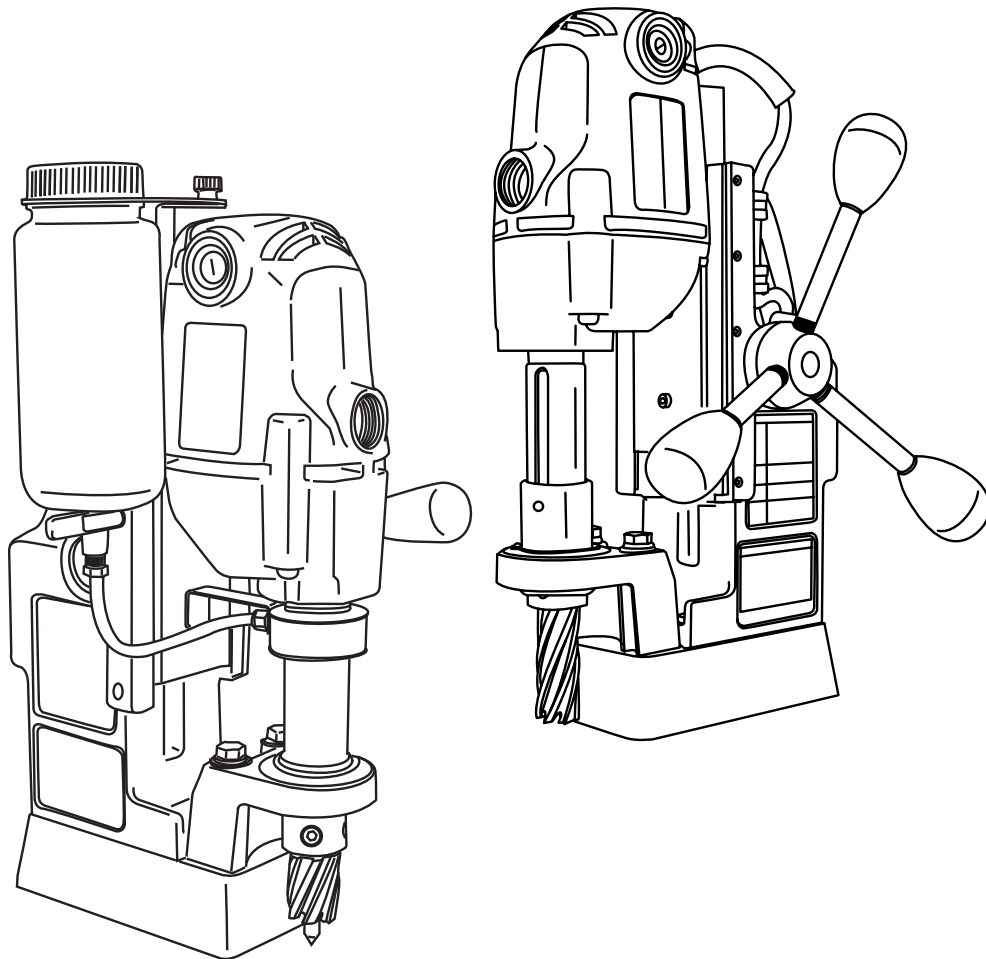




# HMD904 SERIES PORTABLE MAGNETIC DRILL

## OPERATOR'S MANUAL

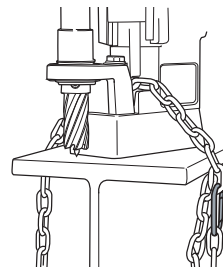
COVERS DRILL PART NUMBER 0904201, 0904202, 0904103  
0904203, 0904104 & 0904204



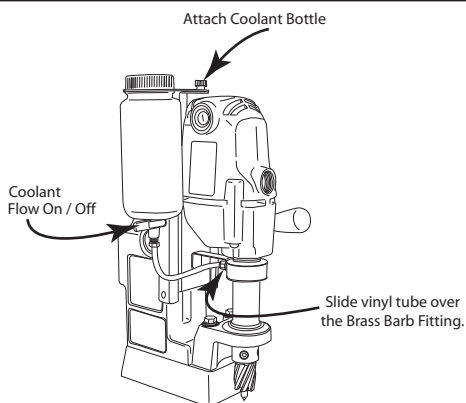
FOR USE WITH HOUGEN® "12,000-SERIES" CUTTERS

