BAL-TROL®
BALANCE CONTROL

LEADERS IN AIR BALANCING HOISTS

BUILDING QUALITY PRODUCTS FOR 35 YEARS

Bal-Trol® Products are covered by U.S. Patent Nos. 6,595,104-B2 and 7,798,472-B2 as well as Swedish Patent No. 0201504-8 and other applications pending.

ISO 9001:2000 CERTIFICATION
NO. 5047 1494/B

TMI TRI-MOTION™ INDUSTRIES, INC.

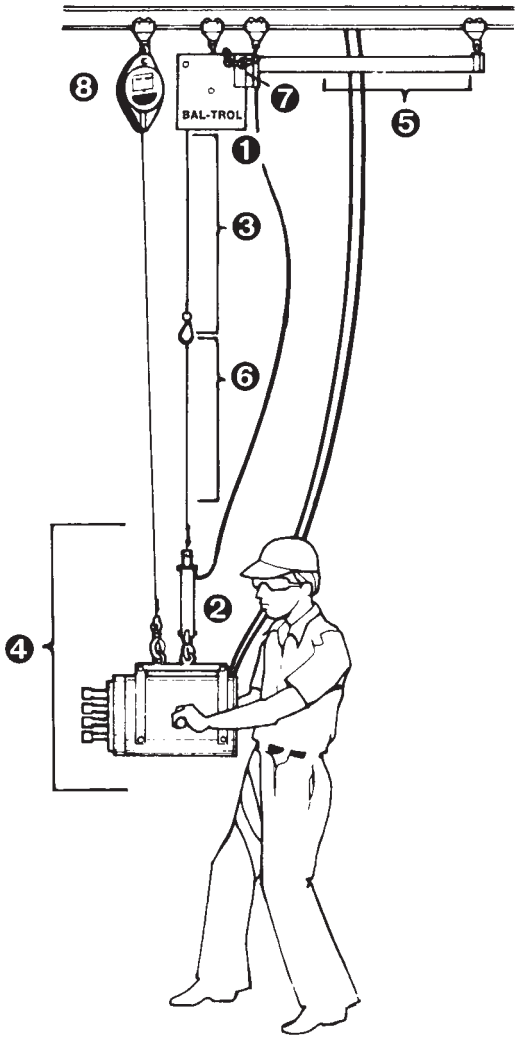
HOW TO ORDER A BAL-TROL®*

IMPORTANT CRITERIA:

1. **Determine weight to be lifted.**
   The weight to be lifted will determine what we call the "capacity" of the unit. For example, if you need to lift a 95 lb. load, you would want a 100 lb. capacity unit.
2. **Determine range of movement from the lowest point to the highest point.**
   The range of movement will determine what we call the "hook travel" of the unit. The hook travel and the capacity need will determine the Bal-Trol® you need.
3. **Determine ideal control.**
   Are you looking for lift assistance, e.g., "picking and placing"? For lift assistance check out the Sensi-Touch® and Speed Handle Controls.
   Are you looking to balance a load, i.e., rendering a load "weightless"? See our Balance Controls.
4. **How much room do you have for the Bal-Trol®?**
   No space constraint? Use Full Capacity Model.
   Tighter Space? Use Modular unit or New Pro-Air Bal-trol®.
5. **Should the Bal-Trol® be mounted horizontally or vertically?**
   Decision will depend on space configuration and user preference.

EXPLANATION OF TERMS FOR BAL-TROL®

1. **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.
2. **CONTROLS**
   Define application. Four control packages. See pages 3, 4, & 5.
3. **CABLE** Galvanized steel aircraft type.
4. **ACTIVE HOOK TRAVEL**
   Distance in feet load moves.
5. **STROKE (SPECIFIED IN INCHES)**
   Movement of piston in cylinder tube.
6. **OVERHANG CABLE** (See pg. 14)
   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 16.
8. **DROP STOP®** Protects Personnel & Product from falls. Strongly Recommended.



*** Bal-Trol® is a Registered Trademark of Tri-Motion Industries, Inc. Bal-Trol® Products are covered by US Patent Nos. 6,595,104 and 7,798,472-B2 as well as Swedish Patent No. 0201504-8 and other applications pending.**

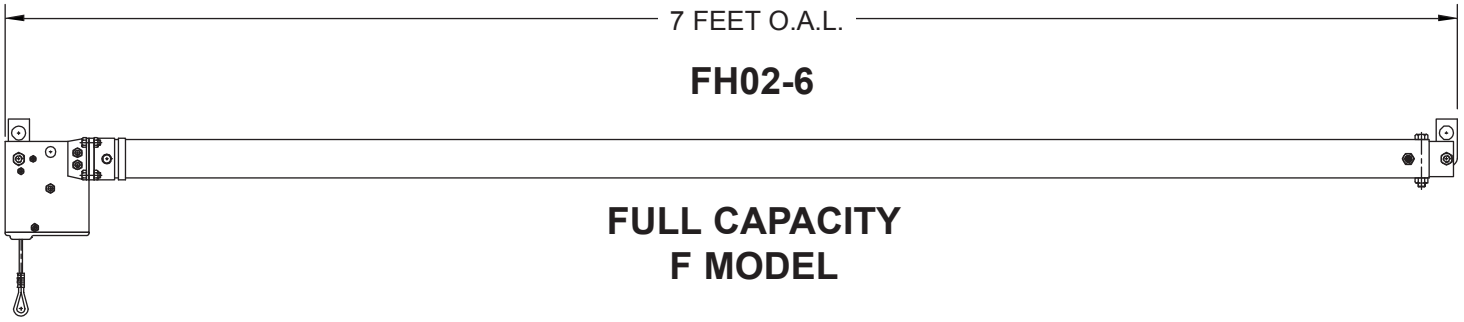
ISO 9001:2000 CERTIFICATION NO. 5047 1494/B

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

TABLE OF CONTENTS

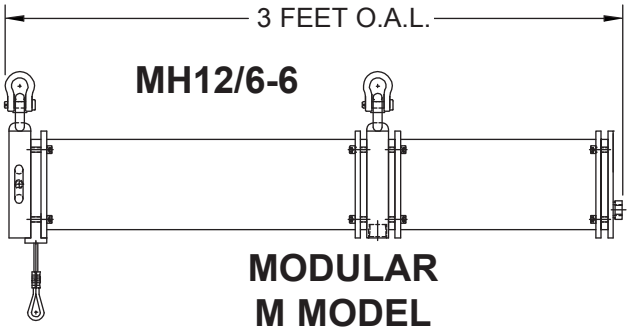
			PAGE
CONTROLS	S	Sensi-Touch® Control	3
	SL	Slim-Line Sensi-Touch® Control	3
	H	Speed Handle Control	4
	PH	Pro-Handle Control	4
	SH	Slim-Handle Control	4
	B	Balance Control	5
BAL-TROL®	P	Pro-Air • Ordering Specifications	7
	P	Pro-Air • Dimensions	8
	M	Modular Ratio • Ordering Specifications	9
	M	Modular Ratio • Dimensions	10
	F	Full Capacity • Ordering Specifications	11
	F	Full Capacity • Dimensions	12
DROP-STOP®	D	Drop-Stop® • Load Arrestors	13
	A	Control Kits & Accessories	14-16
ROBOTROL®	R	Robotrol®	17-18

COMPARING OVERALL LENGTHS



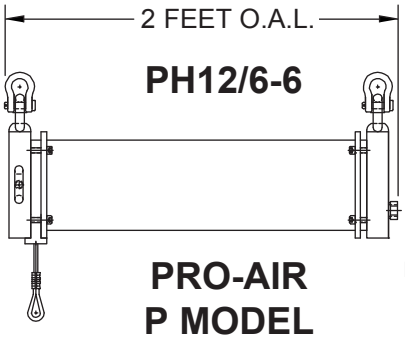
FH02-6

FULL CAPACITY
F MODEL



MH12/6-6

MODULAR
M MODEL



PH12/6-6

NEW

PRO-AIR
P MODEL

Patent No. 7,798,472-B2

SPACE SAVING

SAME CAPACITY (200 LBS.)
SAME TRAVEL (6 FEET)

All Bal-Trols® have a range of "Float" to allow for precision placement without damaging product or machine.

WHAT IS THE BAL-TROL®?

The Bal-trol® is a pneumatic (air-powered) device that can be used to balance or lift a load. For quieter, smoother and more maintenance-free operation, the Bal-Trol® should be considered in place of applications using chain hoists (air or electric) or other lifting methods — and especially in place of back-breaking manual lifting! The Bal-Trol® is a simple, cost-effective solution for workplace lifting injuries, especially from repetitive lifting. It can make the workplace more efficient by allowing a single worker to perform an operation that would otherwise require assistance in manually lifting a heavy load.

The Bal-Trol® is ideal for high-cycle applications, or where precise control is desired without overheating. The Bal-Trol® is simple to operate. It contains no expensive electronic components, and has no computer parts that can fail or require reprogramming. The Bal-Trol® is time-tested. It has been used for many years in a variety of applications, in diverse industries, all over the world, including automotive, brewing, military hardware, glass manufacturing, food product manufacturing and processing, to name just a few.

