70	43.06	44.08	45.13	45.97
3'	44.10	50.25	47.56	50.82	49.26	51.32	55.06	54.70	55.06	56.08	57.13	57.97
4'	56.10	62.25	59.56	62.82	61.26	63.32	67.06	66.70	67.06	68.08	69.13	69.97
5'	68.10	74.25	71.56	74.82	73.26	75.32	79.06	78.70	79.06	80.08	81.13	81.97
6'	80.10	86.25	83.56	86.82	85.26	87.32	91.06	90.70	91.06	92.08	93.13	93.97
7'	92.10	98.25	95.56	98.82	97.26	99.32	103.06	102.70	103.06	104.08	105.13	105.97
8'	104.10	110.25	107.56	110.82	109.26	111.32	115.06	114.70	115.06	116.08	117.13	117.97
9'	116.10	122.25	119.56	122.82	121.26	123.32	127.06	126.70	127.06	128.08	129.13	129.97

*DIMENSIONS GIVEN IN INCHES, NO CONTROLS OR ACCESSORIES INCLUDED.*

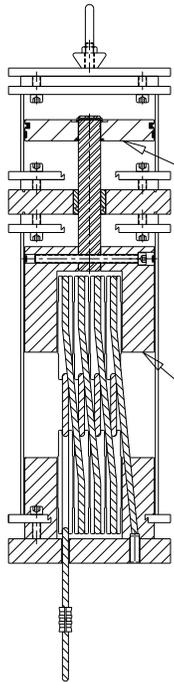
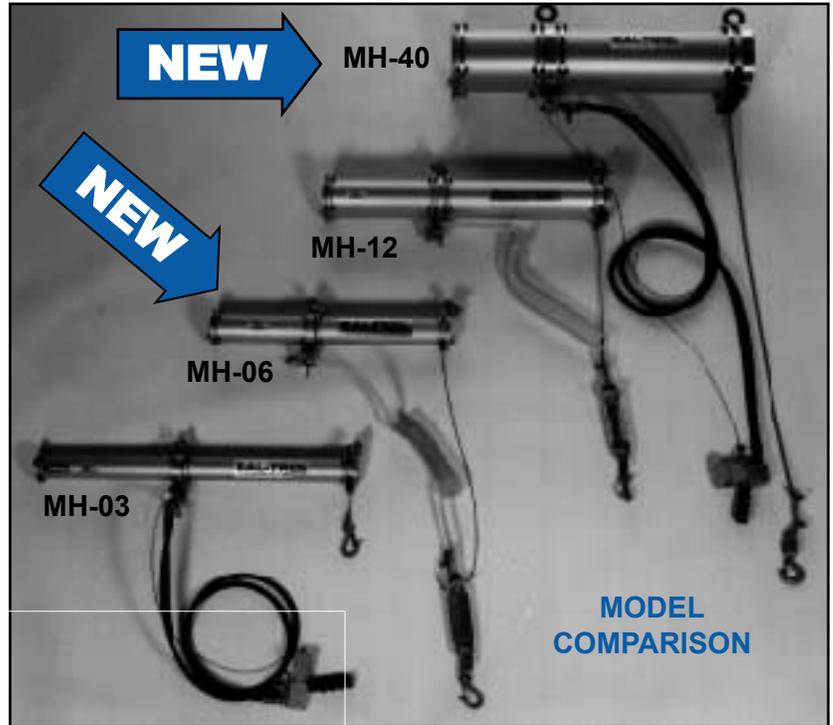
**We Have Figured Your Overall Lengths**

# M-MODULAR RATIO UNITS - 4 MODELS

## M-03, M-06, M-12 & M-40

**TWO MOUNTING STYLES AVAILABLE:**  
**HORIZONTAL AND VERTICAL MOUNT**

- Modular Units - **SPACE SAVERS**
- Supply Ergonomic Solution For Work Force Efficiency And Safety For The Workplace.
- Each Model Offers A Wide Range Of Lifting Capabilities.
- Easy To Install And Maintain - Field Repairable.
- Made To Order Travels From 1' To 15' Or More.



**HOW SPACE IS SAVED**

**Power Module** consists of a piston and rod that generate the force required to lift and balance specified load.

**Travel Module** consists of a series of sheaves, (pulleys). Cable is reeved back and forth between sheaves. Travel Module defines the travel.

Example: 8 Sheaves would be 8:1 Ratio. 4 Sheaves would be 4:1 Ratio.

Power and Travel Module work in line with each other.

Examples: **Model - MH12/6-7-H**  
Modular Ratio., Horizontal Mtg., 1200/6. = 200 lbs. cap., 7' travel, Speed Handle Control.

**Model - MV06/8-4-SL**  
Modular Ratio, Horizontal Mtg. 600/8 = 75 lbs. cap., 4' travel, Slim-Line Sensi-Touch® Control.

**Model - MV03/6-6-B**  
Modular Ratio, Vertical Mtg. 300/6 = 50 lbs. cap., 6' travel, Balance Control.

**CHECK UNIT'S OVERALL LENGTH, CHECK YOUR HORIZONTAL & VERTICAL DIMENSIONS, SEE PAGE 10.**

**HOOK TRAVEL: ACTUAL TRAVEL IN FEET BASED ON APPLICATION**  
**PISTON STROKE: WE HAVE SUPPLIED THE PISTON STROKE TO VARIOUS TRAVELS; SIMPLY MULTIPLY PISTON STROKE X 2 AND ADD IN APPROPRIATE DIMENSION FROM PAGE 9.**

RATIO		2 FT.	3 FT.	4 FT.	5 FT.	6 FT.	7 FT.	8 FT.	9 FT.
<b>4:1</b>	HOOK TRAVEL*	2 FT.	3 FT.	4 FT.	5 FT.	6 FT.	7 FT.	8 FT.	9 FT.
	PISTON STROKE**	6"	9"	12"	15"	18"	21"	24"	27"
<b>6:1</b>	HOOK TRAVEL*	2 FT.	3 FT.	4 FT.	5 FT.	6 FT.	7 FT.	8 FT.	9 FT.
	PISTON STROKE**	4"	6"	8"	10"	12"	14"	16"	18"
<b>8:1</b>	HOOK TRAVEL*	2 FT.	3 FT.	4 FT.	5 FT.	6 FT.	7 FT.	8 FT.	9 FT.
	PISTON STROKE**	3"	4.5"	6"	7.5"	9"	10.5"	12"	13.5"

