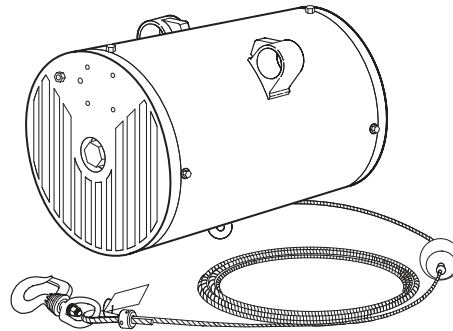


# Air Balancers

B, BA, EA, and ZA Series



(Dwg. MHP2176)

---

## Product Parts Information



**Save These Instructions**

When product life has expired, it is recommended to:

- disassemble the product
- degrease the product
- separate product parts by material for correct recycling

Product repair and maintenance should be conducted by an authorized service center.

Refer all communications to the nearest **Ingersoll Rand** office or distributor.

Manuals are available at [ingersollrand.com](http://ingersollrand.com)

**Table 1. Product Information Manuals**

<b>Publication</b>	<b>Part/Document Number</b>
Product Safety Information Manual	16598831
Product Information Manual	54072541
Product Maintenance Information Manual	16598856
Declaration of Conformity	47646667001

For additional information on related products order publication by the referenced Part/Document Number listed:

<b>Product</b>	<b>Part/Document Number</b>
Safety Information Manual - Z Rail	16600454
Product Information Manual - Z Rail	71341101
Maintenance Information Manual - Z Rail	16600470
Manipulator Arm Manual	MHD56162
IntelLIFT Electronic Control Manual	MHD56222
Jib Crane Manual	MHD56209

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# Basic Balancer 150 LB. (68 KG) Assembly

Figure 1. Exploded View - MHP1962

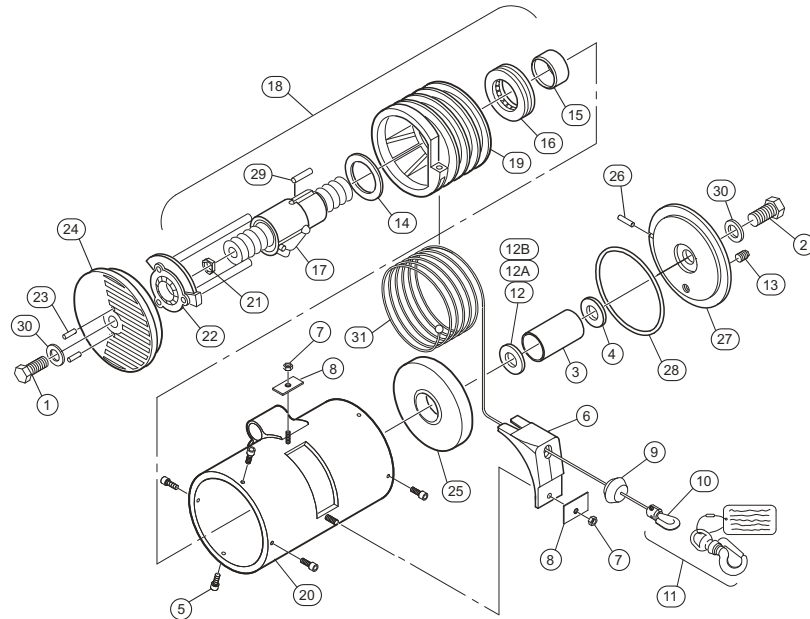


Table 2. Basic Balancer 150 LB. (68 KG) Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Ball Screw Bolt (End Cover)	1	ZHS10017
2	Ball Screw Bolt (End Cap)	1	ZHS10013
3	Ball Screw Cap	1	ZHS10046
(a) 4	Ball Screw Seal	1	10061
5	Screw	8	10071
6	Wire Rope Guide	1	ZHS10116
7	Nut	2	10124
8	Wire Rope Guide Plate	2	10125
9	Ball Stop Assembly	1	10165
(a) 10	Swaged Stop	1	10200
11	Accessory Kit	1	10208
12	0.005 in. (0.127 mm) Shim	(b)	10415
12A	0.010 in. (0.254 mm) Shim	(b)	10416
12B	0.025 in. (0.635 mm) Shim	(b)	10417
13	Pipe Plug 1/4 NPT	1	HSPPS-2
14	Ball Nut Washer	1	11076
15	Thrust Bearing Retainer	1	ZHS11081
16	Thrust Bearing	1	ZHS11091
(c) 17	Ball Screw Assembly	1	11112
18	Ball Screw and Reel Assembly	1	11514
19	Reel Assembly	1	11554
20	Housing Liner	1	12911
21	Retainer (Z - Brake)	1	13039
22	Z - Brake Assembly	1	ZHSEA0034

## Basic Balancer 150 LB. (68 KG) Assembly

**Table 2. Basic Balancer 150 LB. (68 KG) Assembly - Parts List (continued)**

Item No.	Part Description	Total Qty.	Part Number
23	Anti-Rotation Pin	2	13440
24	End Cover Assembly	1	13805
25	Piston Assembly	1	14502
26	End Cap Spring Pin	1	ZHS15037
27	End Cap Assembly	1	15515
(a) 28	O-Ring	1	15520
29	Ball Nut Dowel Pin	1	16058
30	Washer	1	74516
(a) 31	Wire Rope 20 ft (6 m)	1	10084-20
(d) 41	Capacity Label	1	10402
(d) 42	Name Plate	1	54033030

(a) Recommended Spare Parts Available in Kit 10590/ZHS10590.

(b) Quantity as required.

(c) Set of 64 Ball Bearings - Part Number 11012.

(d) Indicates Not Illustrated.

Refer to [Figure 5, p. 12](#) for Z-Brake Assembly.

# Basic Balancer 200 LB. (91 KG) Assembly

Figure 2. Exploded View - MHP1963

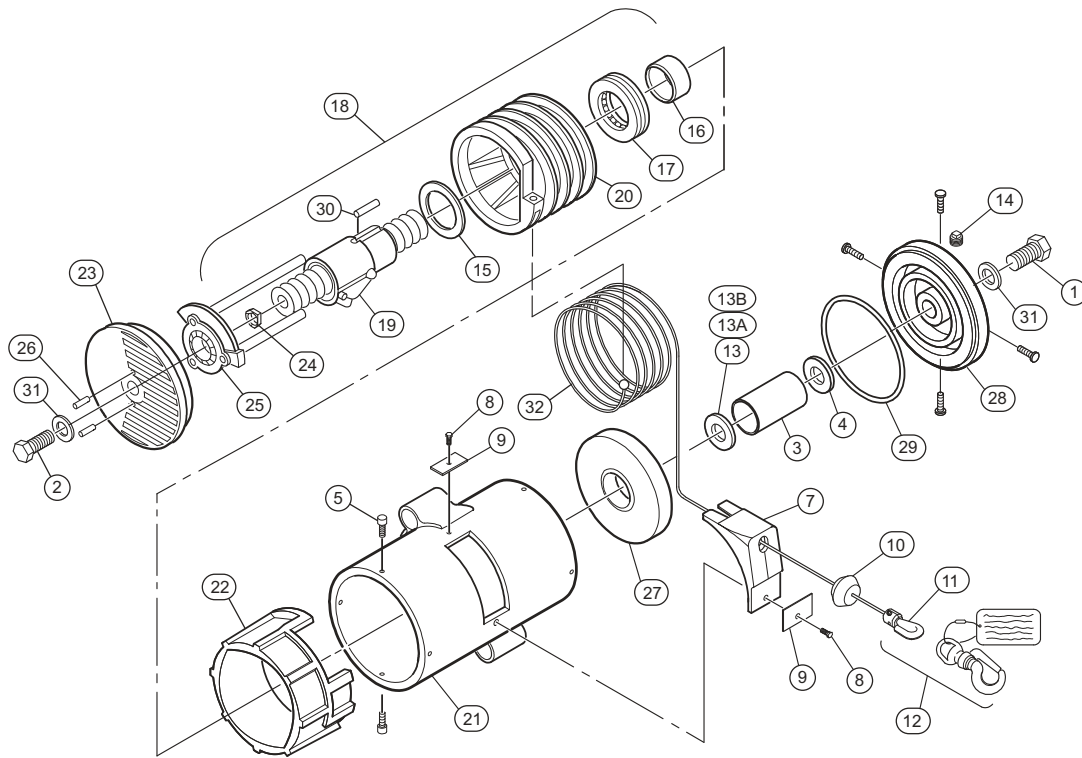


Table 3. Basic Balancer 200 LB. (91 KG) Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Ball Screw Bolt (End Cap)	1	ZHS10013
2	Ball Screw Bolt (End Cover)	1	ZHS10017
3	Ball Screw Cap	1	ZHS10044
(a) 4	Ball Screw Seal	1	10061
5	Screw	8	10072
7	Wire Rope Guide	1	ZHS10114
8	Screw	2	10120
9	Wire Rope Guide Plate	2	10125
10	Ball Stop Assembly	1	10165
(a) 11	Swaged Stop	1	10200
12	Accessory Kit	1	10208
13	0.005 in. (0.127 mm) Shim	(b)	10415
13A	0.010 in. (0.254 mm) Shim	(b)	10416
13B	0.025 in. (0.635 mm) Shim	(b)	10417
14	Pipe Plug 1/4 NPT	1	HSPPS-2
15	Ball Nut Washer	1	11076
16	Thrust Bearing Retainer	1	ZHS11081
17	Thrust Bearing	1	ZHS11091
18	Ball Screw and Reel Assembly	1	11102
(c) 19	Ball Screw Assembly	1	11112
20	Reel Assembly	1	11125

## Basic Balancer 200 LB. (91 KG) Assembly

**Table 3. Basic Balancer 200 LB. (91 KG) Assembly - Parts List (continued)**

Item No.	Part Description	Total Qty.	Part Number
21	Housing Assembly	1	ZHS12204
22	Housing Liner	1	12225
23	End Cover Assembly	1	13035
24	Retainer (Z-Brake)	1	13036
(d) 25	Z-Brake Assembly	1	ZHSEA0032
26	Anti-Rotation Pin	2	13440
27	Piston Assembly	1	14005
28	End Cap	1	15016
(a) 29	O-Ring	1	15020
30	Ball Nut Dowel Pin	1	16058
31	Washer	2	74516
(a) 32	Wire Rope 30 ft (91.1 m)	1	10084-30
(e) 41	Capacity Label	11	10403
(e) 42	Name Plate	1	54033048

(a) Recommended Spare Parts Available in Kit 10591.