Bal-Trol® and an expanding range of controls have been manufactured in the United States for over 30 years by Tri-Motion Industries, Inc. We are proud of our commitment to quality and our durable product line. Some of the very first units we manufactured are still in service! Tri-Motion Industries, Inc. is ISO-certified and Bal-Trol® products are available through distributors throughout the United States, Canada and Western Europe.

SENSI-TOUCH® (S) (SL) CONTROLS

LOAD HOOK IS DIRECTLY UNDER CONTROL

THIS LIFT ASSIST IS USED FOR PICK AND PLACE APPLICATIONS. ENABLES OBJECTS TO BE LOADED AND UNLOADED. THE RANGE OF "FLOAT" ALLOWS FOR PRECISE PLACEMENT WITHOUT DAMAGING PRODUCT OR MACHINE.

- **Sensi-Touch® Controls have a range of FLOAT (or balance) of 4 to 6 inches. This allows the operator to move load within a couple of inches of drop off point, remove hands from the control so that the part can be maneuvered in place and then release.**
- **SPEED: These controls allow for variable speeds. Gentle pressure causes a slow gradual movement. Increased pressure causes faster movement. Smooth travel movement is consistent throughout travel.**
- **SPEED 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 the load is in place, it may be removed from the hook after releasing the air pressure in the unit!**

Model S *Original Sensi-Touch®*

OPERATION: A thumb ring at the top of the Controls provides better control on the upstroke. For the downstroke simply pull down on the control.

901-06000 - Small Sensi-Touch® Control ONLY.

901-06001 - Large Sensi-Touch® Control ONLY.

905-06000 - Slim-Line Sensi-Touch® Control ONLY.

See Control Packages on Page 14.

Model SL *Slim-Line Sensi-Touch®*

- **Larger grip diameter.**
- **Down speed adjustment conveniently located on the control.**
- **Compatible with all models of Bal-Trol®.**

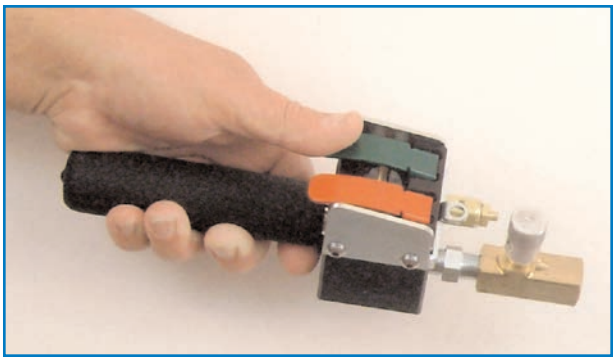
- **Small, fits comfortably in most any size hand.**
- **Same load bearing capacity and air flow speed as the Original Sensi-Touch®.**
- **Up & down speed adjustments located near the Bal-Trol®.**
- **Compatible with all sizes of Bal-Trol®.**
- **Operates at 45 PSI minimum.**

PENDANT HANDLE (H) (PH) (SH) CONTROLS

CONTROL REMOTE FROM LOAD

USED FOR LOADING & UNLOADING OBJECTS THAT ARE LARGE & SMALL IN SIZE. ALLOWS THE WORKER TO LIFT OBJECTS REMOTE FROM THE LOAD OR ON A FIXTURE. PENDANT HANDLE CONTROLS UTILIZE THUMB LEVERS FOR THE UP AND DOWN MOVEMENT.

- **FLOAT FOR PRECISE POSITIONING: The Speed Handle Controls have a range of float (or balance) of 4 to 6 inches. This allows the operator to move the load within a couple of inches of drop off point, then remove hands from the control handle so that the part can be maneuvered into place.**
- **SPEED: The Original Speed Handle and Pro 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.**
- **SPEED 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™ (PH)

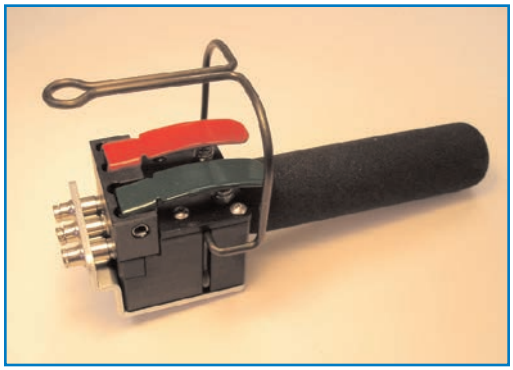
- **Small, weighs only 1.9 lbs.**
- **Proportional speed up & down: speed is low when the lever is pressed a little and higher when the lever is pressed all the way, similar to your car accelerator.**
- **Works well on Bal-trol® units up to 300 lbs. capacity or less.**
- **Easy to set the up and down speeds.**

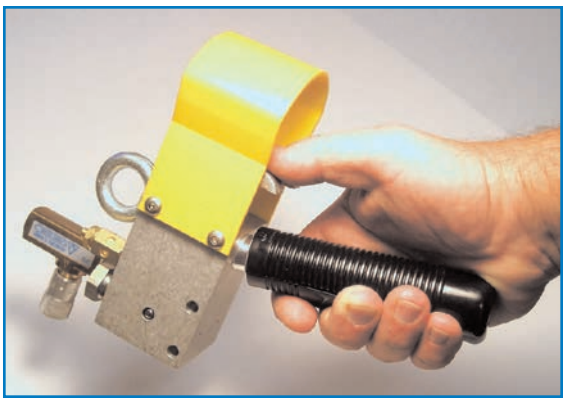
905-16100 Pro Handle ONLY.
See Pro Handle Control Packages on Page 15

SLIM HANDLE™ (SH)

- **Smaller, weighs only 1.4 lbs.**
- **Works well on any size Bal-trol® unit.**
- **Dual-acting option provides a power-assisted down mode, which makes it easier to lower an empty hook when there is no load present, use on 150 lbs. or more.**
- **This control works thru an air piloted control valve.**
- **Can be used on fixtures for clamping & unclamping.**

905-16000 Slim Handle ONLY.
See Slim Handle Control Packages on Page 15.





ORIGINAL SPEED HANDLE™ (H)

- **Select this Control for Loads over 300 Lb. capacity or greater.**
- **Worker Operates Lift Remote from Load.**
- **Up and Down speed controls are mounted on the Speed Handle.**
- **Control weighs 2.4 lbs.**

901-07000 - Original Speed Handle ONLY.
See Original Speed Handle Control Packages on Page 15.

BALANCE (B) CONTROL

FOR CONSTANT WEIGHT BALANCING APPLICATIONS

**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 AN OBJECT MOBILITY, MINIMIZE OPERATOR FATIGUE, AND PROTECT TOOLS FROM BEING DROPPED AND 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.

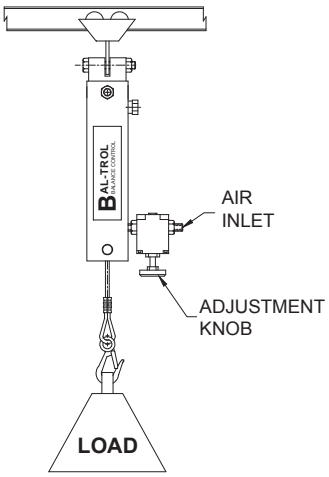
Chart reflects the range of capacity for units supplied with regulator.

909-30600 - 5-100 LBS. Regulator with Fitting ONLY. - NONTAPPED.

909-30601 - 5-100 LBS. Regulator Tapped For Servo Bleed Valve With Fitting for VERTICAL HOISTS.

909-30602 - 5-100 LBS. Regulator Tapped For Servo Bleed Valve.With Fitting For HORIZONTAL HOISTS.

See Page 14 for Balance Control Packages.

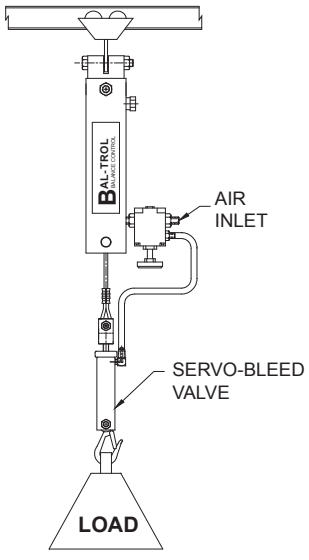


BALANCER WITH SERVO BLEED VALVE

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.

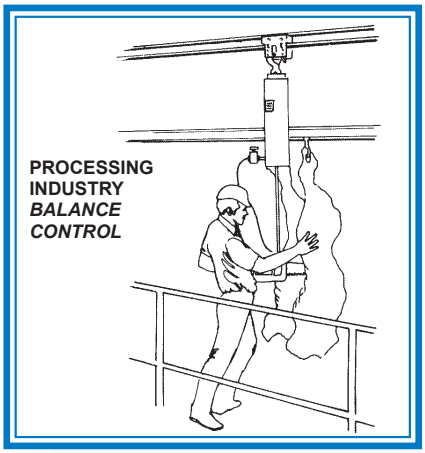


901-05010 - Small Servo Bleed Valve ONLY.