\* Hook Travel Specified In Feet  
\*\* Piston Stroke Specified In Inches - Used for determining O.A.L. Dimension

DEFINES CAPACITY BEFORE RATIO IS DETERMINED.	RATIO	M-03 300 LB. MAX 80 PSI	M-06 600 LB. MAX 80 PSI	M-12 1200 LB. MAX 80 PSI	M-40 4000 LB. MAX 100 PSI
DEFINES HOW RATIO OF 4, 6 OR 8 DECREASES MAXIMUM CAPACITY OF UNIT.	4:1	80 LBS.	125 LBS.	300 LBS.	800 LBS.
	6:1	60 LBS.	100 LBS.	200 LBS.	600 LBS.
	8:1	40 LBS.	75 LBS.	150 LBS.	400 LBS.

**ORDER MODULAR CAPACITY VERTICAL**



**MV03/6-6B** Modular capacity, Vertical mounting, 60 lb. Cap. @ 80 PSI, 6 ft. travel with Balance Control.

**WE RECOMMEND OUR SAFETY CHAIN & DROP STOP® LOAD ARRESTORS (OSHA APPROVED) FOR SAFETY OF PERSONNEL AND PRODUCT.**

BAL-TROL® M

# M-MODULAR UNITS

## MH - HORIZONTAL DIMENSIONS

MODEL	A	B	C	F	G	H	S	U	Y	DIA.	CABLE DIA.	PORTS (NPT)
03	3.63	3.00	4.50	5.25	6.00	3.00	16.69	8.54	5.18	.88	ID: 1/16 OD: 3/32 (7 X 7)	1/4
06	4.50	3.00	4.50	6.25	7.06	3.00	16.69	11.03	7.69	.88	ID: 3/32 OD: 1/8 (7 X 19)	3/8
12	6.25	10.00	5.50	7.26	8.07	3.00	16.69	12.30	8.81	1.00	ID: 1/8 OD: 3/16 (19 X 7)	3/8
40*	10.00	12.50	6.50	12.38	13.75	4.00	17.69	22.15	17.18	1.50	ID: 1/4 OD: 3/8 (7 X 19)	1/2

ALL DIMENSIONS IN INCHES

## MV - VERTICAL DIMENSIONS

MODEL	A	B	C	H	S	U	Y	DIA.	CABLE DIA.	PORTS (NPT)
03	3.63	3.00	4.50	3.00	16.69	9.00	7.82	.88	ID: 1/16 OD: 3/32 (7 X 19)	1/4
06	4.50	3.00	4.50	3.00	16.69	12.16	11.09	.88	ID: 3/32 OD: 1/8 (7 X 19)	3/8
12	6.25	10.00	5.50	3.00	16.69	14.32	12.62	1.00	ID: 1/8 OD: 3/16 (19 X 7)	3/8

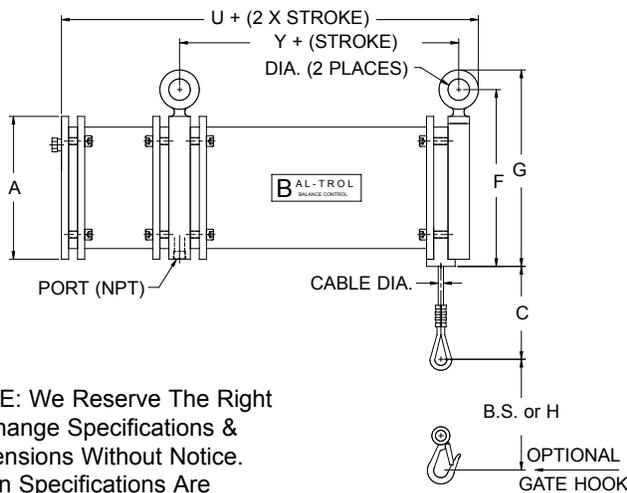
ALL DIMENSIONS IN INCHES

\* M40 IS AVAILABLE IN HORIZONTAL MOUNT ONLY.

## MH-40 MODEL OVERALL LENGTH AT VARIOUS TRAVEL

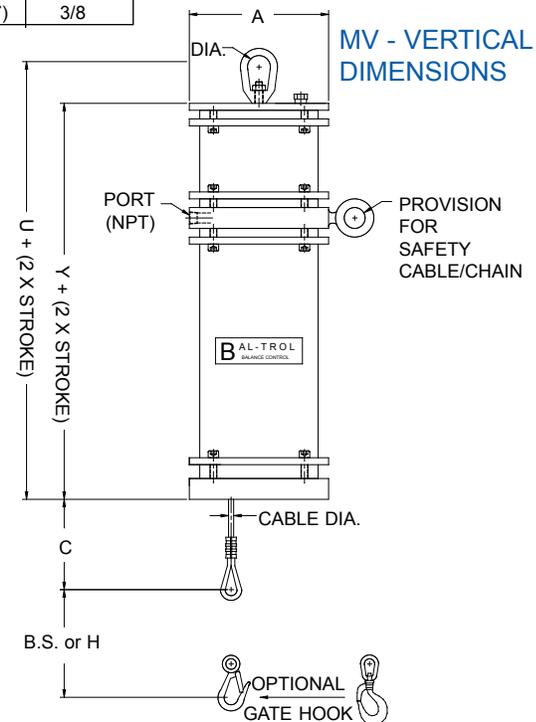
TRAVEL FEET	MH-40 4:1 800 LBS.	MH-40 6:1 600 LBS.	MH-40 8:1 400 LBS.
2'	34.15	30.15	28.15
3'	40.15	34.15	31.15
4'	46.15	38.15	34.15
5'	52.15	42.15	37.15
6'	58.15	46.15	40.15
7'	64.15	50.15	43.15
8'	70.15	54.15	46.15
9'	76.15	58.15	49.15

### MH - HORIZONTAL DIMENSIONS



NOTE: We Reserve The Right to Change Specifications & Dimensions Without Notice. When Specifications Are Critical Consult Factory.