(b) Quantity as Required.

(c) Set of 64 Ball Bearings - Part Number 11012.

(d) Refer to Dwg. MHP1960 on page 52 for Z-Brake Assembly.

(e) Indicates Not Illustrated.

# Basic Balancer 350 LB. (158 KG) Assembly

Figure 3. Exploded View - MHP1964

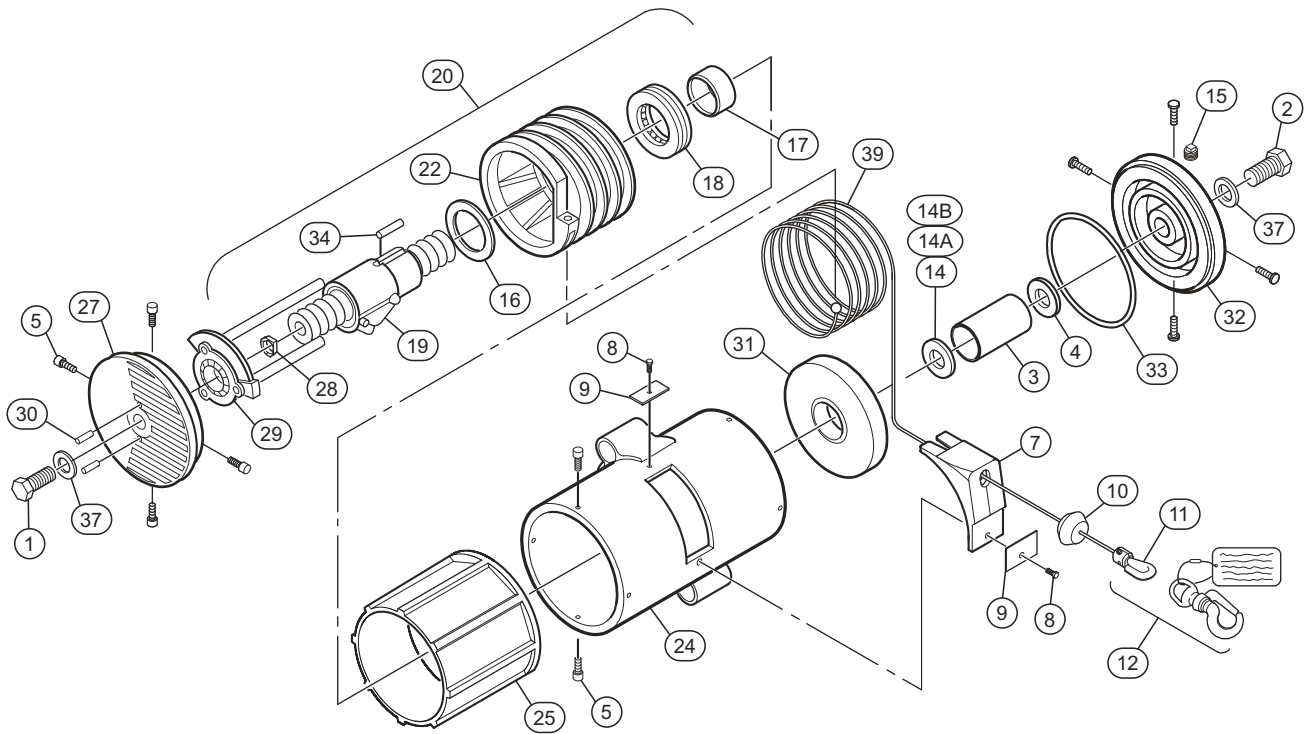


Table 4. Basic Balancer 350 LB. (158 KG) Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Ball Screw Bolt (End Cap)	1	ZHS10017
2	Ball Screw Bolt (End Cover)	1	ZHS10013
3	Ball Screw Cap	1	ZHS10048
(a) 4	Ball Screw Seal	1	10061
5	Screw	12	10072
7	Wire Rope Guide	1	10115
8	Screw	2	10120
9	Wire Rope Guide Plate	2	10125
10	Ball Stop Assembly	1	10165
(a) 11	Swaged Stop	1	10200
12	Accessory Kit	1	10208
14	0.005 in. (0.127 mm) Shim	(b)	10415
14A	0.010 in. (0.254 mm) Shim	(b)	10416
14B	0.025 in. (0.635 mm) Shim	(b)	10417
15	Pipe Plug 1/4 NPT	1	HSPPS-2
16	Ball Nut Washer	1	11076
17	Thrust Bearing Retainer	1	ZHS11081
18	Thrust Bearing	1	ZHS11091
(c) 19	Ball Screw Assembly	1	11112
20	Ball Screw and Reel Assembly	1	11514
22	Reel Assembly	1	11554
24	Housing Assembly	1	ZHS12204
25	Housing Liner	1	12240
27	End Cover Assembly	1	13038



## Basic Balancer 350 LB. (158 KG) Assembly

**Table 4. Basic Balancer 350 LB. (158 KG) Assembly - Parts List (continued)**

<b>Item No.</b>	<b>Part Description</b>	<b>Total Qty.</b>	<b>Part Number</b>
28	Retainer (Z-Brake)	1	13039
(d) 29	Z-Brake Assembly	1	ZHSEA0032
30	Anti-Rotation Pin	2	13440
31	Piston Assembly	1	14005
32	End Cap	1	15016
(a) 33	O-Ring	1	15020
34	Ball Nut Dowel Pin	1	16058
37	Washer	2	74516
(a) 39	Wire Rope 30 ft (9.1 m)	1	10084-30
(e) 41	Capacity Label	11	10580777
(e) 42	Name Plate	1	54033048

(a) Recommended Spare Parts Available in Kit 10591.

(b) Quantity as Required.

(c) Set of 64 Ball Bearings - Part Number 11012.

(d) Refer to Dwg. MHP1960 on page 52 for Z-Brake Assembly.

(e) Indicates Not Illustrated.

# Basic Balancer 500 LB. (227 KG) Assembly

Figure 4. Exploded View - MHP1965

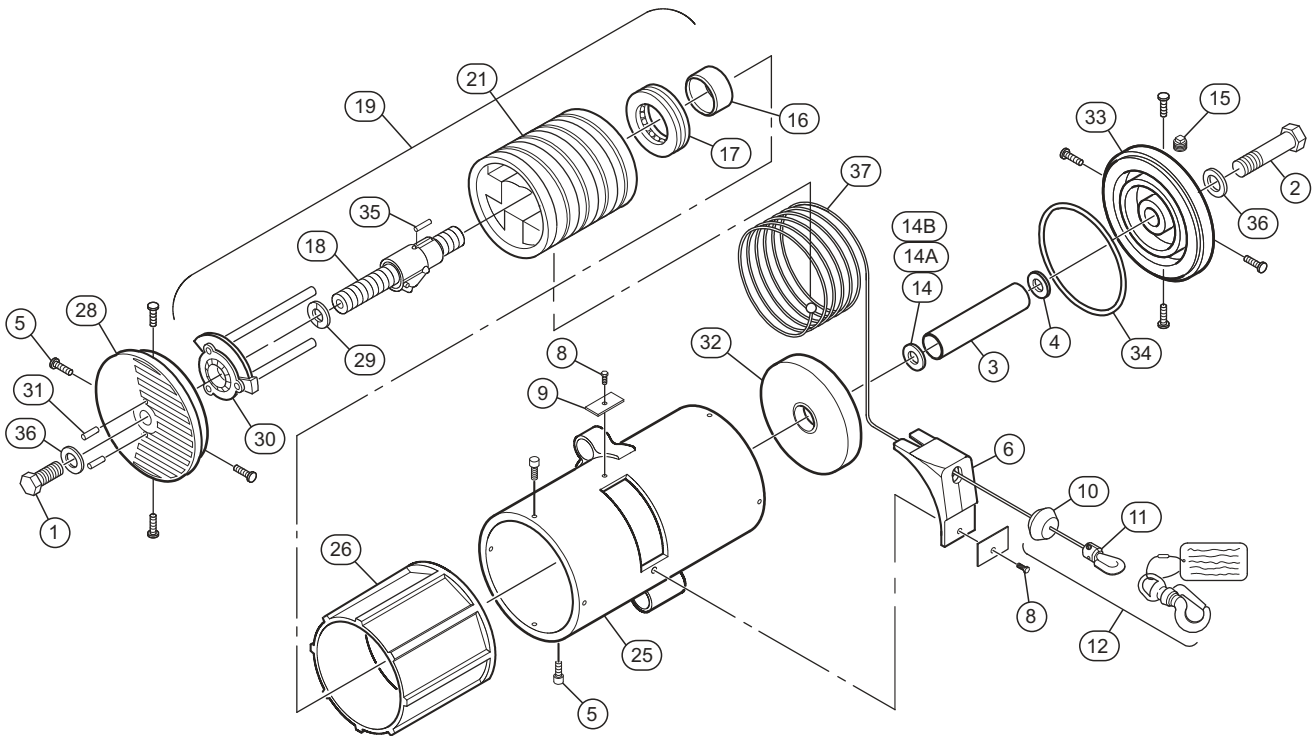


Table 5. Basic Balancer 500 LB. (227 KG) Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Ball Screw Bolt (End Cover)	1	ZHS10017
2	Ball Screw Bolt (End Cap)	1	ZHS10018
3	Ball Screw Cap	1	ZHS10047
(a) 4	Ball Screw Seal	1	10061
5	Screw	12	10072
7	Wire Rope Guide	1	ZHS10118
8	Screw	2	10120
9	Wire Rope Guide Plate	2	10125
10	Ball Stop Assembly	1	10165
(a) 11	Swaged Stop	1	10200
12	Accessory Kit	1	10208
14	0.005 in. (0.127 mm) Shim	(b)	10415
14A	0.010 in. (0.254 mm) Shim	(b)	10416
14B	0.025 in. (0.635 mm) Shim	(b)	10417
15	Pipe Plug 1/4 NPT	1	HSPPS-2
16	Thrust Bearing Retainer	1	ZHS11081
17	Thrust Bearing	1	ZHS11091
(c) 18	Ball Screw Assembly	1	11115
19	Ball Screw and Reel Assembly	1	11516
21	Reel Assembly	1	11546
25	Housing Assembly	1	12208
26	Housing Liner	1	12245
28	End Cover Assembly	1	13038
29	Retainer (Z-Brake)	1	13039

## Basic Balancer 500 LB. (227 KG) Assembly

**Table 5. Basic Balancer 500 LB. (227 KG) Assembly - Parts List (continued)**

<b>Item No.</b>	<b>Part Description</b>	<b>Total Qty.</b>	<b>Part Number</b>
(d) 30	Z-Brake Assembly	1	ZHSEA0038
31	Anti-Rotaion Pin	2	13440
32	Piston Assembly	1	14005
33	End Cap	1	15016
(a) 34	O-Ring	1	15020
35	Ball Nut Dowel Pin	1	16058
36	Washer	2	74516
(a) 37	Wire Rope 30 ft (9.1 m)	1	10084-30
(e) 41	Capacity Label	1	10398
(e) 42	Name Plate	1	54033055

(a) Recommended Spare Parts Available in Kit 10591.