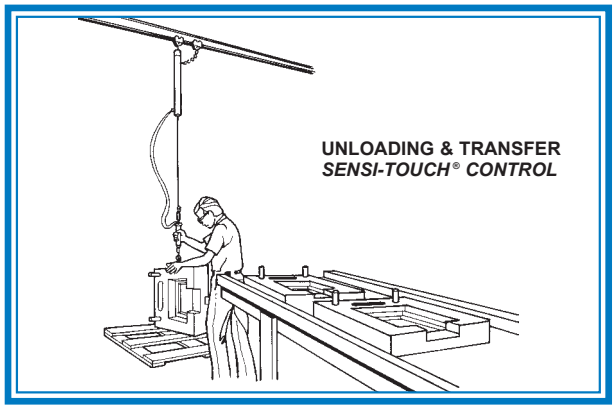
906-05101 - Large Servo Bleed Valve ONLY.

See Page 14 for Balance Control Packages.

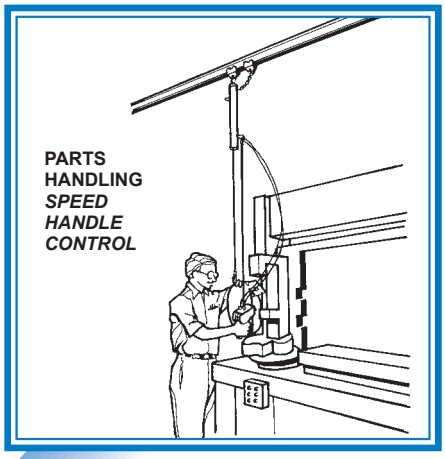
TYPICAL APPLICATIONS



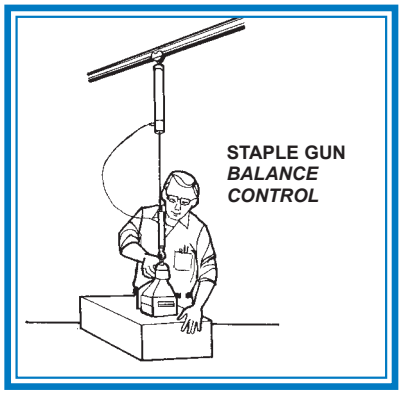
PROCESSING INDUSTRY *BALANCE CONTROL*



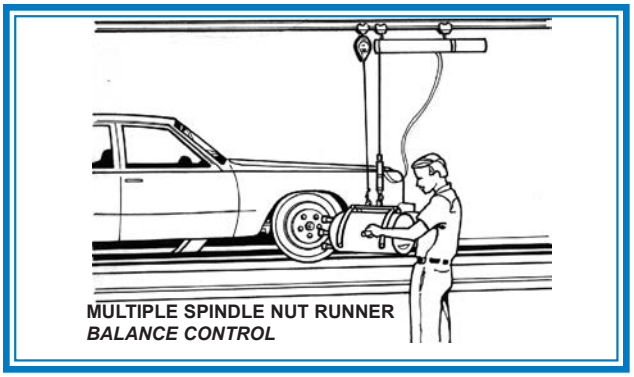
UNLOADING & TRANSFER *SENSI-TOUCH® CONTROL*



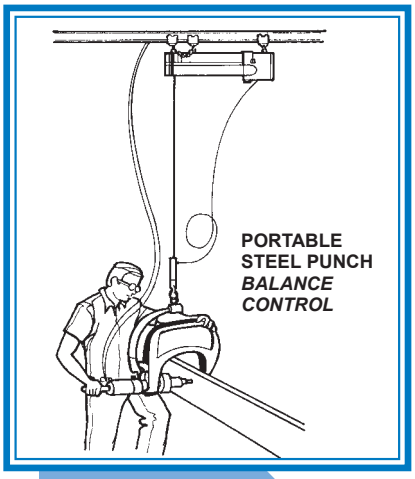
PARTS HANDLING *SPEED HANDLE CONTROL*



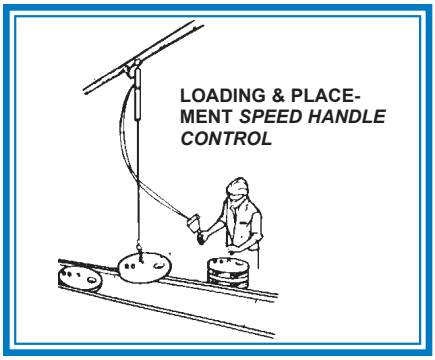
STAPLE GUN *BALANCE CONTROL*



MULTIPLE SPINDLE NUT RUNNER *BALANCE CONTROL*



PORTABLE STEEL PUNCH *BALANCE CONTROL*



LOADING & PLACE-MENT *SPEED HANDLE CONTROL*

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

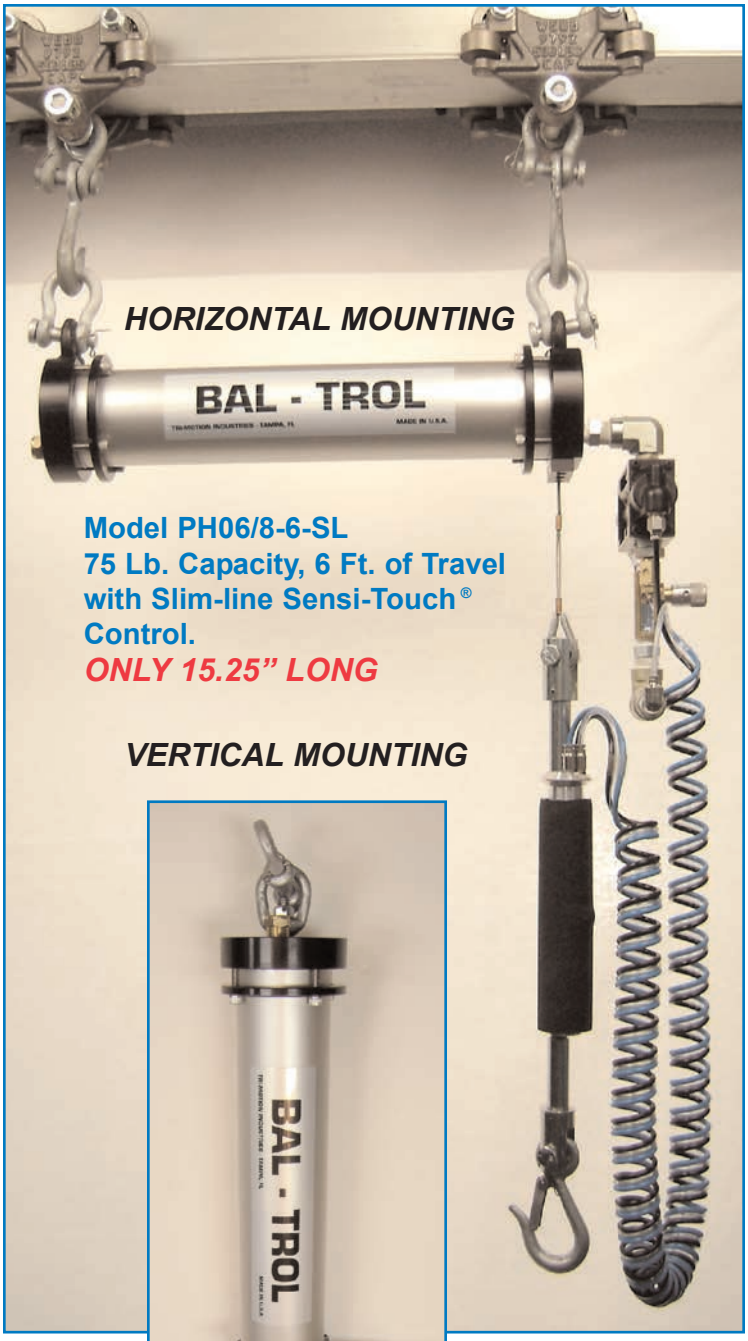
PRO-AIR UNITS - 3 MODELS

P-03, P-06 & P-12

BAL-TROL® IS THE COST EFFECTIVE SOLUTION FOR WORKPLACE LIFTING INJURIES.

TWO MOUNTING STYLES: HORIZONTAL AND VERTICAL

- **For All Repetitive Lifting Applications.**
- **Made to Order Travels from 1 Foot to 30 Feet or More.**
- **Stock Sizes Available.**
- **Smallest, Most Compact Bal-Trol®.**
- **Same Lifting Capacity as M & F Models.**
- **Simple to Operate.**
- **It Contains No Expensive Electronic Components or Computer Parts to Fail, Overheat, Have Moisture Damage or Require Reprogramming.**



LOAD CAPACITY			
RATIO	P-03 80PSI	P-06 80 PSI	P-12 80PSI
8:1	40 LBS.	75 LBS.	150 LBS.
6:1	60 LBS.	100 LBS.	200 LBS.
4:1	80 LBS.	125 LBS.	300 LBS.

Examples:

Model - PH12/6-7-H
Pro-Air, Horizontal Mtg., 200 lbs. cap., 7' travel, Speed Handle Control.

Model - PH06/8-4-SL
Pro-Air, Horizontal Mtg., 75 lbs. cap., 4' travel, Slim-Line Sensi-Touch® Control.