### MV - VERTICAL DIMENSIONS



THE CHARTS BELOW INDICATE THE OVERALL LENGTH OF UNITS AT VARIOUS TRAVEL. THESE MEASUREMENTS ARE THE OVERALL LENGTH ONLY, **NO CONTROLS ADDED IN.**

We Have Figured Your Overall Lengths

## M - MODULAR CAPACITY OVERALL LENGTH AT VARIOUS TRAVEL

TRAVEL FEET	40 LBS.		60 LBS.		80 LBS.		75 LBS.		100 LBS.		125 LBS.		150 LBS.		200 LBS.		300 LBS	
	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.	HOR.	VERT.
2'	14.54	19.50	16.54	21.50	20.54	25.50	17.03	22.66	19.03	24.66	23.03	28.66	18.30	25.82	20.30	27.82	24.30	31.82
3'	17.54	22.50	20.54	25.50	26.54	31.50	20.03	25.66	23.03	28.66	29.03	34.66	21.30	28.82	24.30	31.82	30.30	37.82
4'	20.54	25.50	24.54	29.50	32.54	37.50	23.03	28.66	27.03	32.66	35.03	40.66	24.30	31.82	28.30	35.82	36.30	43.82
5'	23.54	28.50	28.54	33.50	38.54	43.50	26.03	31.66	31.03	36.66	41.03	46.66	27.30	34.82	32.30	39.82	42.30	49.82
6'	26.54	31.50	32.54	37.50	44.54	49.50	29.03	34.66	35.03	40.66	47.03	52.66	30.30	37.82	36.30	43.82	48.30	55.82
7'	29.54	34.50	36.54	41.50	50.54	55.50	32.03	37.66	39.03	44.66	53.03	58.66	33.30	40.82	40.30	47.82	54.30	61.82
8'	32.54	37.50	40.54	45.50	56.54	61.50	35.03	40.66	43.03	48.66	59.03	64.66	36.30	43.82	44.30	51.82	60.30	67.82
9'	35.54	40.50	44.54	49.50	62.54	67.50	38.03	43.66	47.03	52.66	65.03	70.66	39.30	46.82	48.30	55.82	66.30	73.82
10'	38.54	43.50	48.54	53.50	68.54	73.50	41.03	46.66	51.03	56.66	71.03	76.66	42.30	49.82	52.30	59.82	72.30	79.82

O.A.L.. = OVER ALL LENGTH (IN INCHES) CAP. = CAPACITY BASED ON 80 PSI - M-40 BASED ON 100 PSI M/R = MODEL/RATIO. TRAVEL (HOOK TRAVEL IN FEET).

TO CALCULATE O.A.L. OF ANY MODULAR UNIT YOU NEED TO KNOW THE "PISTON STROKE", CONVERT TRAVEL TO INCHES AND DIVIDE BY RATIO, MULTIPLY BY 2, ADD IN "U" DIMENSION FOR O.A.L.