(b) Quantity as Required.

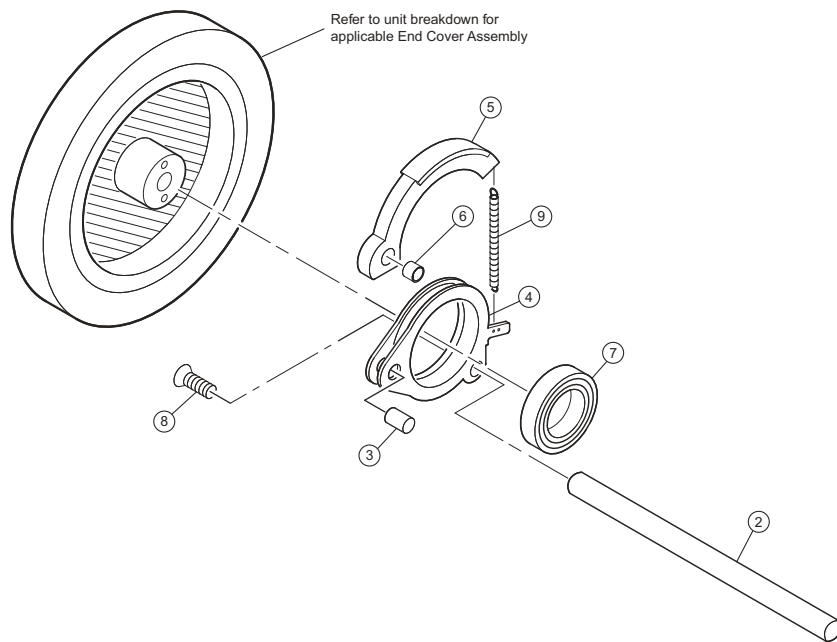
(c) Set of 84 Ball Bearings - Part Number 11115.

(d) Refer to Dwg. MHP1960 on page 52 for Z-Brake Assembly.

(e) Indicates Not Illustrated.

# Z-Brake 150 LB. (68 KG) Assembly

**Figure 5. Exploded View - MHP1959**

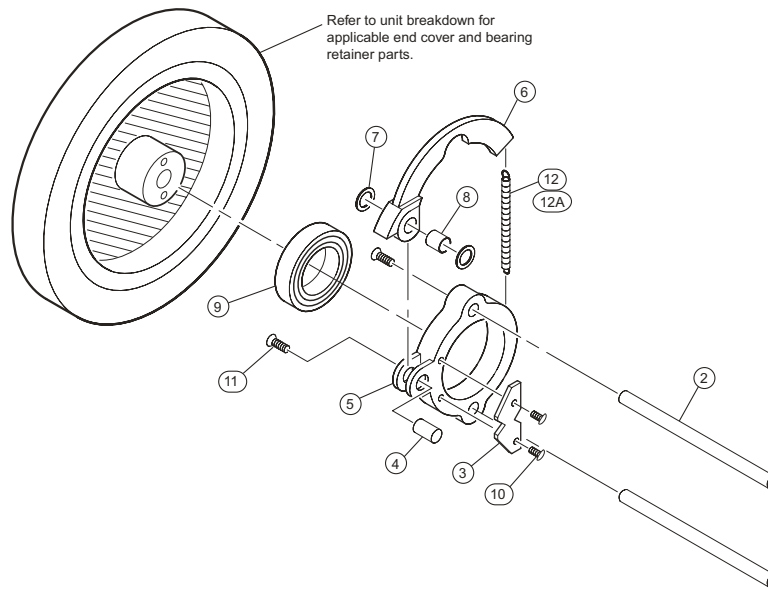


**Table 6. Z-Brake 150 LB. (68 KG) Assembly - Parts List**

Item No.	Part Description	Total Qty.	Part Number
---	Brake Assembly - 150 lb. (68 kg) Balancer	---	ZHSEA0034
2	Shaft	1	13112
3	Pivot Shaft	1	13113
4	Brake Rotor	1	13114
5	Brake Shoe	1	13116
6	Bushing	1	65054
7	Radial Bearing	1	65074
8	Screw	1	ZHS70515
9	Heavy Spring	1	47619817001

# Z-Brake 200/350/500 LB. (91/158/227 KG) Assembly

**Figure 6. Exploded View - MHP1960**



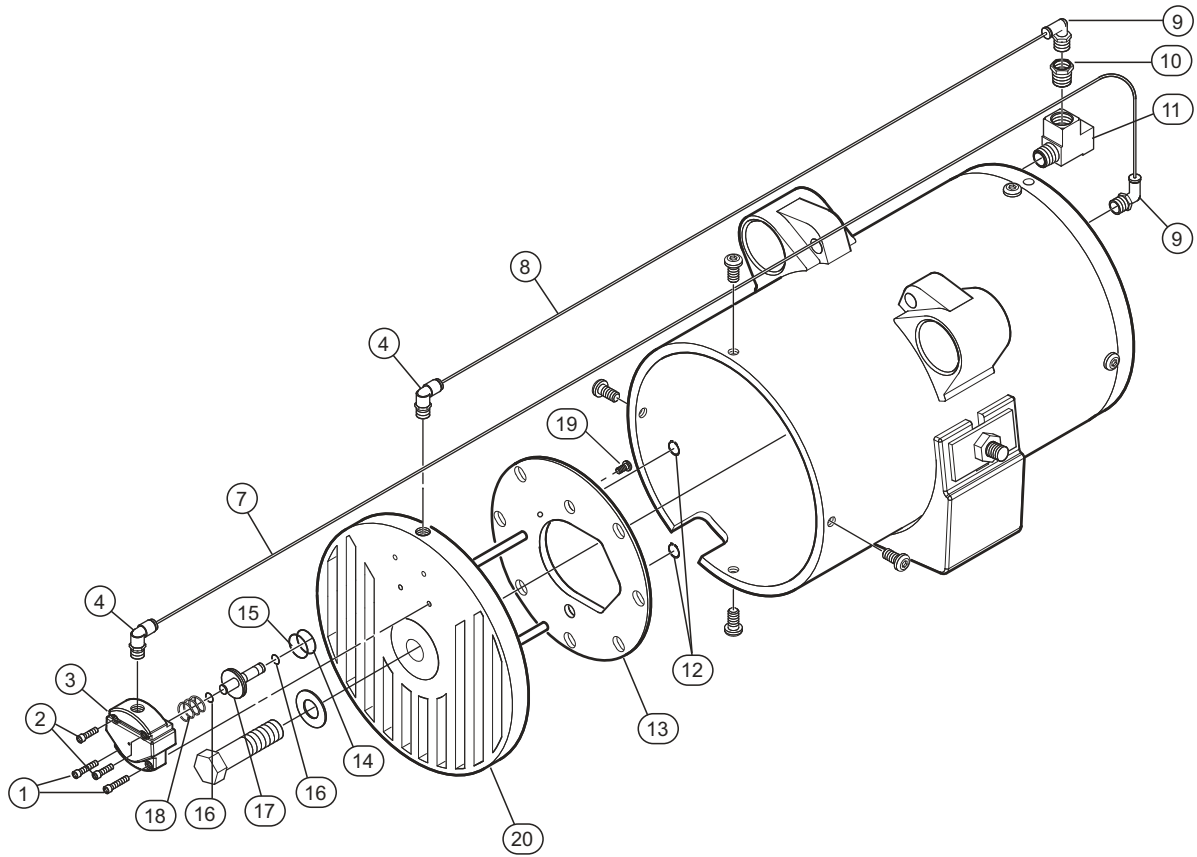
**Table 7. Z-Brake 200/350/500 LB. (91/158/227 KG) Assembly - Parts List**

Item No.	Part Description	Total Qty.	Part Number		
			ZHSEA0032 for Z-Brake Assembly 200 lb. (91 kg) Balancer	ZHSEA0032 for Z-Brake Assembly 350 lb. (158 kg) Balancer	ZHSEA0038 for Z-Brake Assembly 500 lb. (227 kg) Balancer
2	Shaft	2	13112		13142
3	Shaft Retainer	1	ZHS13122		
4	Pivot Shaft	1	ZHS13123		
5	Brake Rotor	1	ZHSEA0020		ZHSEA0037
6	Brake Shoe	1	13125		
7	Thrust Washer	2	65063		
8	Bushing	1	65073		
9	Radial Bearing	1	65074		
10	Screw	2	ZHS70257		
11	Screw	2	ZHS70515		
12	Spring	1	76517		
(a) 12A	Heavy Spring		76520		

(a) Replaces 76517 Brake Spring.