Model - PV03/6-6-B
Pro-Air, Vertical Mtg., 60 lbs. cap., 6' travel, Balance Control.

CHECK UNIT'S OVERALL LENGTH, CHECK YOUR HORIZONTAL & VERTICAL DIMENSIONS SEE PAGE 8.

ORDER PRO-AIR CAPACITY VERTICAL

P	V	0	3	/	6	—	6	—	B
MOUNTING V/H		MODEL			RATIO		TRAVEL (6 FT.)		BALANCE CONTROL

PV03/6-6-B Pro-Air Capacity, Vertical mounting, 60 lb. Cap. @ 80 PSI, 6 ft. travel with Balance Control.

Pro-Air units are covered by U.S. Patent No. 7,798,472-B2. Also shown, the Slim-Line Sensi-Touch® is covered by U.S. Patent No. 6,595,104-B2 and Swedish Patent No. 0201504-8.

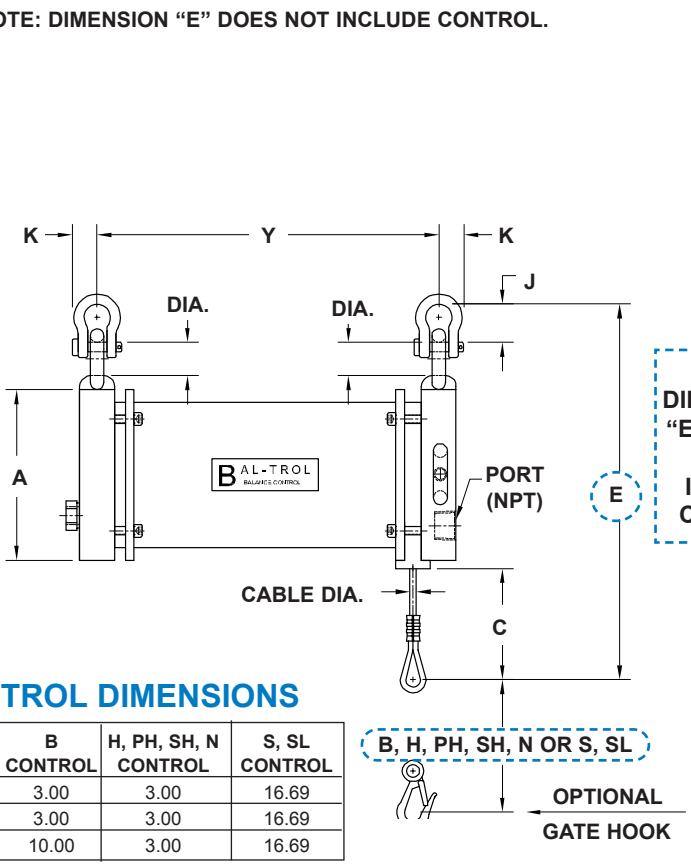
PRO-AIR UNITS

Patent No. 7,798,472

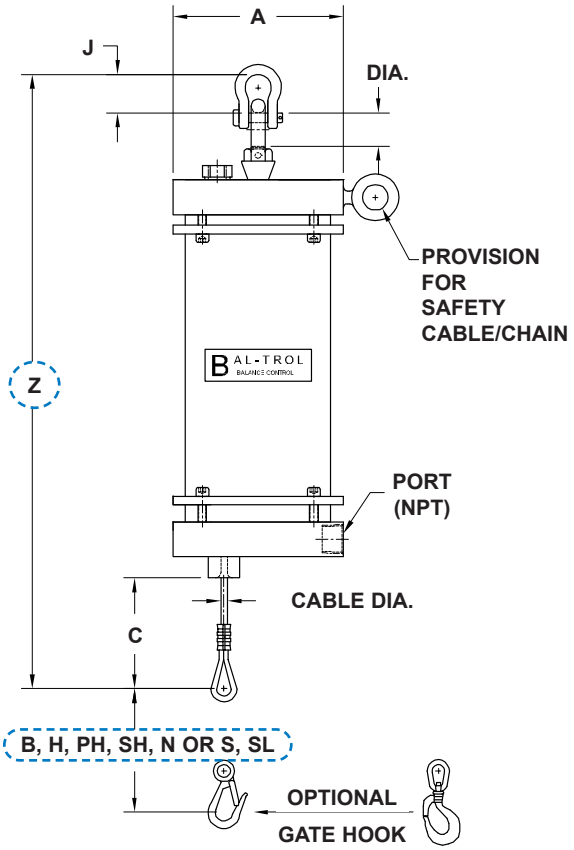
PH & PV - DIMENSIONS

MODEL	A	C	E	J	K	DIA.	CABLE DIA.	PORT (NPT)
03	3.63	4.50	10.54	1.50	.93	.78	ID: 1/16 OD: 3/32 (7 X 7)	1/4
06	4.50	4.50	11.64	1.50	.93	.78	ID: 3/32 OD: 1/8 (7 X 19)	3/8
12	6.25	5.50	14.24	1.50	.93	.97	ID: 1/8 OD: 3/16 (19 X 7)	3/8

NOTE: DIMENSION "E" DOES NOT INCLUDE CONTROL.



NOTE: DIMENSIONS "E" AND "Z" DO NOT INCLUDE CONTROL



CONTROL DIMENSIONS

MODEL	B CONTROL	H, PH, SH, N CONTROL	S, SL CONTROL
03	3.00	3.00	16.69
06	3.00	3.00	16.69
12	10.00	3.00	16.69

SEE CONTROLS PAGES 3-5

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

THE CHART BELOW INDICATES 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.

PRO-AIR MODEL OVERALL LENGTHS AT VARIOUS HOOK TRAVEL.

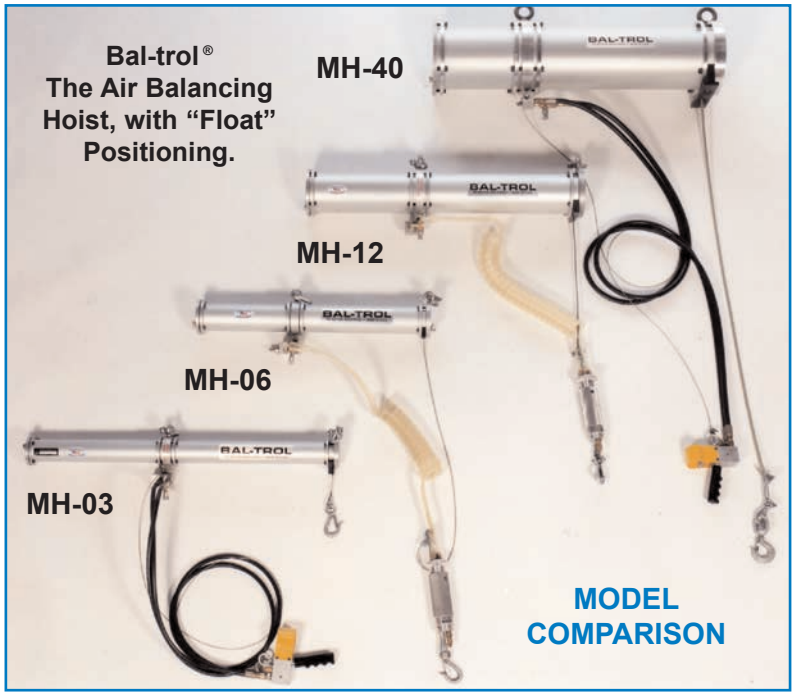
	40 LBS.		60 LBS.		80 LBS.		75 LBS.		100 LBS.		125 LBS.		150 LBS.		200 LBS.		300 LBS.	
	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.
TRAVEL	PH03/8	PV03/8	PH03/6	PV03/6	PH03/4	PV03/4	PH06/8	PV06/8	PH06/6	PV06/6	PH06/4	PV06/4	PH12/8	PV12/8	PH12/6	PV12/6	PH12/4	PV12/4
FEET	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1'	6.46	15.42	6.96	15.92	7.96	16.92	7.75	17.06	8.25	17.56	9.25	18.56	10.12	21.00	10.62	21.50	11.62	22.50
2'	7.96	16.92	8.96	17.92	10.96	19.92	9.25	18.56	10.25	19.56	12.25	21.56	11.62	22.50	12.62	23.50	14.62	25.50
3'	9.46	18.42	10.96	19.92	13.96	22.92	10.75	20.06	12.25	21.56	15.25	24.56	13.12	24.00	14.62	25.50	17.62	28.50
4'	10.96	19.92	12.96	21.92	16.96	25.92	12.25	21.56	14.25	23.56	18.25	27.56	14.62	25.50	16.62	27.50	20.62	31.50
5'	12.46	21.42	14.96	23.92	19.96	28.92	13.75	23.06	16.25	25.56	21.25	30.56	16.12	27.00	18.62	29.50	23.62	34.50
6'	13.96	22.92	16.96	25.92	22.96	31.92	15.25	24.56	18.25	27.56	24.25	33.56	17.62	28.50	20.62	31.50	26.62	37.50
7'	15.46	24.42	18.96	27.92	25.96	34.92	16.75	26.06	20.25	29.56	27.25	36.56	19.12	30.00	22.62	33.50	29.62	40.50
8'	16.96	25.92	20.96	29.92	28.96	37.92	18.25	27.56	22.25	31.56	30.25	39.56	20.62	31.50	24.62	35.50	32.62	43.50
9'	18.46	27.42	22.96	31.92	31.96	40.92	19.75	29.06	24.25	33.56	33.25	42.56	22.12	33.00	26.62	37.50	35.62	46.50
10'	19.96	28.92	24.96	33.92	34.96	43.92	21.25	30.56	26.25	35.56	36.25	45.56	23.62	34.50	28.62	39.50	38.62	49.50