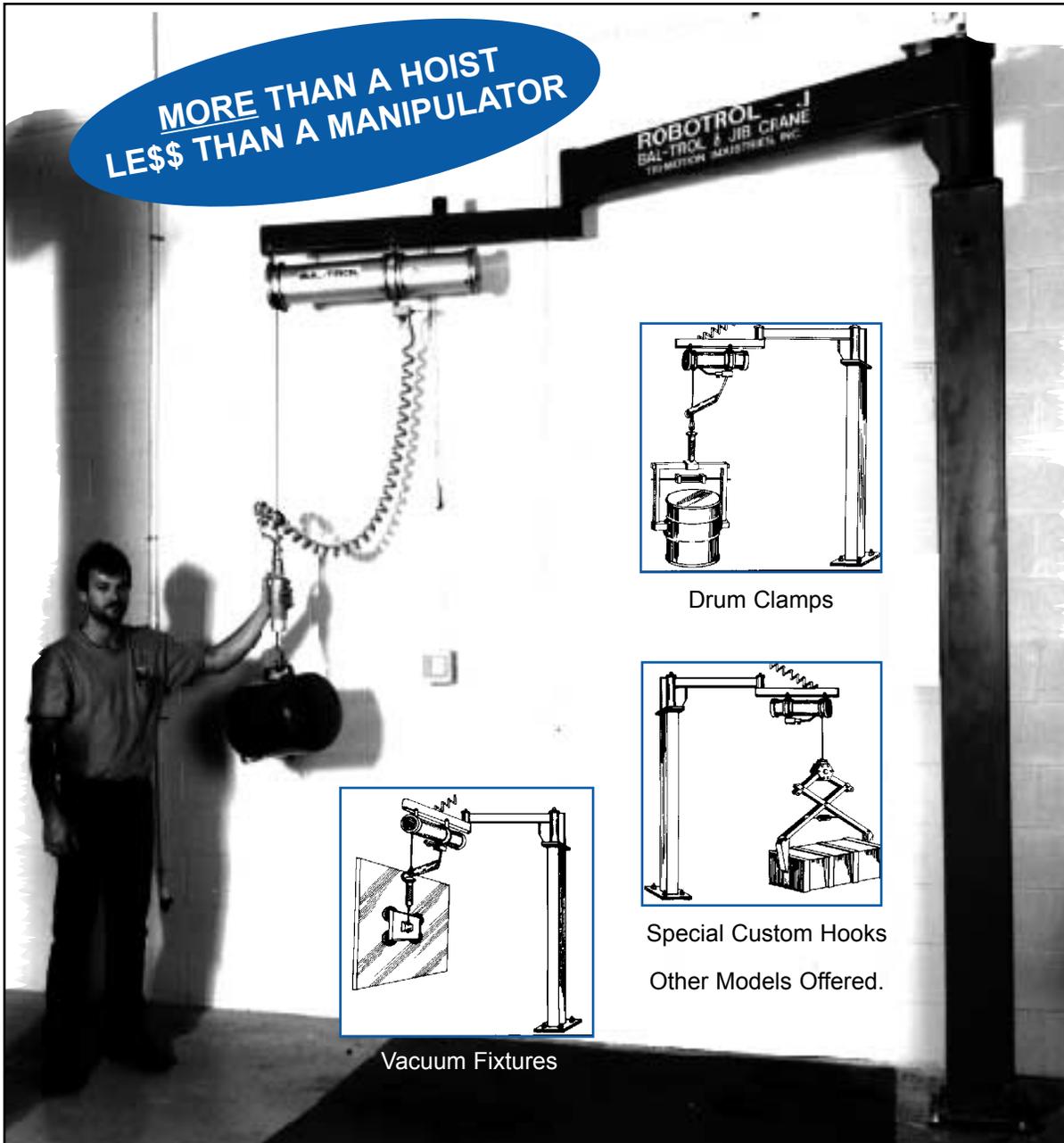
# ARTICULATING ROBOTROL®

## BAL-TROL® + JIB CRANE = ROBOTROL®

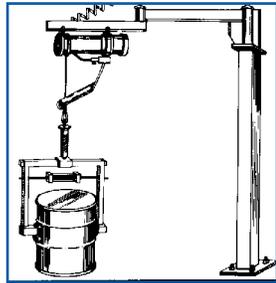
### .....A GREAT COMBINATION

#### THE PURPOSE OF COMBINING A BAL-TROL® & ARTICULATED JIB CRANE

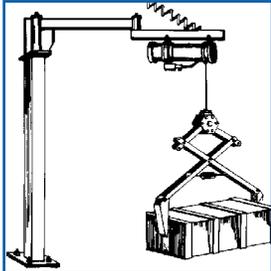
1. Supply An Economical Solution To Localized Handling Or Spotting Applications, Parts Pick-up, Transfer And Positioning Applications.
2. An Excellent Source For Overhead Material Handling Requirements.
3. Provide A Means Of Workplace Safety.
4. Enhances Workforce Efficiency.



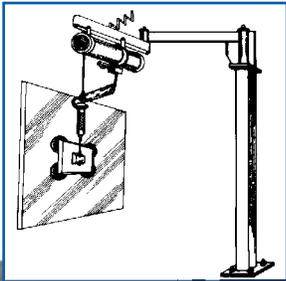
**MORE THAN A HOIST  
LE\$\$ THAN A MANIPULATOR**



Drum Clamps



Special Custom Hooks  
Other Models Offered.



Vacuum Fixtures

ROBOTROL® J

# ARTICULATING ROBOTROL®

## SELECTION TWO MODELS AVAILABLE:

Model TMI-275A, Rated at 275 lb. Capacity  
 Model TMI 550A, Rated at 550 lb. Capacity  
 Articulating Robotrols® work best with horizontal  
 Bal-Trols®. A combination of articulated crane,  
 Bal-Trol® and fixture maximizes versatility with  
MULTI-AXIS MOTION, MULTI DIRECTIONAL  
 COVERAGE AND QUICK PRECISE REACHING  
 AND POSITIONING.

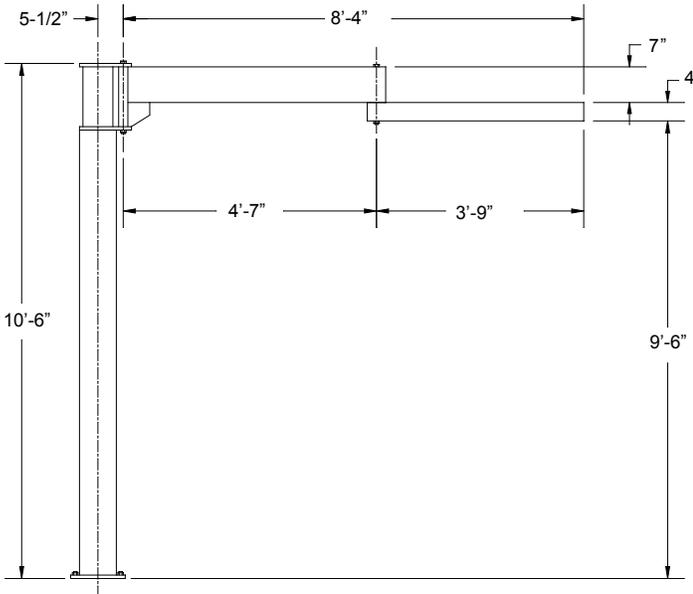
## FEATURES:

- All Models Are Supplied With Standard Friction Braking Systems On Both Arms.
- Upper Arm Offers 270 Degree Rotation - Lower Arm 360 Degree Rotation.
- Maintenance Free Sealed Bearing
- Arms Constructed Of Rectangular Steel - Heavy Duty Construction Throughout.
- Low Cost Manipulator.

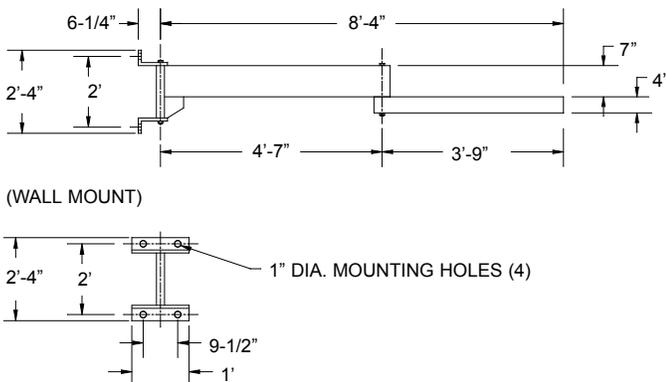
## IMPORTANT TIP:

When Figuring Available Space Under Lower Arm, Consider Bal-Trol®, End Effector and Load(s) Dimensions.