# Z-Stop 200/325/500 LB. (91/147/227 KG) Assembly

Figure 7. Exploded View - MHP1962



## Z-Stop 200/325/500 LB. (91/147/227 KG) Assembly

**Table 8. Z-Stop 200/325/500 LB. (91/147/227 KG) Assembly - Parts List**

Item No.	Part Description	Total Qty.	Part Number		
			13301 for Z-Stop Assembly 200 lb. (91 kg) Balancer	13311 for Z-Stop Assembly 325 lb. (147 kg) Balancer	13321 for Z-Stop Assembly 500 lb. (227 kg) Balancer
1	Capscrew	2	ZHS70255		
2	Capscrew	2	ZHS70254		
3	'Z' Stop Housing	1	13335		
4	Fitting, Elbow	3	ZHS93969		
7	Tube, 5/32 in. Red	2 ft	93960-R		
8	Tube, 5/32 in. Yellow	2 ft	93960-Y		
9	Fitting, Elbow	2	93970		
10	Fitting, Reducer	1	13502		
11	Fitting, Tee	1	ZHS10708		
12	Retaining Ring	2	99126	13039	99127
13	Engagement Plate	1	ZHSEA0035	ZHSEA0035	ZHSEA0036
14	O-Ring	1	13342		
15	O-Ring	1	13343		
16	Quad Ring	2	13344		
17	Engagement Pin	1	13338		
18	Spring	1	ZHS76522		
19	Screw	2	ZHSEA0029		
20	End Cover	1	13306	13316	

# Series ZA Basic Balancer Control Kit Assembly

Figure 8. Assembly Drawing - MHP1899

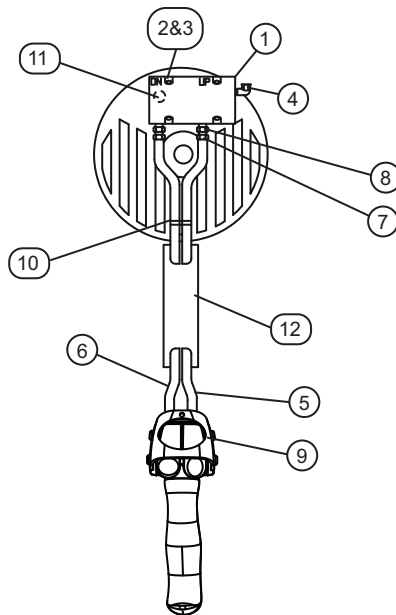


Table 9. Series ZA Basic Balancer Control Kit Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	Control Kit 10 ft (includes 1 - 12)	---	15300-10
	Control Kit 12 ft (includes 1 - 12)	---	15300-12
	Control Kit 14 ft (includes 1 - 12)	---	15300-14
	Control Kit 17 ft (includes 1 - 12)	---	15300-17
1	Manifold	1	ZHS15071
2	Lockwasher	4	15785
3	Mounting Screw	4	15779
4	Fitting, Elbow	1	10354
5	Hose (bulk)	(a)	BH6C
6	Hose (bulk)	(a)	10555-G
7	Fitting, Hose End	4	10560
8	Fitting, Adapter	4	10565
9	Pendant	1	80148539
10	Clamp	3	10548
11	O-Ring	1	15751
12	Warning Tag	1	10445
(b)	Control Kit Literature	1	10583458
(b)	Mounting Plate (15300-17)	1	18626
(b)	Screw (15300-17)	3	ZHS70423

(a) Quantity as required.

(b) Indicates Not Illustrated.



# Series ZA Manifold Assembly

Figure 9. Exploded View - MHP1904

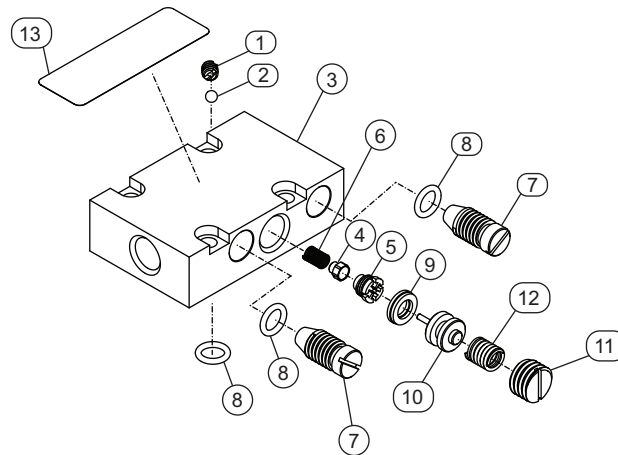


Table 10. Series ZA Manifold Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	Manifold (includes 1 - 13)	---	ZHS15071
(a) 1	Retainer	1	45655677
(a) 2	Ball, Check – ZA Manifold	1	ZHS15049
3	Body – ZA Manifold	1	15077
(a) 4	Valve Assembly	1	15802
(a) 5	Valve Seat	1	15803
(a) 6	Valve Spring	1	15804
7	Screw, Adjusting ZA Manifold	2	15080
(a) 8	O-Ring	3	15751
(a) 9	U-cup – ZA Manifold	1	15086
10	Piston – ZA Manifold	1	ZHS15083
11	Screw, Adjusting ZA Manifold	1	15081
12	Spring – ZA Manifold	1	15084
13	Name Plate	1	10297
(b)	Manifold Repair Kit (includes 1, 2, 4, 5, 6, 8, and 9)	1	ZHS15099

(a) Recommended Spare Parts.

(b) Indicates Not Illustrated.

# Series ZA Pendant Assembly

Figure 10. Exploded View - MHP2916

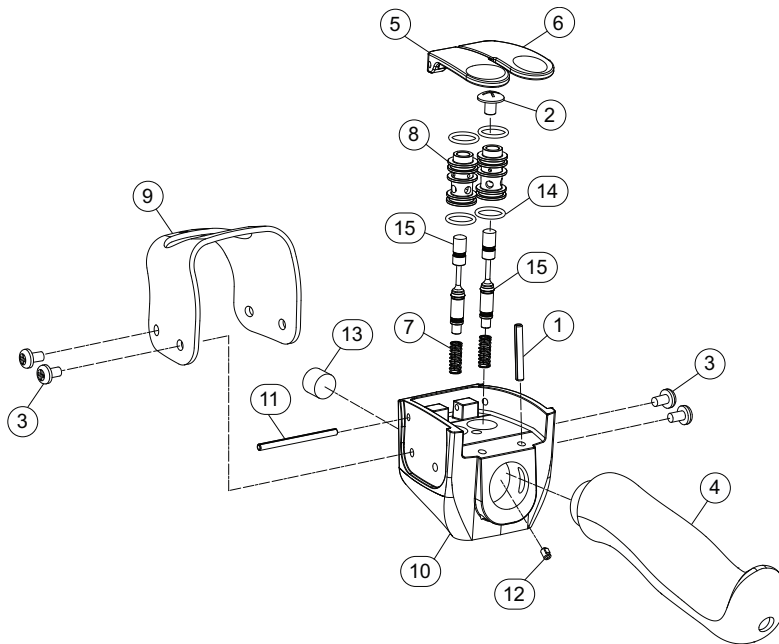


Table 11. Series ZA Pendant Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	Pendant (includes 1 - 15)	---	80148539
1	Pin, Roll	1	---
2	Capscrew	1	
3	Capscrew	4	
4	Handle Assembly	1	
(a) 5	Lever Down	1	
(a) 6	Lever Up	1	
(a) 7	Spring - Valve Body	1	
(a) 8	Valve - Spool Body	2	
9	Guard - Handle	1	
10	Pendant Housing	1	
11	Pin	1	
12	Setscrew	1	
13	Plug	1	
(a) 14	O-Ring	4	
(a) 15	Assembly, Full Flow Valve Spool	2	
(b)	Service Kit (includes 5, 6, 7, 8, 14, and 15)	1	80219975

(a) Recommended Spare Parts.

(b) Indicates Not Illustrated.

# Series ZA Control Handle (Ergonomic) Assembly

Figure 11. Exploded View - MHP1907

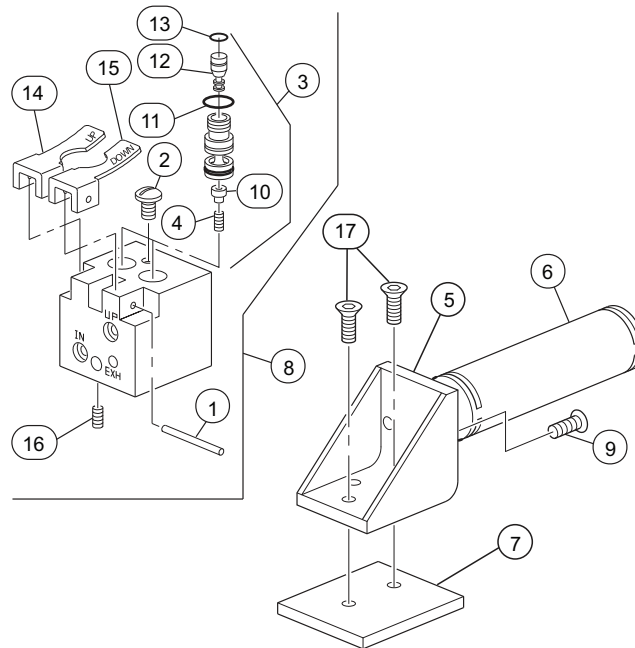


Table 12. Series ZA Control Handle (Ergonomic) Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	ZA Control Handle (includes 1 - 17)	---	18500
(a) 1	Pin	1	18421
(a) 2	Screw	1	18422
(a) 3	Insert Valve Assemblies	2	18412
(a) 4	Spring	2	18418
5	ZA Handle Bracket	1	18446
6	ZA Handle Grip	1	18447
7	Mounting Block	1	1826
8	Control Valve Assembly	1	ZHS18410
9	Button Head Screw	2	ZHS18451
(a) 10	Seal	1	18417
(a) 11	O-Ring	2	ZHS18415
(a) 12	V-seal	1	18423
(a) 13	O-Ring	1	15759
(a) 14	Lever (Up)	1	18419
(a) 15	Lever (Down)	1	ZHS18420
16	Setscrew	1	16093
17	Screw	2	ZHS70427
(b)	ZA Control Handle Repair Kit (includes 1, 2, 3, 14, and 15)	1	18475
(b)	Insert Valve Repair Kit (includes 4, 10, 11, 12, and 13)	1	18470

(a) Recommended Spare Parts Available in Kits 18470 and 18475.

(b) Indicates Not Illustrated.