M-MODULAR RATIO UNITS - 4 MODELS

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

TWO MOUNTING STYLES: HORIZONTAL AND VERTICAL

- **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.**
- **Ideal for all Types of Repetitive Pick and Place Applications.**
- **Greatly Reduces Operator Fatigue and Physical Stress Related Injuries.**



LOAD CAPACITY				
RATIO	M-03 80 PSI	M-06 80 PSI	M-12 80 PSI	M-40 100 PSI
8:1	40 LBS.	75 LBS.	150 LBS.	400 LBS.
6:1	60 LBS.	100 LBS.	200 LBS.	600 LBS.
4:1	80 LBS.	125 LBS.	300 LBS.	800 LBS.

ORDER MODULAR CAPACITY VERTICAL

M	V	0	3	/	6	—	6	—	B
MTG V/H		MODEL			RATIO		TRAVEL (6 FT.)		BALANCE CONTROL

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

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, Vertical Mtg. 600/8 = 75 lbs. cap., 4' travel, Slim-Line Sensi-Touch® Control.

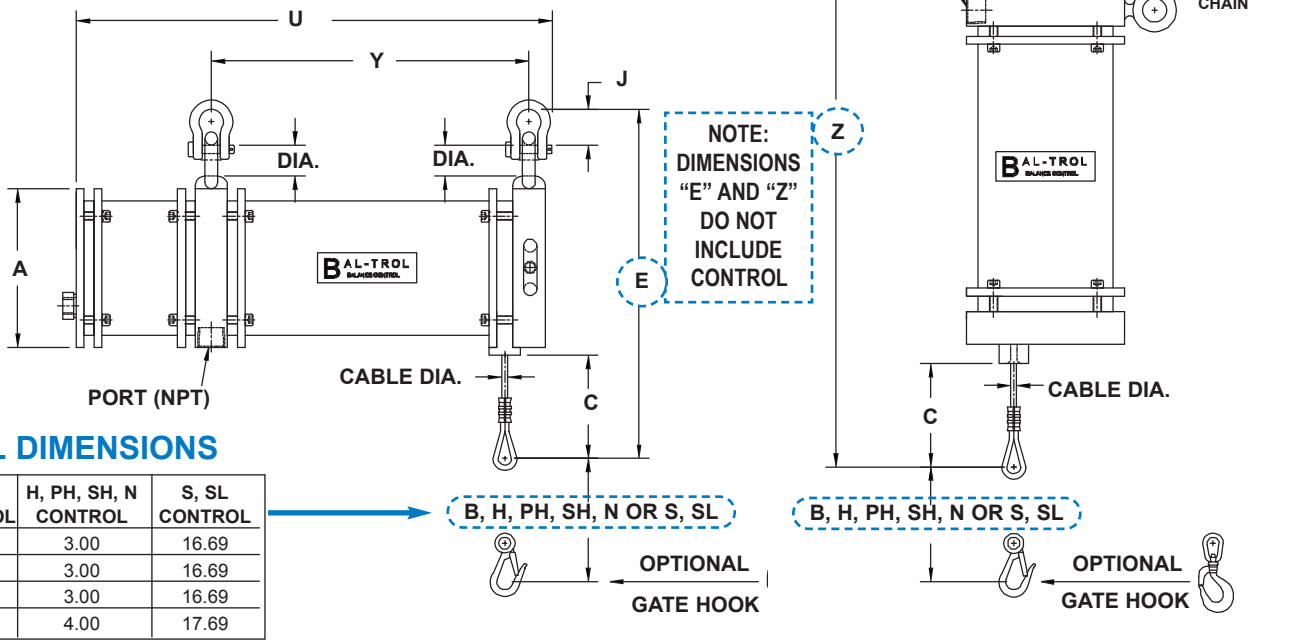
Model - MV03/6-6-B
Modular Ratio, Vertical Mtg. 300/6 = 50 lbs. cap., 6' travel, Balance Control.

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

MH & MV - HORIZONTAL AND VERTICAL DIMENSIONS

MODEL	A	C	E	J	DIA.	CABLE DIA.	PORT (NPT)
03	3.63	4.50	11.25	1.50	.78	ID: 1/16 OD: 3/32 (7 X 7)	1/4
06	4.50	4.50	11.38	1.50	.78	ID: 3/32 OD: 1/8 (7 X 19)	3/8
12	6.25	5.50	14.31	1.50	.97	ID: 1/8 OD: 3/16 (19 X 7)	3/8
40	10.00	6.50	19.00	N/A	1.50	ID: 1/4 OD: 3/8 (7 X 19)	1/2

NOTE: DIMENSION "E" DOES NOT INCLUDE CONTROL



CONTROL DIMENSIONS

MODEL	B CONTROL	H, PH, SH, N CONTROL	S, SL CONTROL
03	3.00	3.00	16.69
06	3.00	3.00	16.69
12	10.00	3.00	16.69
40	12.00	4.00	17.69

M - MODULAR CAPACITY
OVERALL LENGTHS AT VARIOUS HOOK TRAVEL

SEE CONTROLS PAGES 3-5

	40 LBS.			60 LBS.			80 LBS.			75 LBS.			100 LBS.			125 LBS.		
	HORIZ.		VERT.	HORIZ.		VERT.	HORIZ.		VERT.	HORIZ.		VERT.	HORIZ.		VERT.	HORIZ.		VERT.
TRAVEL	MH03/8		MV03/8	MH03/6		MV03/6	MH03/4		MV03/4	MH06/8		MV06/8	MH06/6		MV06/6	MH06/4		MV06/4
FEET	U	Y	Z	U	Y	Z	U	Y	Z	U	Y	Z	U	Y	Z	U	Y	Z
1'	11.54	6.88	18.50	12.54	7.38	19.50	14.54	8.38	21.50	14.03	9.19	21.16	15.03	9.69	22.16	17.03	10.69	24.16
2'	14.54	8.38	21.50	16.54	9.38	23.50	20.54	11.38	27.50	17.03	10.69	24.16	19.03	11.69	26.16	23.03	13.69	30.16
3'	17.54	9.88	24.50	20.54	11.38	27.50	26.54	14.38	33.50	20.03	12.19	27.16	23.03	13.69	30.16	29.03	16.69	36.16
4'	20.54	11.38	27.50	24.54	13.38	31.50	32.54	17.38	39.50	23.03	13.69	30.16	27.03	15.69	34.16	35.03	19.69	42.16
5'	23.54	12.88	30.50	28.54	15.38	35.50	38.54	20.38	45.50	26.03	15.19	33.16	31.03	17.69	38.16	41.03	22.69	48.16
6'	26.54	14.38	33.50	32.54	17.38	39.50	44.54	23.38	51.50	29.03	16.69	36.16	35.03	19.69	42.16	47.03	25.69	54.16
7'	29.54	15.88	36.50	36.54	19.38	43.50	50.54	26.38	57.50	32.03	18.19	39.16	39.03	21.69	46.16	53.03	28.69	60.16
8'	32.54	17.38	39.50	40.54	21.38	47.50	56.54	29.38	63.50	35.03	19.69	42.16	43.03	23.69	50.16	59.03	31.69	66.16
9'	35.54	18.88	42.50	44.54	23.38	51.50	62.54	32.38	69.50	38.03	21.19	45.16	47.03	25.69	54.16	65.03	34.69	72.16
10'	38.54	20.38	45.50	48.54	25.38	55.50	68.54	35.38	75.50	41.03	22.69	48.16	51.03	27.69	58.16	71.03	37.69	78.16