## FLOOR MOUNTED



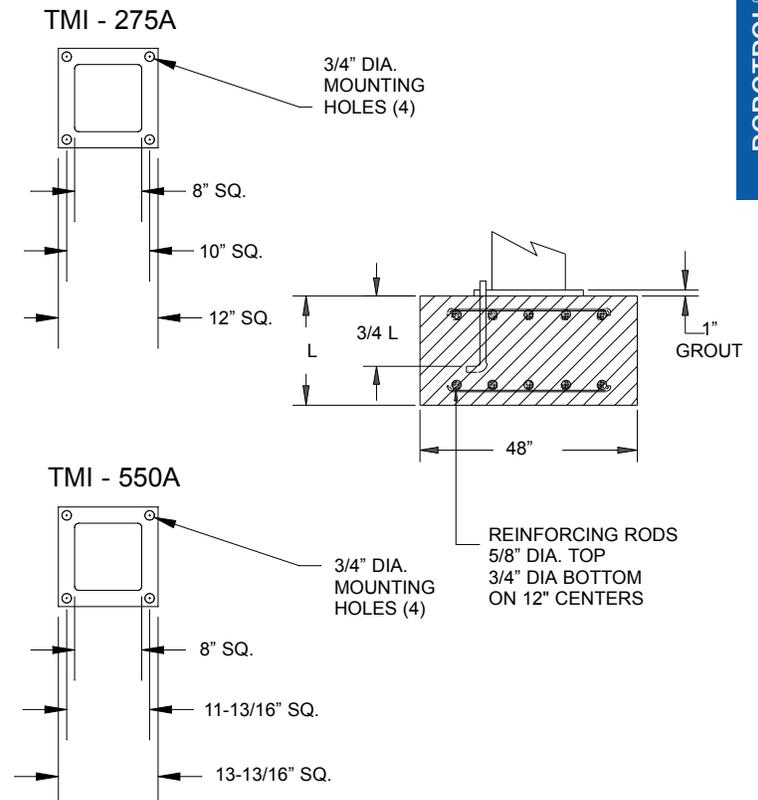
## WALL MOUNTED



## INSTALLATION REQUIREMENTS

MODEL	CAPACITY	ANCHOR BOLT LOAD	BOLT QTY.	BOLT DIA.	L
TMI-275A	275 LBS.	1,750 LBS.	4	3/4"	6"
TMI-550A	550 LBS.	2,250 LBS.	4	3/4"	36"

FOUNDATION REQUIREMENTS ARE BASED ON A SOIL PRESSURE OF 2500 LB/FT<sup>2</sup>. CONCRETE RECOMMENDED FOR JIB CRANE FOUNDATION IS 3000 LB/IN<sup>2</sup> OF COMPRESSIVE FORCE.

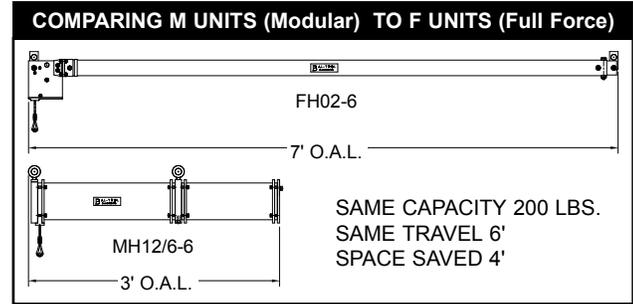


**TRI-MOTION INDUSTRIES...**

Bal-Trol® Air Balancers/Air Balancing Hoists feature two distinct styles of units and four control packages. Selection is made on the following IMPORTANT Criteria:

1. **WEIGHT** (What Bal-Trol® Needs to Lift)
2. **APPLICATION** (Type of Control Required)
  - BALANCER** - When a tool or fixture must be virtually weightless (page 2).
  - SENSI-TOUCH®** - Pick & Place application for loads small in size (pg 3 & back cover).
  - SPEED HANDLE** - Pick & Place application for large loads (page 4).
  - MULTI-BALANCE** - Select when a Bal-Trol® requires a fixture plus multiple loads (page 5).
3. **SPACE REQUIRED FOR MOUNTING** - Two styles to select:
  - FULL CAPACITY UNITS** Featured on pages 7 & 8 offer 1:1 ratio, these units are dimensionally longer than modular units.
  - MODULAR UNITS** (pages 9 & 10) when mounting space is limited. In the illustration, the two units have the same travel and capacity. Six foot of travel at 200 lbs. capacity. 1:1 Ratio equal 7' O.A.L., Modular equals 3' O.A.L.

*Please photocopy this form before filling it out.*



*Please photocopy this form before filling it out.*

**FOR BAL-TROL® OR ROBOTROL®**

Company Name: \_\_\_\_\_ Contact Name: \_\_\_\_\_  
 Street Address: \_\_\_\_\_ Phone: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_ Fax: \_\_\_\_\_

Air Pressure & Size of Line at Install Area: \_\_\_\_\_ Size \_\_\_\_\_ PSI Date \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Electrical: \_\_\_\_\_ 110/220 \_\_\_\_\_ 230 3 ph \_\_\_\_\_ 480 3 ph

Products to be Handled: \_\_\_\_\_  
 Max Cycles/Hour: \_\_\_\_\_ Shifts Per Day: \_\_\_\_\_

Environment: \_\_\_\_\_ Wet \_\_\_\_\_ Corrosive \_\_\_\_\_ Dusty \_\_\_\_\_ Abrasive \_\_\_\_\_ Explosive \_\_\_\_\_ Clean \_\_\_\_\_ Temp.

	Weight (Lbs.)	Height	Width	Length	I.D.	O.D.
Max:	_____	_____	_____	_____	_____	_____
Min:	_____	_____	_____	_____	_____	_____

Maximum/Minimum Reach Needed: \_\_\_\_\_ / \_\_\_\_\_ Inches from Center Line Of Manipulator  
 Distance to Bottom of Product at Lowest Position: \_\_\_\_\_ Inches Distance at Highest Position \_\_\_\_\_ Inches  
 Clearance Factors:  
 Distance to lowest fixed overhead obstruction which can't or would not be moved.  
 \_\_\_\_\_ Inches from Floor.

Mounting Preference: \_\_\_\_\_ Fixed Floor Mount \_\_\_\_\_ Fixed Overhead Mount \_\_\_\_\_ Portable Forklift/Pallet Jack Base  
 \_\_\_\_\_ Mobile Overhead Bridge Mount

Please Submit Drawing Showing Any Obstructions.