## SAFETY CHAIN USE

The safety chain should be used to prevent the drill unit from falling in the event of a power failure or if the magnet breaks loose from the work surface. The safety chain should be attached to the drill by running it between the Front Support Bracket and the Drill Housing and then continue around the material and/or work surface. Adjust the chain so it is tight and secure. Please refer to the diagram.



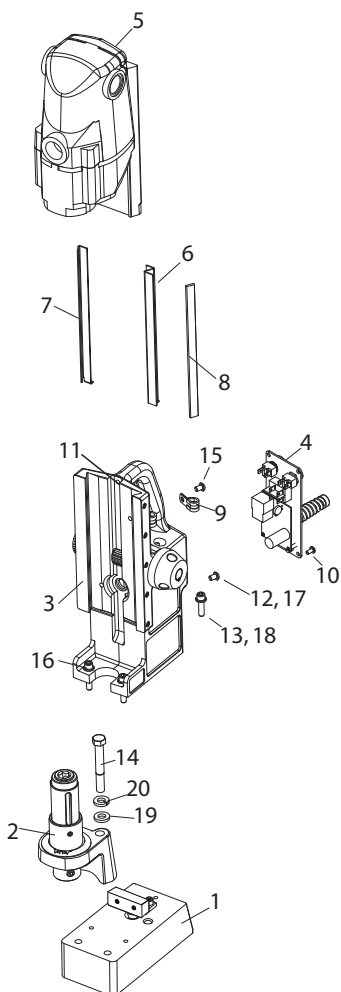
## COOLANT BOTTLE ASSEMBLY



### 05060 Coolant Bottle Assembly

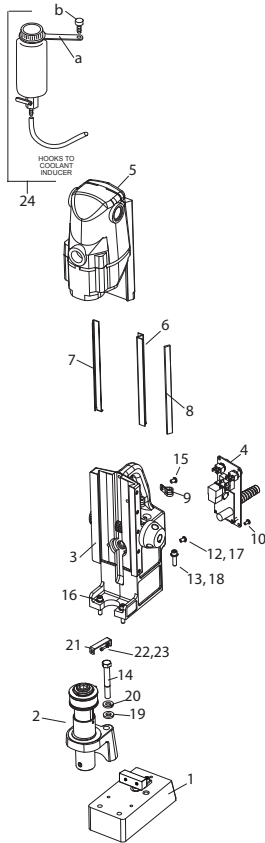
<b>05064</b>	Round Bottle
<b>05059</b>	Coolant Bottle Bracket (Bottle to Bracket)
<b>05061</b>	Thumb Screw (holds bottle bracket to mounting bracket)
<b>05065</b>	Ball Valve
<b>05067</b>	Brass Barb Fitting (bottom of the bottle)
<b>40304</b>	Vinyl Tube
<b>07080</b>	Brass Fitting (vinyl tube to coolant inducer) not included in 05060 kit.