# Series BA Basic Balancer Control Kit Assembly

Figure 12. Assembly Drawing - MHP1908

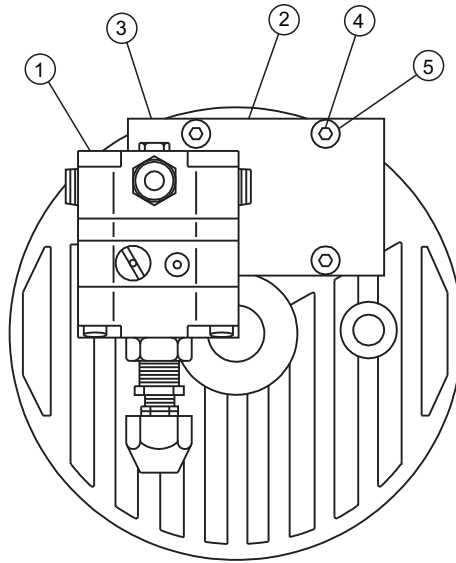


Table 13. Series BA Basic Balancer Control Kit Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
- - -	Control Kit (includes 1 - 5)	-	15320
1	Regulator Assembly	1	13825
2	Tandem Manifold	1	15093
3	O-Ring	1	15751
4	Mounting Screw	4	15779
5	Lockwasher	4	15785
(a)	Control Kit Literature	1	10583441

(a) Indicates Not Illustrated.

# Series BA Regulator Assembly

Figure 13. Exploded View - MHP1259

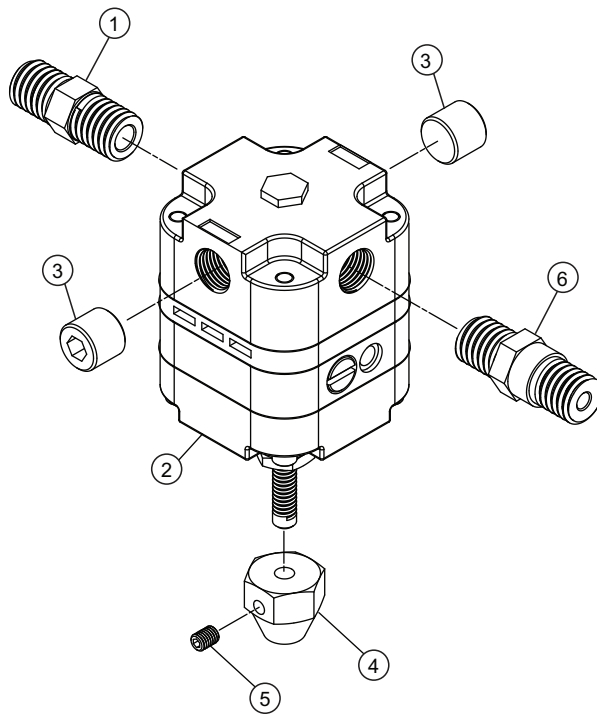


Table 14. Series BA Regulator Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
- - -	Regulator Assembly	1	13825
1	Check Valve	1	13270
2	Regulator	1	13830
3	Plug	2	10764
4	Control Knob	1	13832
5	Setscrew	1	13833
6	Fitting, Nipple	1	13840

# Series BA Z-Servo Control Assembly

Figure 14. Assembly Drawing - MHP1909

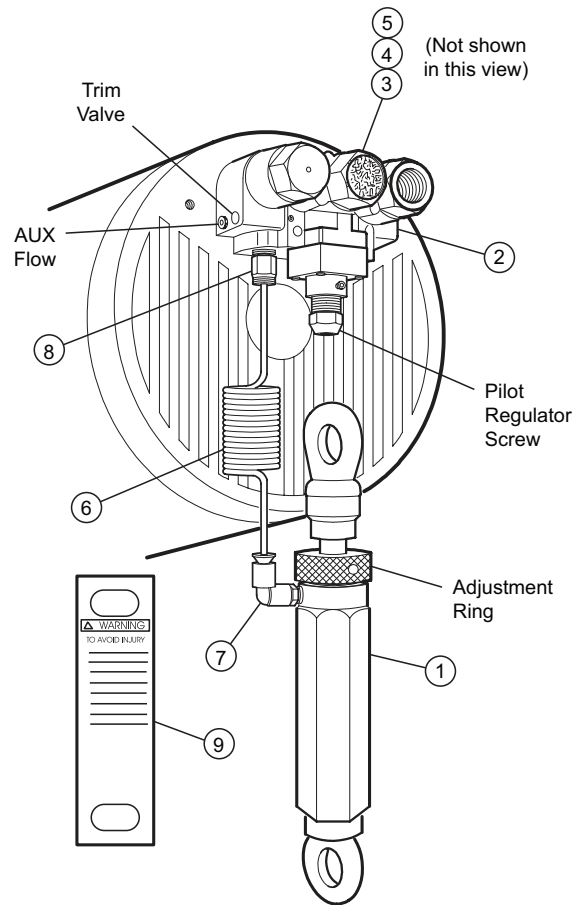


Table 15. Series BA Z-Servo Control Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	BA Z-Servo Control (includes 1 - 9)	---	15330
1	Z-Servo Control	1	10602
2	Integral Regulator Series EA	1	15601
3	Screw	2	15781
4	Screw	2	15782
5	Lockwasher	4	15785
6	Coiled Poly Black Tube	1	93948
7	Fitting, Elbow	1	ZHS93969
8	Connector	1	ZHS93963
9	Warning Tag	1	10445

# Z-Servo Control Assembly

Figure 15. Exploded View - MHP1910

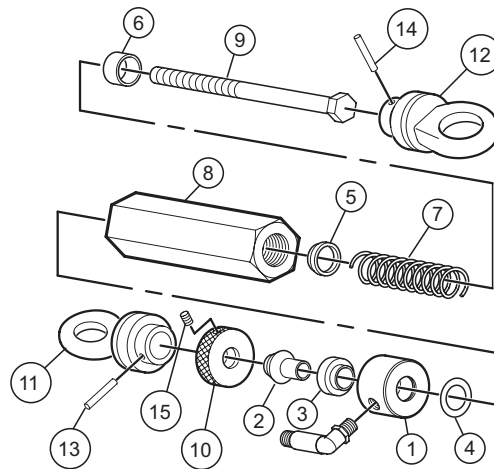


Table 16. Z-Servo Control Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
- - -	Z-Servo Control (includes 1 - 15)	- - -	10602
1	Valve	1	10626
2	Valve Stem	1	10631
(a) 3	Seal	1	ZHS10632
(a) 4	O-Ring	1	10635
5	Guide Washer	1	10613
6	Load Washer	1	ZHS10614
7	Spring	1	ZHS10642
8	Housing	1	10645
9	Plunger	1	10651
10	Adjusting Nut	1	10620
11	Cap	1	ZHS10628
12	Nut	1	10662
(a) 13	Spring Pin	1	10616
(a) 14	Spring Pin	1	10617
(a) 15	Setscrew	1	10619
(b)	Thimble	2	10210
(b)	Clamp	2	10230
(b)	Z-Servo Control Kit (includes 3, 4, 13, 14, and 15)	1	ZHS10600

(a) Recommended Spare Parts.

(b) Indicates Not Illustrated.

# Series EA Balancer Assembly

Figure 16. Assembly Drawing - MHP1911

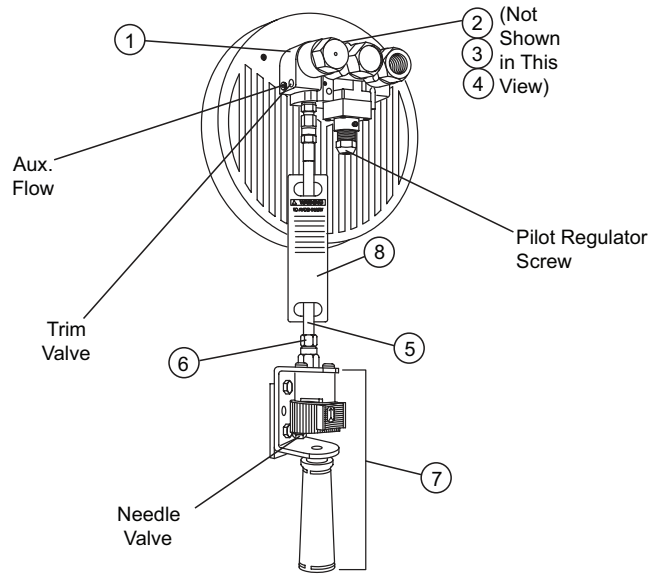


Table 17. Series EA Balancer Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Integral Regulator - Series EA	1	15601
2	Mounting Screw	2	15781
3	Mounting Screw	2	15782
4	Lockwasher	4	15785
5	Control Hose, Black	10	10249
6	Fitting, Swivel	2	10261
7	Safety EA Control Handle Assembly	1	ZHS01810
8	Warning Tag	1	10445