Desired Model: Full Capacity: \_\_\_\_\_ Modular/Ratio \_\_\_\_\_

Mounting Required: Vertical \_\_\_\_\_ Horizontal \_\_\_\_\_

Travel Required: \_\_\_\_\_ FT.

Overhang Cable Required: \_\_\_\_\_ YES \_\_\_\_\_ NO If so, Feet needed \_\_\_\_\_ FT.

Provide Overall Length of Unit \_\_\_\_\_

Type of Control: \_\_\_\_\_ Balance (B) \_\_\_\_\_ Sensi-Touch(S) Slim-Line(SL) \_\_\_\_\_ Speed Handle(H)

Dual Balance Required: \_\_\_\_\_ Yes \_\_\_\_\_ No Secondary Support Chain Required: \_\_\_\_\_ Yes \_\_\_\_\_ No

Trolley(s) Required \_\_\_\_\_ Yes \_\_\_\_\_ No

If Yes, Please State the Width of I-Beam \_\_\_\_\_ Inches

Quantity Required: \_\_\_\_\_ Qty.

Horizontal Mount Requires 2 Trolleys  
 Vertical Mount Requires 1 Trolley

Drop Stop® Required: \_\_\_\_\_ Yes \_\_\_\_\_ No  
 Lift Capacity of Drop Stop® \_\_\_\_\_ Lbs.  
 Lift Length of Cable: \_\_\_\_\_ Ft.  
 Hook Option: \_\_\_\_\_ Yes \_\_\_\_\_ No

# DROP-STOP® LOAD ARRESTORS

**FUNCTION: ARREST ACCIDENTAL FREE-FALL OF LOADS ON PRODUCT OR PERSONNEL**

**APPLICATIONS: PROTECTS HEAVY COMPONENTS/ASSEMBLIES & RAW MATERIALS. USED EXTENSIVELY IN AUTOMOTIVE ASSEMBLY LINE FIXTURES AND MATERIAL.**

Works on principle of inertia. Inertia is the same principle used in car safety belt systems. Drop-Stops® are used as a back-up device to the Bal-Trol®. Load arrestors' spring tensioned cable is connected to the load. The device senses a fall when connected objects fall and speeds exceed the lock-on rate.

**ADDITIONAL FEATURES OF DROP-STOPS®:**

- Shock Absorbing Systems
- Portable
- Brake Indicator Button
- Self Retracting Steel Cable
- Sturdy Rigid Design
- OSHA Approved

*We Strongly Recommend The Use Of Drop-Stop® On All Overhead Load Applications. Capacities From 300 Lbs. To 3,300 Lbs.\* Other Models Available, Consult Factory.*



**D20-300 (hook style varies)**



**D23-3300**



**D17-1100**

MODEL NUMBER	CABLE LENGTH FT.	LOAD CAPACITY LBS.	SPEED TO ACTIVATE BRAKING FT./SEC.	STOP DISTANCE TO ACTIVATE FEET (MAX.)	BLOCK O.A.L. LENGTH	BLOCK WIDTH	BLOCK DEPTH	MINIMUM ANCHORAGE POINT REQ./LBS.	BLOCK WEIGHT
D20-300	20'	75-300	4.9	2'	22"	3"	6.5"	2600	12
D23-300	23'	75-300	4.9	2.3'	23"	9"	5.2"	2600	22
D33-300	33'	75-300	4.9	2'	23"	9"	5.2"	2600	22
D40-300	40'	75-300	4.9	3'	23"	9"	5.2"	2600	23
D40-660	40'	75-660	1.65	2'	13.5"	8"	4.5"	3555	19
D50-300	50'	75-300	4.9	3'	23"	9"	5.2"	2600	23
D66-300	66'	75-300	4.9	3'	28.4"	11.5"	5.2"	2600	33
D100-300	100'	75-300	4.9	3'	28.4"	11.5"	6.0"	2600	46
D17-1100	17'	75-1100	1.65	2'	13.4"	8"	4.5"	6975	19
D23-1100F	23'	75-1100	3.0	3.3'	28.4"	11.5"	5.4"	5400	48
D50-1100F	50'	75-1100	3.0	3.3'	28.4"	11.5"	5.4"	2600	35
D23-3300	23'	75-3300	2.0	3.3'	28.4"	11.5"	6.0"	9000	48
D33-3300	33'	75-3300	2.0	3.3'	28.4"	11.5"	6.0"	9000	53

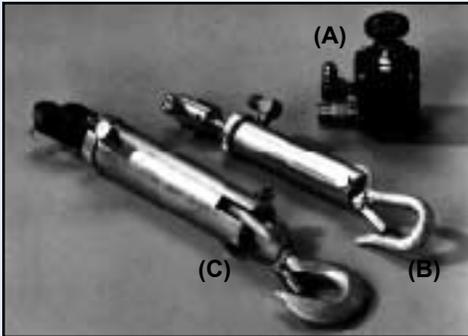
\* "P" = UTILIZES PULLEY TO ACHIEVE MAXIMUM LOAD RATING. PULLEY IS SUPPLIED WITH DROP-STOP SEE ILLUSTRATION.

**DUE TO THE NATURE OF THIS PRODUCT, IT IS RECOMMENDED THAT ALL DROP-STOPS® BE RETURNED FOR A YEARLY ROUTINE INSPECTION AND RECERTIFICATION. DROP STOPS ARE REPAIRED EXCLUSIVELY BY TRAINED REPRESENTATIVES.**

DROP STOP

**CONTROL PACKAGES**

Should application requirements change, most control packages can be easily interchanged. If unit was supplied with SPEED HANDLE but now application requires SENSITOUCH® specify **KIT 901-09000**. All changes should be accompanied with unit serial number.



**Balancer Package (A)**  
Model 909-30600  
Includes: Regulator with Fitting  
Models M-03, F-50, F-01, M-06/8 & M-06/6

**Balancer Package**  
Model 909-30601  
Models M-40, F-03 F-06, F-08, F-12, F-20, M-12/4 & M-12/6

**Servo Hose Assembly**  
(Not Pictured)  
Model 901-25000

**Small Servo (B)**  
(Control Only)  
Model 906-05010

**Large Servo (C)**  
(Control Only)  
Model 906-05101

**Balancer Package Kit**  
Model 901-31000  
Includes: Small Servo, Regulator & Hose, Models F-02, F-03, M-12, M-40, M-06/4  
(Cap. to 400 Lbs.)