	150 LBS.			200 LBS.			300 LBS.			400 LBS.		600 LBS.		800 LBS.	
	HORIZ.		VERT.	HORIZ.		VERT.	HORIZ.		VERT.	HORIZ.		HORIZ.		HORIZ.	
TRAVEL	MH12/8		MV12/8	MH12/6		MV12/6	MH12/4		MV12/4	MH40/8		MH40/6		MH40/4	
FEET	U	Y	Z	U	Y	Z	U	Y	Z	U	Y	U	Y	U	Y
1'	15.30	10.31	24.32	16.30	10.81	25.32	18.30	11.81	27.32	25.15	18.68	26.15	19.18	28.15	20.18
2'	18.30	11.81	27.32	20.30	12.81	29.32	24.30	14.81	33.32	28.15	20.18	30.15	21.18	34.15	23.18
3'	21.30	13.31	30.32	24.30	14.81	33.32	30.30	17.81	39.32	31.15	21.68	34.15	23.18	40.15	26.18
4'	24.30	14.81	33.32	28.30	16.81	37.32	36.30	20.81	45.32	34.15	23.18	38.15	25.18	46.15	29.18
5'	27.30	16.31	36.32	32.30	18.81	41.32	42.30	23.81	51.32	37.15	24.68	42.15	27.18	52.15	32.18
6'	30.30	17.81	39.32	36.30	20.81	45.32	48.30	26.81	57.32	40.15	26.18	46.15	29.18	58.15	35.18
7'	33.30	19.31	42.32	40.30	22.81	49.32	54.30	29.81	63.32	43.15	27.68	50.15	31.18	64.15	38.18
8'	36.30	20.81	45.32	44.30	24.81	53.32	60.30	32.81	69.32	46.15	29.18	54.15	33.18	70.15	41.18
9'	39.30	22.31	48.32	48.30	26.81	57.32	66.30	35.81	75.32	49.15	30.68	58.15	35.18	76.15	44.18
10'	42.30	23.81	51.32	52.30	28.81	61.32	72.30	38.81	81.32	52.15	32.18	62.15	37.18	82.15	47.18

NOTE: DIMENSION "Z" DOES NOT INCLUDE CONTROL

F-FULL CAPACITY UNITS - 8 MODELS

TWO MOUNTING STYLES: HORIZONTAL AND VERTICAL

- **Full Capacity Units Offer Ergonomic Solutions For Employee Fatigue, Efficiency & Workplace Safety.**
- **They Offer A Wide Range Of Capacities: 10-1200 Lbs.**
- **Least Expensive - Fewest Moving Parts**
- **Cable & Seals Easily Changed In The Field**
- **Made To Order Travels From 1' to 15' Or More**
- ***CHECK OVERALL LENGTH BEFORE ORDERING - SEE MODULAR & PRO-AIR UNITS FOR SPACE SAVING.***

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

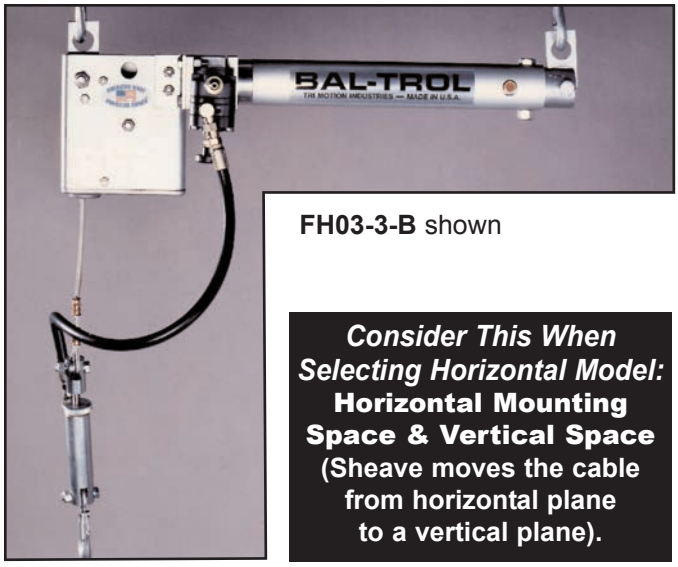
BAL-TROL® HORIZONTAL

BAL-TROL® VERTICAL

Check Your Mounting Space

Check For Obstacles

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

HOW TO ORDER - FIGURE (1) CAPACITY, (2) TRAVEL, (3) CONTROL OPTIONS.

Examples: **Model - FV02-4-S**
Full Cap., Vertlcal, 200 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 5)*.

CHECK YOUR HORIZONTAL & VERTICAL DIMENSIONS

ORDER FULL CAPACITY HORIZONTAL - FH08-3-S

F	H	0	8	—	3	—	S
FULL CAPACITY	HORIZ. MTG	800 LB. CAP.			TRAVEL 3 FT.		SENSI-TOUCH® CONTROL

WE RECOMMEND OUR SAFETY CHAIN & DROP STOP® LOAD ARRESTORS FOR SAFETY OF PERSONNEL AND PRODUCT.

FH & FV - HORIZONTAL AND VERTICAL DIMENSIONS

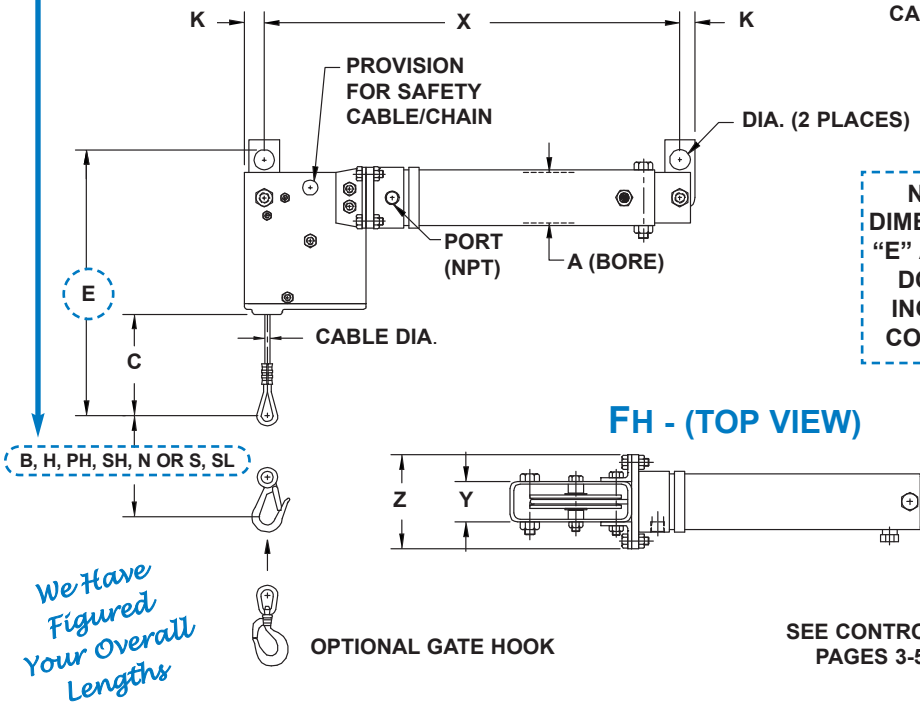
MODEL	A	C	E	K	U	Y	Z	THK.	DIA.	CABLE DIA.	PORT (NPT)
50	1.00	4.50	8.35	.62	4.06	1.50	2.00	.13	.75	ID: 1/16 OD: 3/32 (7 X 7)	1/8
01	1.50	4.50	11.91	.75	4.56	2.50	3.38	.18	1.00	ID: 1/8 OD: 3/16 (19 X 7)	3/8
02	2.00	5.00	13.13	.87	5.06	2.00	4.13	.18	1.00	ID: 5/32 OD: 1/4 (7 X 19)	3/8
03	2.50	5.00	13.13	.87	5.56	2.00	4.63	.18	1.00	ID: 5/32 OD: 1/4 (7 X 19)	3/8
06	3.25	5.50	16.04	1.32	6.31	2.00	5.50	.50	1.00	ID: 3/16 OD: 5/16 (7 X 19)	1/2
08	4.00	6.00	18.13	1.29	7.06	2.00	6.25	.50	1.00	ID: 1/4 OD: 3/8 (7 X 19)	1/2
12	5.00	6.00	17.63	1.41	8.06	4.00	7.63	.50	1.00	ID: 1/4 OD: 3/8 (7 X 19)	1/2

NOTE: DIMENSION "E" DOES NOT INCLUDE CONTROL

CONTROL DIMENSIONS

MODEL	B CONTROL	H, PH, SH, N CONTROL	S, SL CONTROL
50	3.00	3.00	16.69
01	3.00	3.00	16.69
02	10.00	3.00	16.69
03	10.00	3.00	16.69
06	12.50	4.00	17.69
08	12.50	4.00	17.69
12	12.50	4.00	17.69

FH HORIZONTAL DIMENSIONS



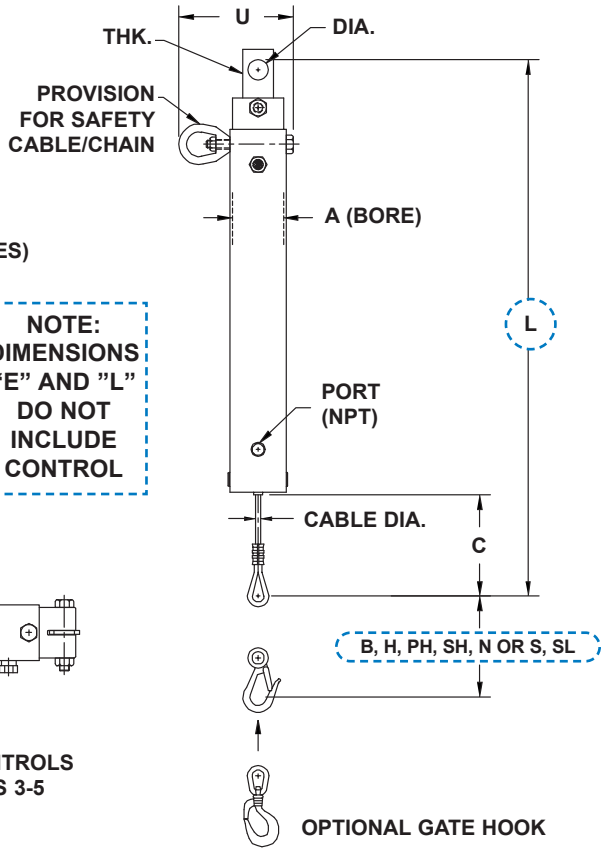
We Have Figured Your Overall Lengths

NOTE: DIMENSIONS "E" AND "L" DO NOT INCLUDE CONTROL

FH - (TOP VIEW)