# Series EA 2PS Balancer Assembly

Figure 17. Assembly Drawing - MHP1915

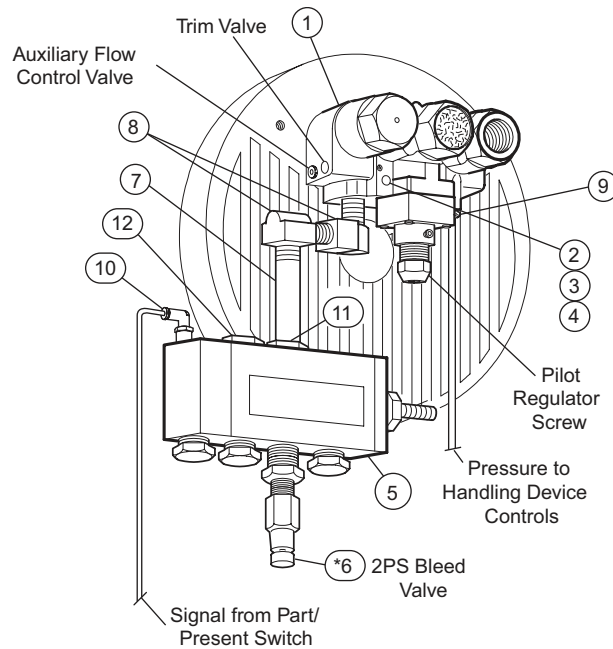


Table 18. Series EA 2PS Balancer Assembly - Parts List

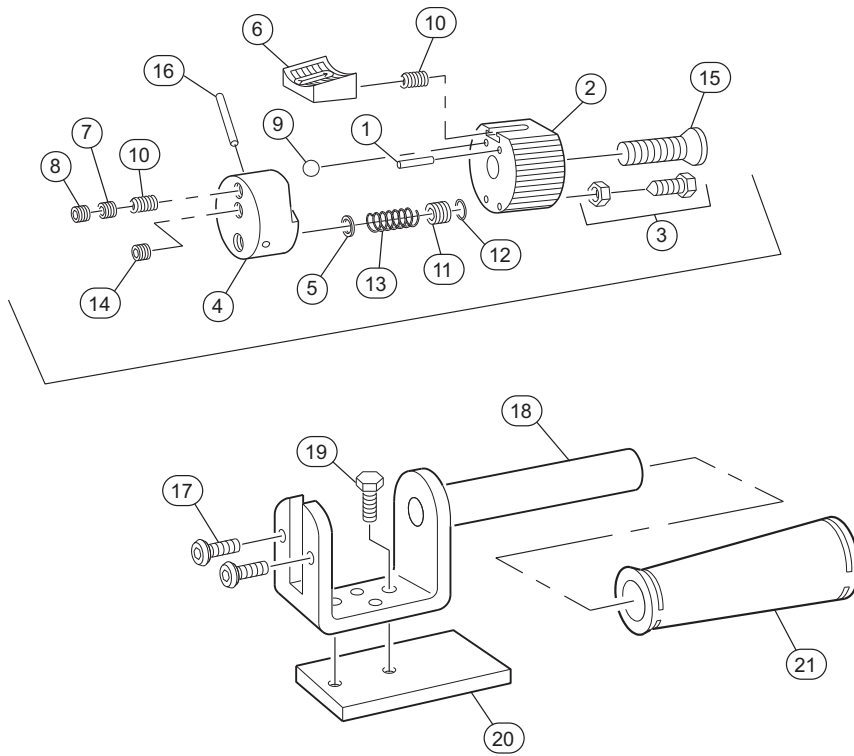
Item No.	Part Description	Total Qty.	Part Number
- - -	EA 2PS Balancer (includes 1 - 12)	- - -	15311-PRS
1	Integral Regulator - Series EA	1	15601
2	Mounting Screw	2	15781
3	Mounting Screw	2	15782
4	Lock Washer	4	15785
5	Two Position Vacuum Sensor	1	99075
	Two Position Pressure Sensor		99080
(a) 6	Bleed Valve	1	13419
7	Fitting, Nipple	1	10730
8	Fitting, Elbow	2	1973
9	Fitting, Tube	1	93965
10	Fitting, Elbow	1	93969
11 (b)	Fitting, Reducer Bushing	1	13501
12	Pipe Plug	3	13835

(a) Included in Two Position Sensor.

(b) Indicates Not Illustrated.

# Series EA Control Handle Assembly

Figure 18. Exploded View - MHP1912



**Table 19. Series EA Control Handle Assembly - Parts List**

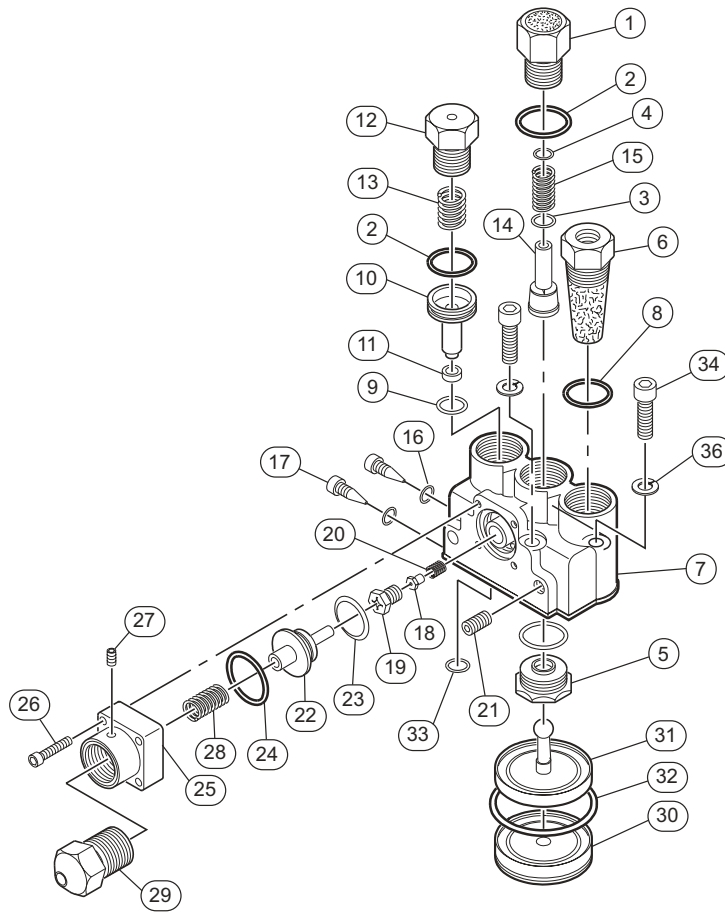
<b>Item No.</b>	<b>Part Description</b>	<b>Total Qty.</b>	<b>Part Number</b>
- - -	Safety EA Control Handle Assembly	- - -	ZHS01810
(a) 1	Spring Pin, Control Valve	1	1807
2	Valve Rotor, Safety EA	1	1863
(a) 3	Needle Valve Assembly	2	1838
4	Valve Body	1	1860
(a) 5	Brass Washer	1	1886
(a) 6	Thumb Well Locator	1	1804
7	Setscrew	1	1803
8	Setscrew	1	1834
(a) 9	Detent Ball	1	1805
(a) 10	Detent Spring	2	ZHS01806
(a) 11	Floating Seal	1	1880
(a) 12	O-Ring	1	1882
(a) 13	Seal Spring	1	1884
14	Setscrew	1	1801
15	Flat Head Screw	1	1817
(a) 16	Spring Pin	1	1814
17	Button Head Screw	2	10070
18	Handle Bracket	1	1840
19	Hex Head Screw	2	ZHS1833
20	Mounting Block	1	1826
21	Handle Grip	1	18447
(b)	EA Control Handle Kit (includes 1, 5, 6, 8, 9, 10, 11, 12, 13, and 16)	1	ZHS01813

(a) Recommended Spare Parts.

(b) Indicates Not Illustrated.

# Series EA, BA Z-Servo Regulator Assembly

Figure 19. Exploded View - MHP1914



## Series EA, BA Z-Servo Regulator Assembly

**Table 20. Series EA, BA Z-Servo Regulator Assembly - Parts List**

Item No.	Part Description	Total Qty.	Part Number
1	Guide Assembly - EA Regulator	1	15601
(a) 2	O-Ring	3	15750
(a) 3	O-Ring	1	15754
(a) 4	O-Ring	1	15755
5	Valve Seat - EA Regulator	1	ZHS15670
6	Intake Filter Assembly	1	13062
7	Body Assembly - EA Regulator	1	15605
(a) 8	O-Ring	1	15758
(a) 9	O-Ring	1	15759
10	Piston - EA Regulator	1	15730
(a) 11	Seal - Integral Check	1	15740
12	Plug - EA Regulator	1	15710
13	Spring - EA Regulator	1	15720
(a) 14	Valve Stem - EA Regulator	1	15680
15	Stem Spring - EA Regulator	1	15700
(a) 16	O-Ring	2	15748
17	Needle Valve - EA Regulator	2	15760
(a) 18	Valve Assembly	1	15802
(a) 19	Valve Seat	1	15803
(a) 20	Valve Spring	1	15804
21	Pipe Plug	1	54028378
(a) 22	Pilot Piston Assembly	1	15800
(a) 23	U-cup Sea	1	15801
(a) 24	O-Ring	1	15757
25	Pilot Bonnet - EA Regulator	1	15821
26	Self Tap Screw	4	15777
27	Set Screw	1	10619
28	Pilot Spring	1	15810
29	Regulator Screw Assy. - EA Regulator	1	15841
30	Bonnet - EA Regulator	1	15620
(a) 31	Main Diaphragm Assy - EA Regulator	1	15630
(a) 32	O-Ring	1	15752
(a) 33	O-Ring	1	15751
34	Screw	2	15782
35	Screw	2	15781
36	Lockwasher	4	15785
(b)	EA Regulator Kit (includes 2, 3, 4, 8, 9, 11, 14, 16, 18, 19, and 20)	1	15900

(a) Recommended Spare Parts.

(b) Indicates Not Illustrated.

# Quad-Coil Hose and Interlock Assembly

Figure 20. Assembly Drawing - MHP1920

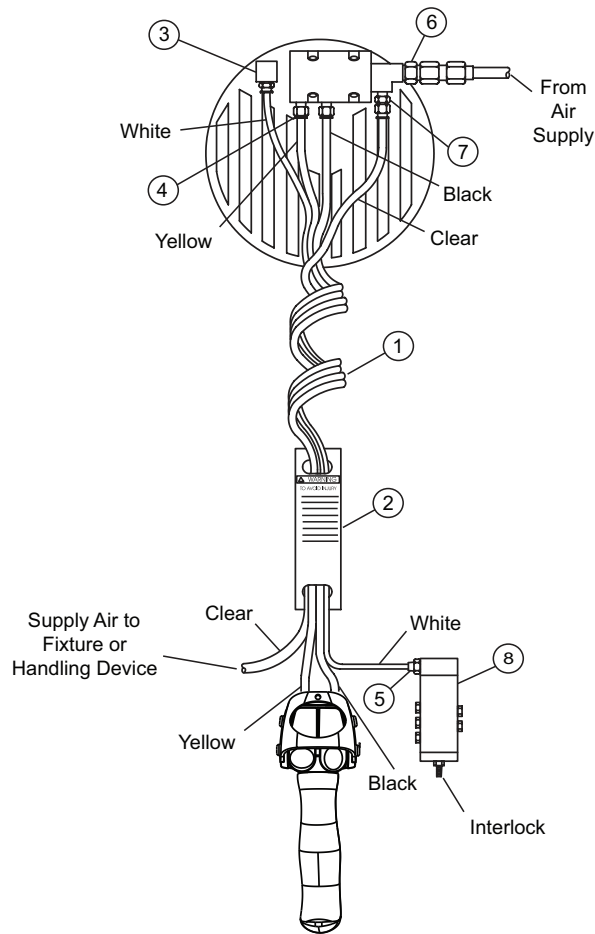


Table 21. Quad-Coil Hose and Interlock Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	Quad-Coil Hose Assembly with Fittings (includes 1, 2, 4, 5, 6, 7, and 8)	---	10813
1	Quad Coil Hose	1	ZHS93949
2	Warning Tag	1	10445
3	Push on Elbow Fitting, 5/32 tube	1	93970
4	Push on Fitting, 3/8 tube	5	ZHS93947
5	Push on Fitting, 5/32 tube	1	ZHS93963
6	Street Tee, 3/8 NPT	1	ZHS10708
7	Reducer Bushing	1	13503
8	Interlock	1	99064