**Balancer Package Kit**  
Model 906-31000  
Includes: Large Servo, Regulator & Hose, Models F-12, M-40  
(Cap. 400 - 1200 Lbs.)

**Small Speed Handle Control Kit**  
Model 901-02000  
Includes: Handle, Manifold, Hose,  
(Cap. up to 400 Lbs.)

Manifold Block  
Flow Control Valve



**Large Speed Handle Control Kit**  
Model 906-02000  
(Cap. 600 - 2000 Lbs.)

**Speed Handle Control Only**  
Model 901-07000  
**Small Hose Assembly (1/4")**  
Model 909-45000

**Large Hose Assembly (3/8")**  
Model 901-45000  
**Manifold Block**  
Model 101-05500  
**Flow Control Valve**  
Model 601-05500



Manifold Block  
Flow Control Valve

**Sensi-Touch® Control Kit**  
(Includes: Manifold, Hose & Controls)  
Model 901-09000

**Slim-Line Sensi-Touch® Control Kit**  
(Includes: Valves, Hose & Controls)  
Model 905-09000

**Sensi-Touch® Control Only**  
Model 901-06000

**Slim-Line Sensi-Touch® Control Only**  
Model 905-06000

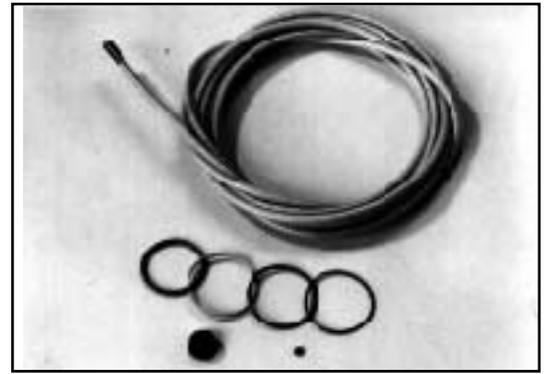
**Hose Assembly**  
(Clear 10 Ft.)  
Model 909-04000

**Manifold Block and Flow Control**  
Model 909-40300

**Manifold Block only**  
Model 101-05500

**Manifold Block for MH Units**  
Model 101-05501

**Flow Control Valve only**  
Model 601-05500



Pictured is a **CABLE ASSEMBLY AND SEAL KIT** for a Full Capacity Unit. These items are the only recommended replacement parts you need to have on hand to keep down-time to a minimum. Replacement Cable and Seal Kit can ship in a matter of days, same day shipment for emergencies. Your unit can easily be repaired in the field. **Always specify a complete model number and serial number.**



**GH4 and GH7 GATE HOOK**

All Bal-Trols are supplied with forged steel Safety Latch Type Hooks. Gate Hooks provide an additional measure of safety, extra but simple procedures are required in order to remove a load from the hook. Select **Model GH-4** for Full Capacity Models F-01 (100 Lbs.) through 06 (600 Lbs.), M-03, M-06 & M-12 **Model GH-7** for Models F-08 (800 Lbs.) through 12 (1200 Lbs.) and M-40.



**SAFETY CHAIN**

All Bal-Trols® are supplied with provisions to secure a safety chain from the Bal-Trol® to a secondary support system. The secondary support should be different from the support that the Bal-Trol® is mounted.

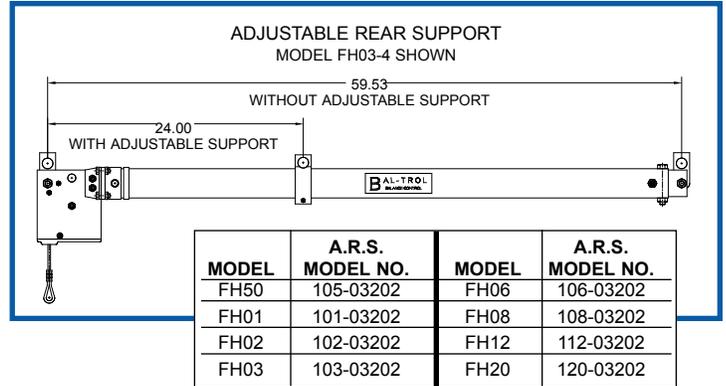
**All overhead equipment should be secured for safety reasons.** Selection is based on total weight of Bal-Trol® plus load(s).

**Model No. 500C** (500 Lbs. Capacity)

**Model No. 2000C** (2000 Lbs. Capacity)



**ADJUSTABLE REAR SUPPORT**  
Shortens mounting distance on horizontal units. In drawing, unit could be mounted in space of 2'. Approximately 35" of unit would suspend off back of arm.

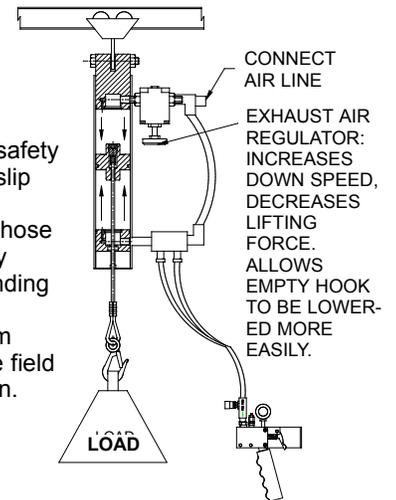


**JUMP-STOP OPTION  
MODEL 909-08000**

Developed as an additional safety feature, the JUMP-STOP OPTION offers extra protection to personnel should a load slip from a live hook (a load under pressure). Works on principle of inertia, similar to car safety belt system. Jump-Stop can be supplied on MH12, MV12, MH03 and MH06. Consult factory for other units. Patented.

**EXHAUST AIR  
REGULATOR - E.A.R.  
MODEL 909-09000**

Used in applications where "Float" (see pg. 7) is not required. Offers additional safety should a load accidentally slip from the hook. This option increases down speed for those applications lowering empty hooks or light loads. Depending on how valve is regulated, capacity can **decrease** from 10% to 100%. Units can be field retrofitted with E.A.R. option.