## 0904201 HMD904 230V MAG BASE DRILL



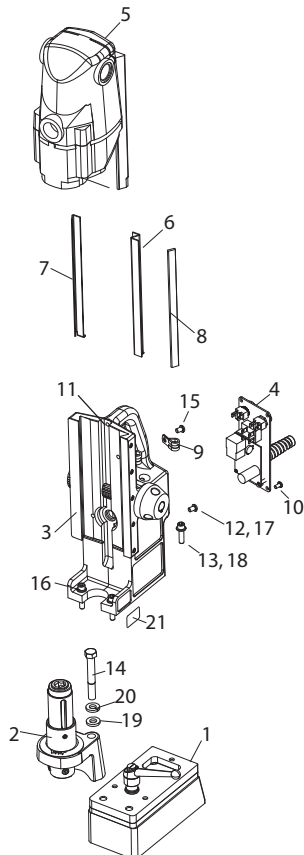
Item	Part #	Description	Qty
1	<b>*05392</b>	Magnet & Switch Assembly Standard Base	1
2	<b>*05470</b>	Arbor/Front Support Assembly	1
3	<b>*04540</b>	Housing Assembly	1
4	<b>*05290</b>	Panel Assembly	1
5	Refer to the following pages for the Motor/Slide Assembly Breakdown		
6	<b>02429</b>	Brass Gib Right Hand	1
7	<b>02430</b>	Brass Gib Left Hand	1
8	<b>02431</b>	Steel Gib	1
9	<b>02420</b>	Cable Clamp	1
10	<b>41044</b>	Screw BHC #10-32 X 3/8	4
11	<b>40432</b>	Screw SHC 1/4-28 X 3/8	1
12	<b>17002</b>	Screw SHC #6-32 X 1/2 (ground)	1
13	<b>40077</b>	Screw SHC 1/4-20 X 1	1
14	<b>02460</b>	Hex Bolt 3/8-24 X 2-3/4	2
15	<b>02461</b>	Screw BHC 1/4-28 X 3/8	1
16	<b>10553</b>	Screw SHC 1/4-20 X 7/8	2
17	<b>90052</b>	Lock Washer	1
18	<b>90028</b>	Lock Washer	3
19	<b>40392</b>	Flat Washer	2
20	<b>40391</b>	Lock Washer	2
<b>Accessories Included</b>			
	<b>10565</b>	Hex Key 1/8 wrench	1
	<b>10730</b>	Safety Chain 3/16 X 5' w/Snap Hook	1
	<b>04550</b>	Carrying Case w/Label	1
	<b>02635</b>	Hex Key 3/16" T-Handle	1
<b>* See Following Pages for Detailed Breakdowns</b>			

## 0904202 HMD904 230V MAG BASE DRILL



Item	Part #	Description	Qty
1	*05392	Magnet & Switch Assembly Standard Base	1
2	*07155	Arbor/Front Support Assembly	1
3	*04540	Housing Assembly	1
4	*05290	Panel Assembly	1
5	Refer to the following pages for the Motor/Slide Assembly Breakdown		
6	02429	Brass Gib Right Hand	1
7	02430	Brass Gib Left Hand	1
8	02431	Steel Gib	1
9	02420	Cable Clamp	1
10	41044	Screw BHC #10-32 X 3/8	4
12	17002	Screw SHC #6-32 X 1/2 (ground)	1
13	40077	Screw SHC 1/4-20 X 1	1
14	02460	Hex Bolt 3/8-24 X 2-3/4	2
15	02461	Screw BHC 1/4-28 X 3/8	1
16	10553	Screw SHC 1/4-20 X 7/8	2
17	90052	Lock Washer	1
18	90028	Lock Washer	3
19	40392	Flat Washer	2
20	40391	Lock Washer	2
21	07163	Coolant Inducer Bracket	1
22	40038	Screw SHC #10-32 X 5/8	1
23	10560	Lock Washer	1
24	05060	Coolant Bottle Assembly	1
a	05059	Coolant Bottle Holder	1
b	05061	Thumb Screw	1
Accessories Included			
	10565	Hex Key 1/8 wrench	1
	10730	Safety Chain 3/16 X 5' w/Snap Hook	1
	04550	Carrying Case w/Label	1
	02635	Hex Key 3/16" T-Handle	1