# Tandem Control Balancer Assembly

Figure 21. Exploded View - MHP1923

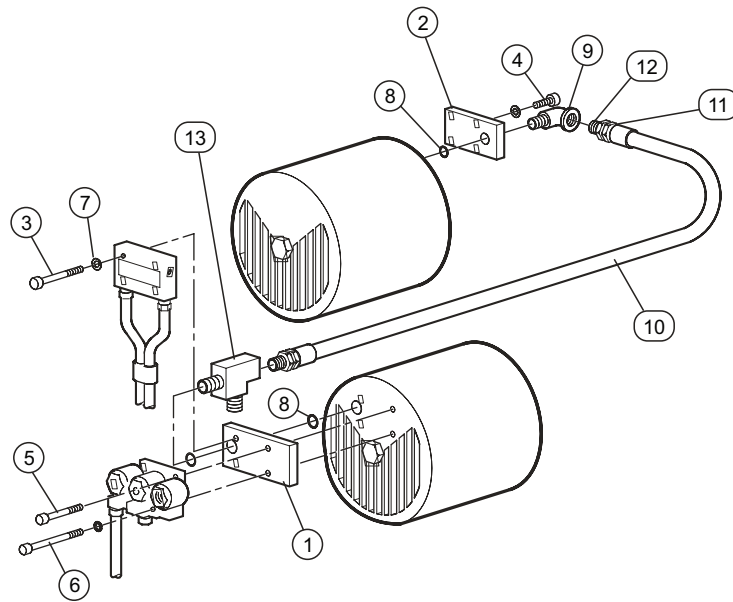


Table 22. Tandem Control Balancer Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
---	Tandem Balancer Control Kit (includes 1 - 13)	---	15350
1	Master Tandem Manifold	1	15094
2	Slave Tandem Manifold	1	15093
3	Mounting Screw	4	15778
4	Mounting Screw	4	15779
5	Mounting Screw	2	15786
6	Mounting Screw	2	15787
7	Lockwasher	8	15785
8	O-Ring	2	15751
9	Street Elbow 90°	1	10375
10	Black Control Hose	2.5 ft	BH6C
11	Swivel - F Hose Fitting	2	10560
12	Male Adapter	2	10565
13	Street Tee Used with Zimmerman Interlock	1	1964

# Hook and Wire Rope to Hook Assembly

Figure 22. MHP1926

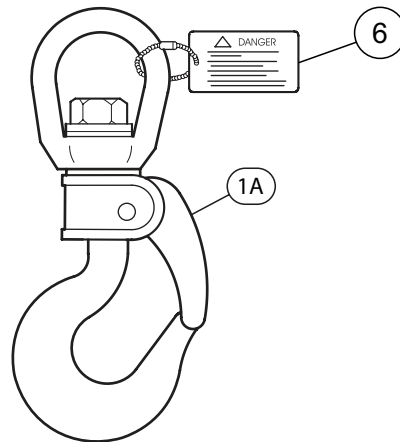
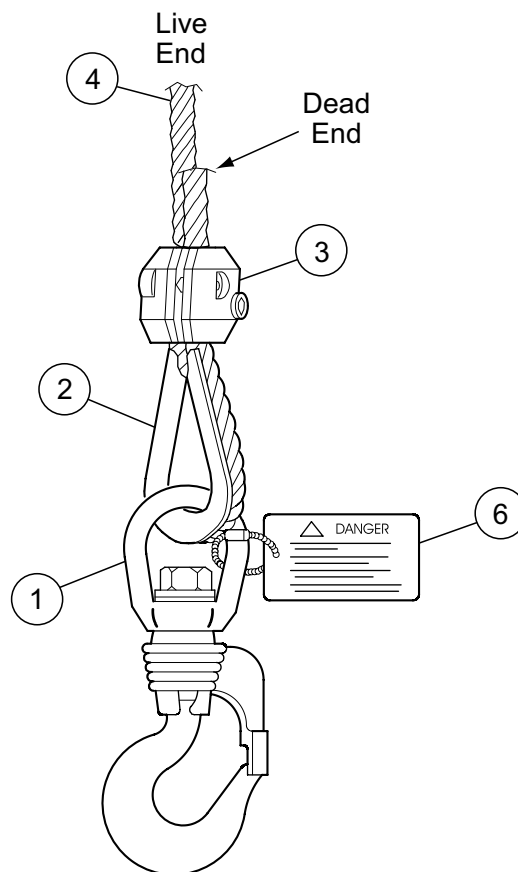


Figure 23. MHP4607





## Hook and Wire Rope to Hook Assembly

**Table 23. Hook and Wire Rope to Hook Assembly - Parts List**

<b>Item No.</b>	<b>Part Description</b>	<b>Total Qty.</b>	<b>Part Number</b>
1A	Hook Assembly, Pin Lock	1	10227
1	Hook Assembly, Spring Lock	1	10223
2	Thimble	1	10210
3	Clamp (includes Capscrews 2 each)	1	10237
4	Wire Rope	ft	10084-( )
6	Warning Tag	1	ZHS10515
(a) 7	Allen Wrench	1	10905
(a)	Accessory Kit (includes 1, 2, 3, 6, 7)	1	10208

(a) Indicates Not Illustrated.

# Suspension Kits - Parts List

Part Number	Balancer Suspension Kit	Refer to Dwg:
16300	ZRS2/3 Small Balancer	Figure 27, p. 38
16305	ZRA1 Small Balancer	Figure 24, p. 35
16307	ZRV2 Small Balancer	
16310/ZHS16310	ZRA2 Small Balancer	Figure 27, p. 38
16315	KBK2 Small Balancer	
16325	KBK1 Small Balancer	Figure 28, p. 39
16344	ETA - 4 Small Balancer	Figure 24, p. 35
16345	ETA - 8 Small Balancer	Figure 27, p. 38
16355	ZRAT Small Balancer	Figure 24, p. 35
16360	Hook Mount Small Balancer	Figure 26, p. 37
16380	Opt. Small Balancer	Figure 27, p. 38
16400	ZRS2/3 Large Balancer	Figure 27, p. 38
16405	ZRA1 Large Balancer	Figure 25, p. 36
16407	ZRV2 Large Balancer	
16410	ZRA2 Large Balancer	Figure 27, p. 38
16415	KBK2 Large Balancer	
16425	KBK1 Large Balancer	Figure 28, p. 39
16444	ETA - 4 Large Balancer	Figure 25, p. 36
16445	ETA - 8 Large Balancer	Figure 27, p. 38
16455	ZRAT Large Balancer	Figure 25, p. 36
16460	Hook Mount Large Balancer	Figure 26, p. 37
16480	Opt. Mount Large Balancer	Figure 27, p. 38

# Small Balancer Suspension Kits

Figure 24. Exploded View - MHP1927

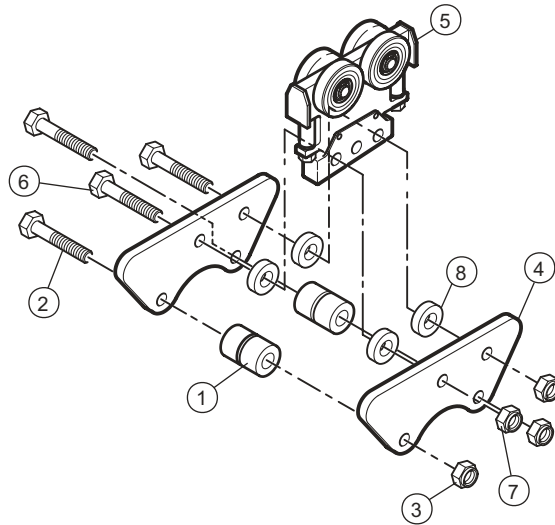


Table 24. Small Balancer Suspension Kits - Parts List

Item No.	Part Description	Total Qty.	Part Number			
			16305 ZRA1	16355 ZRAT	16344 ETA - 4	16307 ZRV2
1	Bushing	2	17025			
2	Screw	2	17047			
3	Nut	2	17060			
4	Trolley Bracket	2	17125			
5	Trolley	2	30279	31056	30743	31525
6	Screw	1	ZHS72005			
7	Nut	2	75563			
8	Spacer	2	30073-500			
(a)	Suspension Kit Literature	1	10583433			

(a) Indicates Not Illustrated.

# Large Balancer Suspension Kits

Figure 25. Exploded View - MHP1929

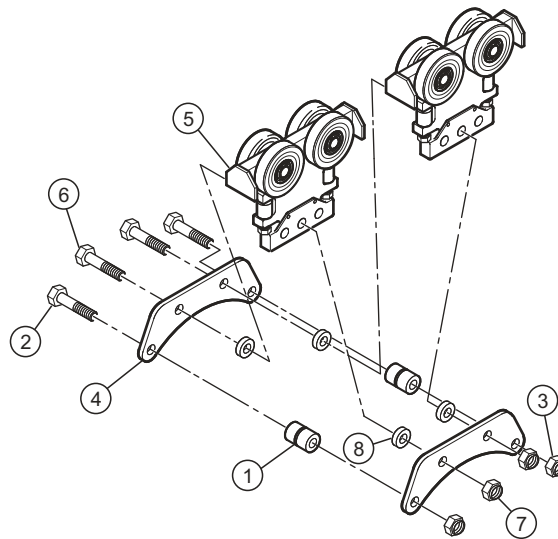


Table 25. Large Balancer Suspension Kits - Parts List

Item No.	Part Description	Total Qty.	Part Number			
			16405 ZRA1	16455 ZRAT	16444 ETA - 4	16407 ZRV2
1	Bushing	2	17025			
2	Screw	2	17047			
3	Nut	2	17060			
4	Trolley Bracket	2	17220			
5	Trolley	2	30279	31056	30743	31525
6	Screw	2	ZHS72005			
7	Nut	2	75563			
8	Spacer	4	30073-500			
(a)	Suspension Kit Literature	1	10583433			

(a) Indicates Not Illustrated.