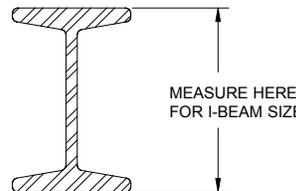
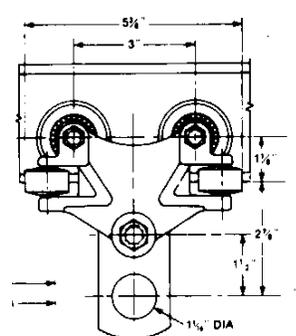


**DEMO KIT**

A trained Tri-Motion authorized representative or distributor is capable of demonstrating the benefits of Bal-Trol. Their demo kit can easily be set up in any office environment. They furnish hangers, Bal-Trol® and air tank which serves as a weight. Make arrangements to have your local representative or distributor show you the ergonomic and safety benefits of using Tri-Motion Air Balancers.

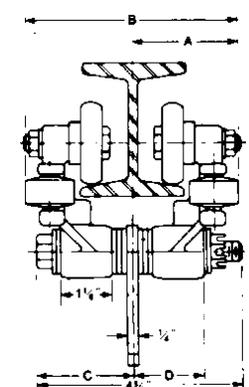


**500-T TROLLEYS**



VARIABLE DIMENSIONS				
BEAM SIZE	A	B	C	D
2-5/8"	2.06	4.12	2.06	1.25
3"	2.38	4.68	2.06	1.56
4"	2.50	5.00	2.06	1.75

Consult factory for other models



**OVERHANG CABLE**

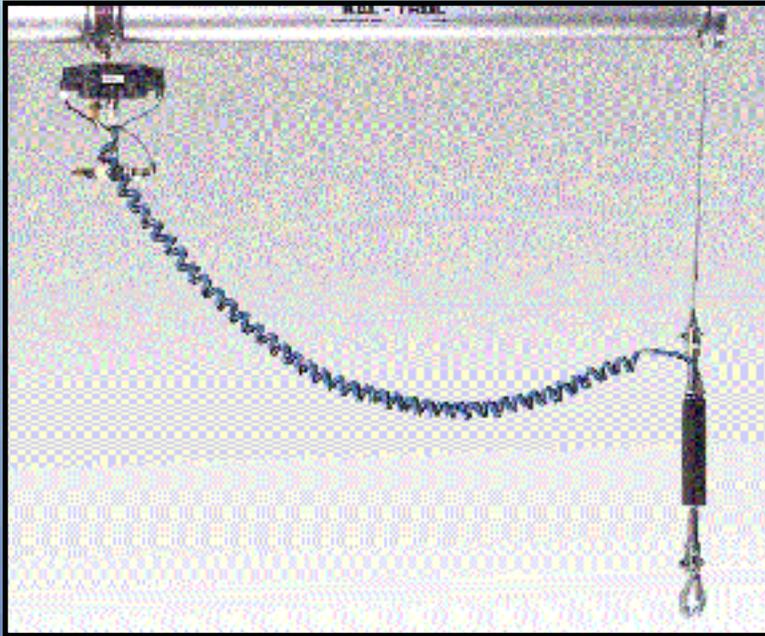
Attaches to retractable cable supplied on Bal-Trol® and comes with top shackle and safety hook. Does not retract into unit. Can be adjusted in the field. Generally supplied in 1 foot increments (see illustration & EXAMPLE ON PAGE 1).

**Model No. CA-4 - ALL CAPACITIES 600 LBS. & UNDER**  
**Model No. CA-7 - ALL CAPACITIES OVER 600 LBS.**

# SENSI-TOUCH® CONTROLS

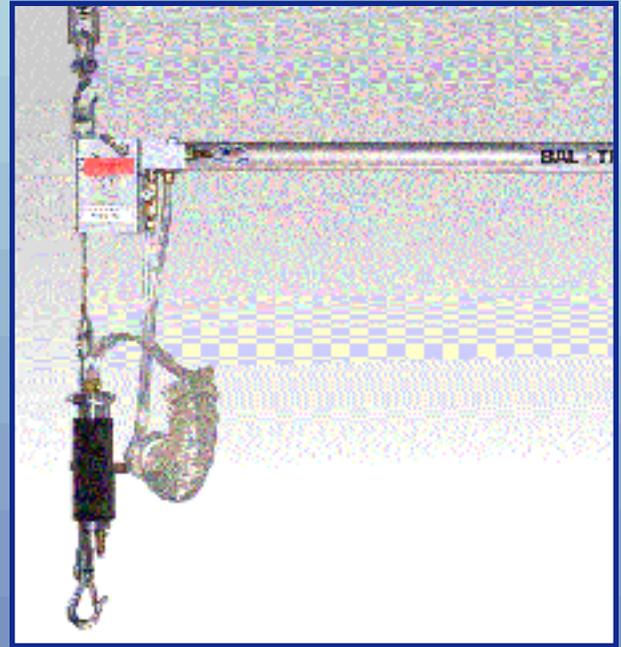


## COMPARE THE NEW SLIM-LINE & ORIGINAL SENSI-TOUCH® CONTROLS



**Slim-Line Sensi-Touch® (SL)**

- Small, fits comfortably in most any size hand.
- Activates by applying about 4 lbs. of force.
- Same load bearing capacity as the original Sensi-Touch®.
- Air flow is just as fast as the original Sensi-Touch®.
- Up & down speed adjustments located near the Bal-Trol®.
- Compatible with all sizes of Bal-Trol®.
- The load does not drop when the hoses are damaged or cut.
- Optional dual-acting control, for lowering empty hook easily.
- Operates at 45 PSI minimum.



**Sensi-Touch® (S)**

A thumb ring at the top of the Sensi-Touch® allows the operator to gradually vary the pressure with which he slides the barrel in either directions.

- Larger, fits into even the largest of hands.
- Activates by applying about 8 lbs. of force.
- Down speed adjustment conveniently located on the control.
- Option available for up speed on the control (adds 1.5").