SEE CONTROLS PAGES 3-5

FV - VERTICAL DIMENSIONS



F - FULL CAPACITY OVERALL LENGTHS AT VARIOUS HOOK TRAVEL

	50 LBS.		100 LBS.		200 LBS.		300 LBS.		600 LBS.		800 LBS.		1200 LBS.	
	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.
TRAVEL	FH50	FV50	FH01	FV01	FH02	FV02	FH03	FV03	FH06	FV06	FH08	FV08	FH12	FV12
FEET	X	L	X	L	X	L	X	L	X	L	X	L	X	L
1'	18.85	25.63	22.06	26.32	23.53	26.82	23.53	26.82	28.41	30.20	28.48	31.58	30.30	33.47
2'	30.85	37.63	34.06	38.32	35.53	38.82	35.53	38.82	40.41	42.20	40.48	43.58	42.30	45.47
3'	42.85	49.63	46.06	50.32	47.53	50.82	47.53	50.82	52.41	54.20	52.48	55.58	54.30	57.47
4'	54.85	61.63	58.06	62.32	59.53	62.82	59.53	62.82	64.41	66.20	64.48	67.58	66.30	69.47
5'	66.85	73.63	70.06	74.32	71.53	74.82	71.53	74.82	76.41	78.20	76.48	79.58	78.30	81.47
6'	78.85	85.63	82.06	86.32	83.53	86.82	83.53	86.82	88.41	90.20	88.48	91.58	90.30	93.47
7'	90.85	97.63	94.06	98.32	95.53	98.82	95.53	98.82	100.41	102.20	100.48	103.58	102.30	105.47
8'	102.85	109.63	106.06	110.32	107.53	110.82	107.53	110.82	112.41	114.20	112.48	115.58	114.30	117.47
9'	114.85	121.63	118.06	122.32	119.53	122.82	119.53	122.82	124.41	126.20	124.48	127.58	126.30	129.47
10'	126.85	133.63	130.06	134.32	131.53	134.82	131.53	134.82	136.41	138.20	136.48	139.58	138.30	141.47

DIMENSIONS GIVEN IN INCHES, NO CONTROLS OR ACCESSORIES INCLUDED

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**

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.

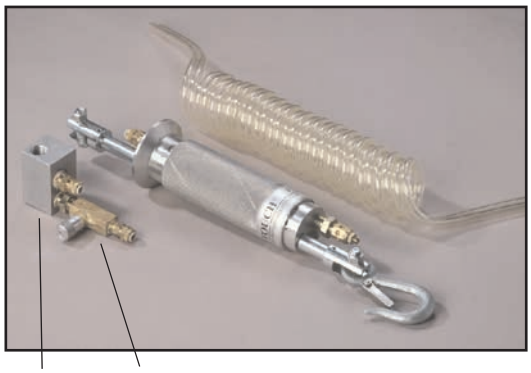
D20-300 (hook style varies)

D23-1100F

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
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	35
D50-1100F	50'	75-1100	3.0	3.3'	28.4"	11.5"	5.4"	5400	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

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 SHOULD BE SERVICED EXCLUSIVELY BY TRAINED REPRESENTATIVES.



Original Sensi-Touch® Control Package

(Includes: Manifold, Hose & Flow Control)

901-09000 **5-375 LBS.** for VERTICAL Hoists
901-09001 **5-375 LBS.** for HORIZONTAL Hoists
901-09002 **400-1200 LBS.** for VERTICAL Hoists
901-09003 **400-1200 LBS.** for HORIZONTAL Hoists

901-06000 **Original Sensi-Touch®** *Small Control Only.*
901-06001 **Original Sensi-Touch®** *Large Control Only.*
909-04000 **Hose Assembly** (Clear 10 Ft.)
909-04015 **Hose Assembly** (Clear 15 Ft.)

909-40300 **Manifold Block and Flow Control Horiz.**
101-05500 **Manifold Block for Vertical Hoists**
101-05501 **Manifold Block for Horizontal Hoists**
601-05500 **Flow Control only**

Slim-Line Sensi-Touch® Control Packages

(Includes: Valves, Hose & Control)

905-09000 **5-375 LBS. SINGLE ACTING** for VERTICAL Hoists
905-09001 **5-375 LBS. SINGLE ACTING** for HORIZONTAL Hoists
905-09010 **5-375 LBS. DUAL ACTING** for VERTICAL Hoists
905-09011 **5-375 LBS. DUAL ACTING** for HORIZONTAL Hoists

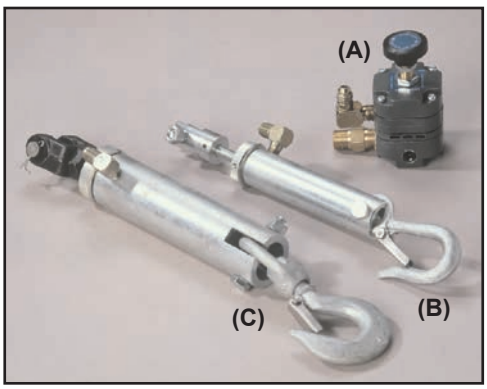
905-06000 **Slim-Line Sensi-Touch®** *Control Only.*
605-06006 **3-Bore Coiled Hose Assembly** (Clear 9 Ft.)

Single Acting Retrofit Valve Kit:

905-07000 **Valve Assembly** (No Slim-Line, No Hose)

Dual Acting Retrofit Valve Kits:

905-07020 Models FV01-FV03
905-07021 Models FH01-FH03
905-07022 Models FV06-FV12
905-07023 Models FH06-FH12, & MH40
905-07024 Models MV03-MV12, PV03-PV12
905-07025 Models MH03, PH03
905-07027 Models MH06-MH12, PH06-PH12



909-30600 **5-100 LBS. Balancer Control Package**
Includes: Regulator with Fitting. For Models F-50, F-01, M-03, M-06/8, M-06/6, P-03, P-06/8, P-06/6.

901-31000 **125-375 LBS. Balancer Control Package**
Includes: Small Servo, Regulator & Hose, For Models F-02, F-03, M-06/4, M-12, P-12, P-06/4.

906-31000 **400-800 LBS. Balancer Control Package**
Includes: Large Servo, Regulator & Hose, For Models F-06, F-08, F-12, M-40.

909-30600 Regulator with fitting Only, nontapped **(A)**
909-30601 Regulator tapped for Servo w/fitting for VERTICAL Hoists
909-30602 Regulator tapped for Servo w/fitting for HORIZONTAL Hoists
901-25000 **Servo Hose Assembly** *(Not Pictured)*
901-05010 **Small Servo (B)** *(Control Only)*
906-05101 **Large Servo (C)** *(Control Only)*

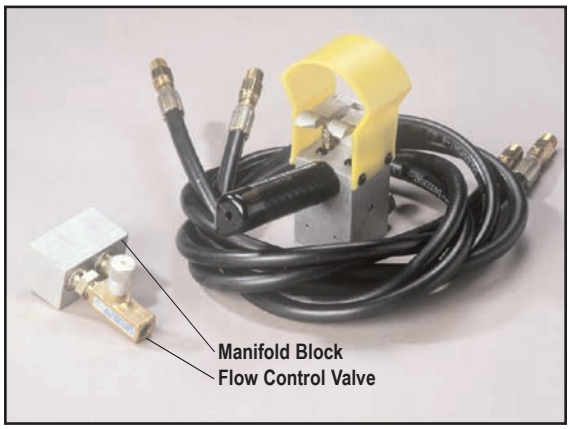
EXTRA, ADJUSTABLE, PRIMARY CABLE WITH CLAMPS

Customer specifies a non-standard amount of extra, adjustable, primary cable for any Bal-Trol® model. Useful when the Bal-Trol® is going to be mounted high above the work area. The extra cable ensures that the hook travel range reaches the place where the work takes place. The extra, adjustable, primary cable represents the amount of cable which does not retract into the unit (Refer to the"C" dimension on pages 8, 10, and 12). Extra cable is generally supplied in 1 foot increments and can be adjusted in the field using the included wire rope clamps.

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

Model No. CA-4 All Capacities 600 lbs. & *under*
Model No. CA-7 All Capacities *over* 600 lbs.