# Hook Mount Suspension Kits

Figure 26. Exploded View - MHP1930

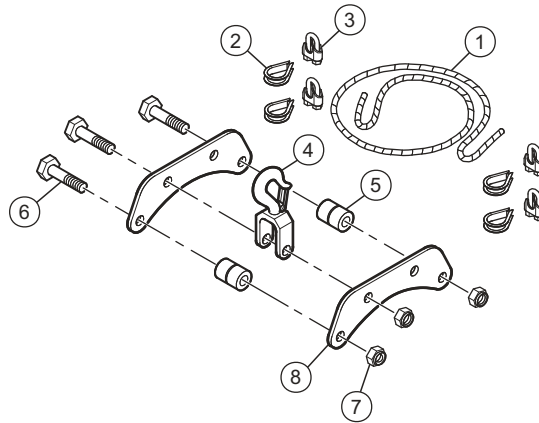


Table 26. Hook Mount Suspension Kits - Parts List

Item No.	Part Description	Total Qty.	Part Number	
			16360 Hook Mount Small Balancer	16460 Hook Mount Large Balancer
1	Safety Cable	3 ft	10096-3	
2	Thimble	2	10212	
3	Clamp	4	10235	
4	Top Hook	1	17010	
5	Bushing	2	17025	
6	Screw	2	17047	
7	Nut	2	17060	
8	Bracket Top Hook	2	17505	17012
(a)	Hook Mount Kit Literature	1	10583409	

(a) Indicates Not Illustrated.

# ZRS/ZRA2/KBK2 and ETA - 8 Suspension Kits

Figure 27. Exploded View - MHP1931

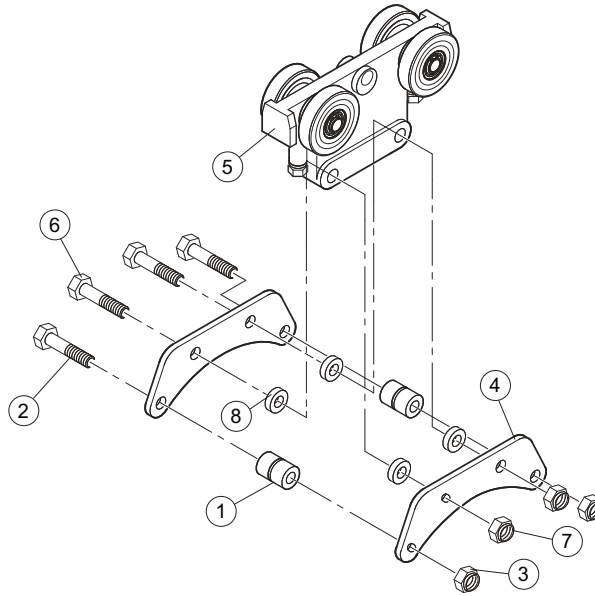


Table 27. ZRS/ZRA2/KBK2 and ETA - 8 Suspension Kits - Parts List

Item No.	Part Description	Total Qty.	Part Number			
			16300 ZRS2/3 Sm. Balancer	16310 ZHS16310 /ZRA2 Sm. Balancer	16315 KBK2 Sm. Balancer	16345 ETA - 8 Sm. Balancer
1	Bushing	2	17025			
2	Screw	2	17047			
3	Nut	2	17060			
4	Trolley Bracket	2	17110			
5	Trolley	1	ZHS30510	30015	30030	30929
6	Screw	2	72626			
7	Nut	2	75566			
8	Spacer	4	30073-312			

Item No.	Part Description	Total Qty.	Part Number			
			16400 ZRS2/3 Lg. Balancer	16410 ZRA2 Lg. Balancer	16415 KBK2 Lg. Balancer	16445 ETA - 8 Lg. Balancer
1	Bushing	2	17025			
2	Screw	2	17047			
3	Nut	2	17060			
4	Trolley Bracket	2	17215			
5	Trolley	1	ZHS30510	30015	30030	30929
6	Screw	2	72626			
7	Nut	2	75566			
8	Spacer	4	30073-312			

# KBK1 Suspension Kit

Figure 28. Exploded View - MHP1932

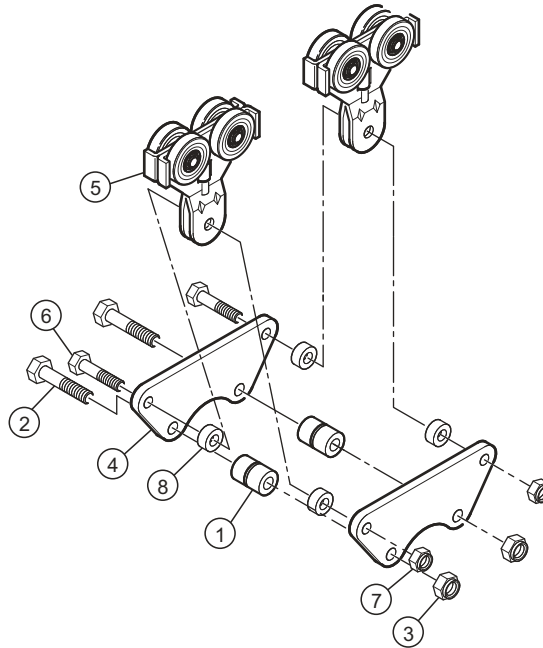


Table 28. KBK1 Suspension Kit - Parts List

Item No.	Part Description	Total Qty.	Part Number	
			16325 Smaller Balancer	16425 Large Balancer
1	Bushing	2	17025	
2	Screw	2	17047	
3	Nut	2	17060	
4	Trolley Bracket	2	17120	17220
5	Trolley	2	ZHS30603	
6	Screw	2	ZHS72005	
7	Nut	2	75563	
8	Spacer	4	30073-594	

# 16490 Tandem Tie Bar Kit ZRA2/ZRS2/3 Rail

Figure 29. Assembly Drawing - MHP1933

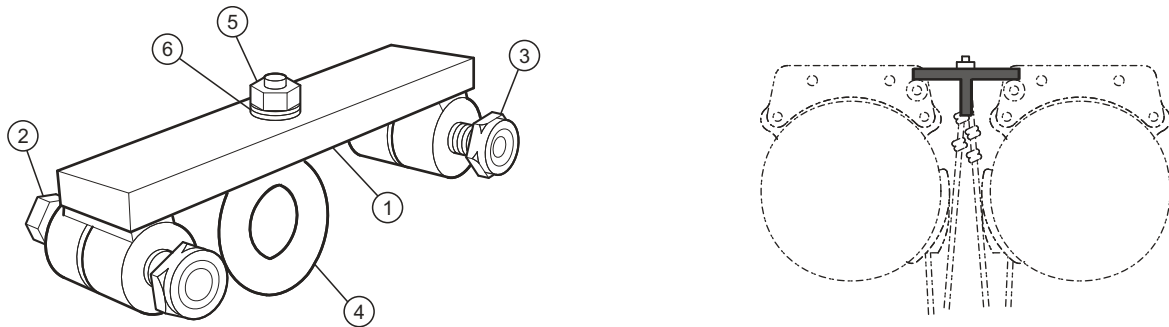


Table 29. 16490 Tandem Tie Bar Kit ZRA2/ZRS2/3 Rail Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Tandem Tie-Bar	1	16200
2	Capscrew	2	17047
3	Locknut	2	17060
4	Tandem Reeve Eyebolt	1	16155
5	Nut	1	75512
6	Lockwasher	1	74513



# 16495 Tandem Tie Bar Kit T-Rail

Figure 30. Exploded View - MHP1934

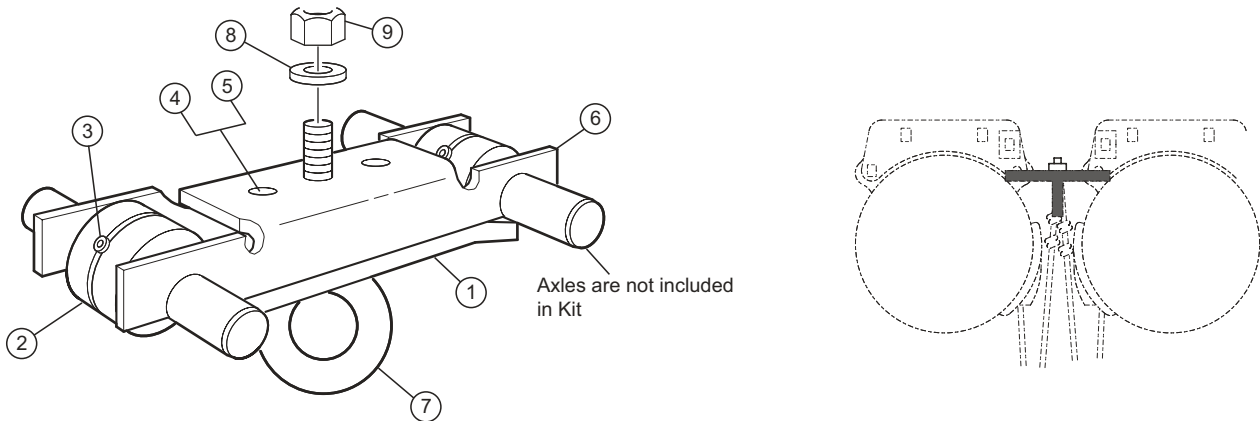


Table 30. 16495 Tandem Tie Bar Kit T-Rail Assembly - Parts List

Item No.	Part Description	Total Qty.	Part Number
1	Tie-Bar Clip	1	16047
2	Steel Axle Bushing	2	16052
3	Setscrew	2	16093
4	Socket Head Screw	2	ZHS70927
5	Lockwasher	2	16099
6	T-Rail Tie-Bar	1	16112
7	Tandem Reeve Eyebolt	1	16155
8	Lockwasher	1	74513
9	Nut	1	75512