Small Original Speed Handle Control Package

901-02000 **5-375 LBS.** for VERTICAL Hoists
901-02001 **5-375 LBS.** for HORIZONTAL Hoists
Includes: Handle, Manifold, Hose,

Large Original Speed Handle Control Package

906-02000 **400-1200 LBS.** for VERTICAL Hoists
906-02001 **400-1200 LBS.** for HORIZONTAL Hoists
901-07000 **Original Speed Handle** *Control Only*
901-07001 **Large Original Speed Handle** *Control Only*

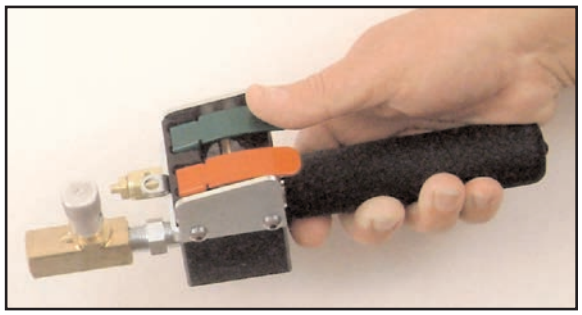
909-45000 **Small Hose Assembly (1/4")**
901-45000 **Large Hose Assembly (3/8")**
101-05508 **Manifold Block Universal**

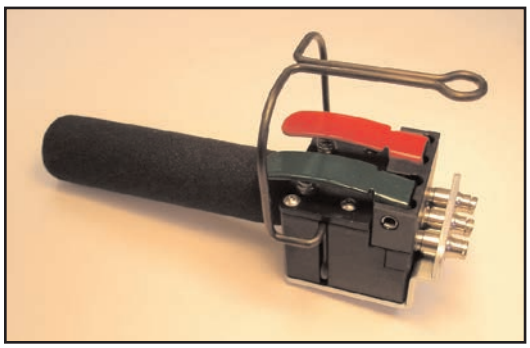
601-05503 **Flow Control Valve JN1 1/8" NPT**
601-05400 **Flow Control Valve JN2 1/4" NPT**
601-05500 **Flow Control Valve JN3 3/8" NPT**

Pro Handle Control Package

906-19100 **5-375 LBS. SINGLE ACTING**
905-16100 **Pro Handle** *Control Only*

909-45000 **Small Hose Assembly (1/4")**
101-05508 **Manifold Block Universal**
601-05400 **Flow Control Valve JN2 1/4" NPT**



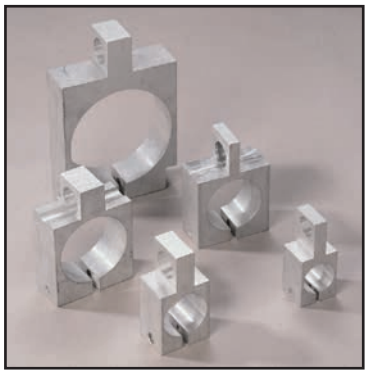


Slim Handle Control Package

905-19000 **5-1200 LBS. SINGLE ACTING** for VERTICAL Hoists
905-19001 **5-1200 LBS. SINGLE ACTING** for HORIZONTAL Hoists
905-19010 **5-1200 LBS. DUAL ACTING** for VERTICAL Hoists
905-19011 **5-1200 LBS. DUAL ACTING** for HORIZONTAL Hoists

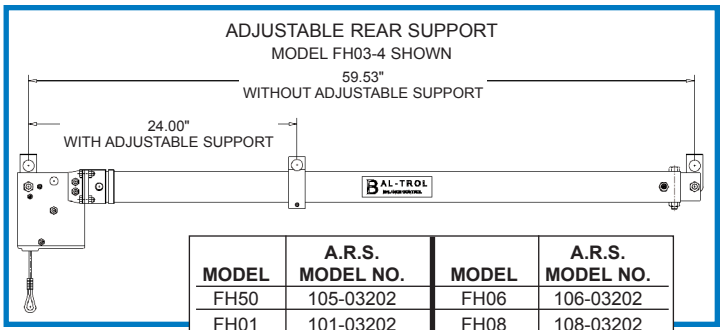
905-16000 **Slim Handle** *Control Only.*
905-07000 **Valve Assembly** (No Slim-Handle, No Hose)
605-06006 **3-Bore Coiled Hose Assembly** (Clear 9 Ft.)

Single Acting Retrofit Valve Kit same as Slim-Line Sensi-Touch® Control
Dual Acting Retrofit Valve Kits same as Slim-Line Sensi-Touch® Control



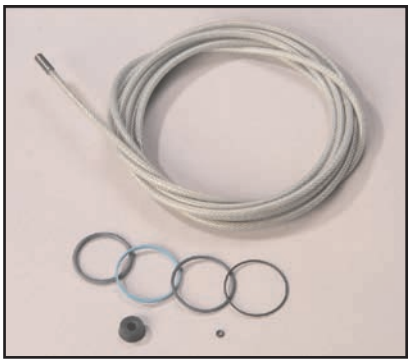
ADJUSTABLE REAR SUPPORT

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.



MODEL	A.R.S. MODEL NO.	MODEL	A.R.S. MODEL NO.
FH50	105-03202	FH06	106-03202
FH01	101-03202	FH08	108-03202
FH02	102-03202	FH12	112-03202
FH03	103-03202		

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 & serial number.

SWIVELS

The cables on the Bal-trol® units should not be allowed to twist repetitively. If the application requires that the load be rotated, then a swivel should be used to protect the cable from this type of spinning. In the case of the Sensi-Touch® control there is a set screw on the lower body of the control that must be tightened to prevent the shaft from turning within the control. This will prevent the shaft from rotating & twisting the cable.

Model No. GHNB-06 - Used on Sensi-Touch®
Model No. GHNB-07 - Used on Speed Handle
Model No. LAS-1 - Swivel

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 base on total weight of Bal-Trol® plus load(s).

Model No. 500C (500 Lbs. Capacity)
Model No. 2000C (2000 Lbs. Capacity)

DEMO KIT - 909-90000

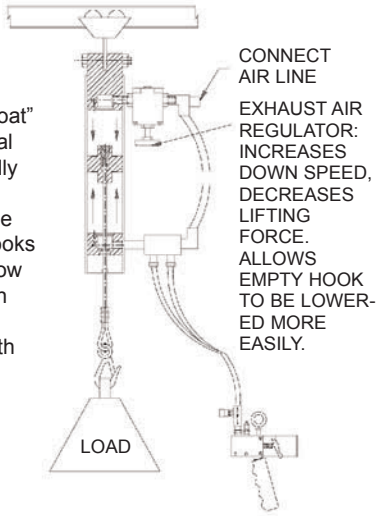
A trained Tri-Motion authorized representative or distributor is capable of demonstrating the benefits of Bal-Trol®. Their demo kit can easily be set up in any office environment. They furnish hangers, Bal-Trol® and air tank which serves as a weight. Make arrangements to have your local representative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

GH4 and GH7 GATE HOOK

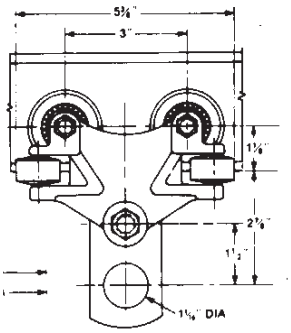
All Bal-Trols are supplied with forged steel Safety Latch Type Hooks. Gate Hooks provide an additional measure of safety, extra but simple procedures are required in order to remove a load from the hook. Select **Model GH-4** for Full Capacity Models F-01 (100 Lbs.) through 06 (600 Lbs.), M-03, M-06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

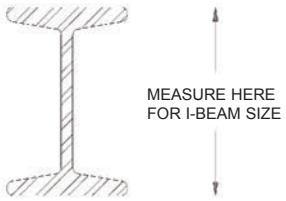
EXHAUST AIR REGULATOR - E.A.R. MODEL 909-09000

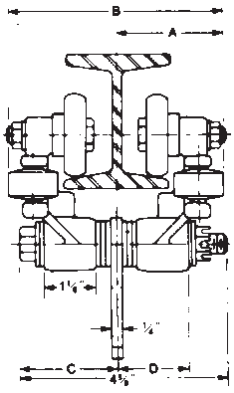
Used in applications where "Float" is not required. Offers additional safety should a load accidentally slip from the hook. This option increases down speed for those applications lowering empty hooks or light loads. Depending on how valve is regulated, capacity can ***decrease*** from 10% to 100%. Units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



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

BAL-TROL®
BALANCE CONTROL

NEW PRO-AIR
AIR BALANCING HOIST

NEW PRO-AIR HOIST - SEE PGS. 7 & 8.

NEW PRO HANDLE PENDANT CONTROL -
USE REMOTE FROM LOAD.
SEE PGS. 4 & 15.

SLIM-LINE SENSI-TOUCH® CONTROL -
INLINE CONTROL - LOAD HOOK DIRECTLY UNDER CONTROL.
SEE PGS. 3 & 14.

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

AMERICAN MADE
AMERICAN OWNED

TRI-MOTION INDUSTRIES, INC.
5688 WEST CRENSHAW ★ TAMPA, FL 33634
PH: (813) 884-6600 ★ FAX: (813) 884-6800
EMAIL: sales@trimotionindustries.com ★ Website: www.trimotionindustries.com

10/10 29138 5M $1.00