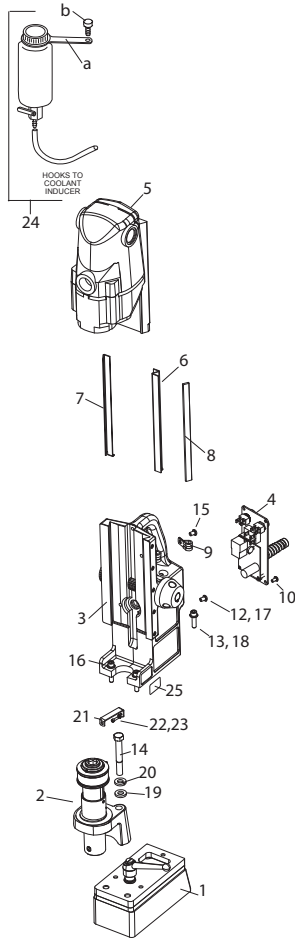
## 0904103 HMD904 115V MAG BASE DRILL 0904203 HMD904 230V MAG BASE DRILL



Item	Part #	Description	Qty
1	*05648	Magnet & Switch Assembly Swivel Base 0904103	1
	*05968	Magnet & Switch Assembly Swivel Base 0904203	1
2	*05733	Arbor/Front Support Assembly	1
3	*04540	Housing Assembly	1
4	*05188	Panel Assembly 0904103	1
	*05290	Panel Assembly 0904203	1
5	Refer to the following pages for the Motor/Slide Assembly Breakdown		
6	02429	Brass Gib Right Hand	1
7	02430	Brass Gib Left Hand	1
8	02431	Steel Gib	1
9	02420	Cable Clamp	1
10	41044	Screw BHC #10-32 X 3/8	4
11	40432	Screw SHC 1/4-28 X 3/8 (feed stop)	1
12	17002	Screw SHC #6-32 X 1/2 (ground)	1
13	40077	Screw SHC 1/4-20 X 1	1
14	05736	Hex Bolt 3/8-24 X 2	2
15	02461	Screw BHC 1/4-28 X 3/8	1
16	10553	Screw SHC 1/4-20 X 7/8	2
17	90052	Lock Washer	1
18	90028	Lock Washer	3
19	40392	Flat Washer	2
20	40391	Lock Washer	2
21	07015	Swivel Base Label lock/unlock	1
Accessories Included			
	10565	Hex Key 1/8 wrench	1
	10730	Safety Chain 3/16 X 5' w/Snap Hook	1
	04550	Carrying Case w/Label	1
	02635	Hex Key 3/16" T-Handle	1

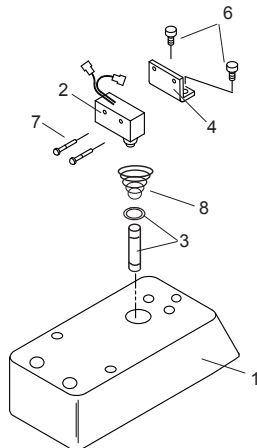
\* See Following Pages for Detailed Breakdowns

## 0904104 HMD904 115V MAG BASE DRILL 0904204 HMD904 230V MAG BASE DRILL



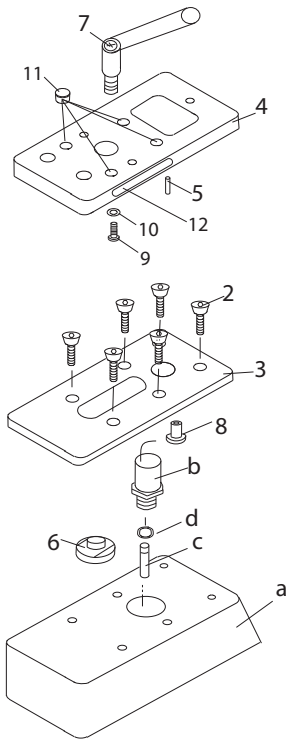
Item	Part #	Description	Qty
1	*05648	Magnet & Switch Assembly Swivel Base 0904104	1
	05968	Magnet & Switch Assembly Swivel Base 0904204	1
2	*07156	Arbor/Front Support Assembly	1
3	*04540	Housing Assembly	1
4	*05188	Panel Assembly 0904104	1
	*05290	Panel Assembly 0904204	1
5	Refer to the following pages for the Motor/Slide Assembly Breakdown		
6	02429	Brass Gib Right Hand	1
7	02430	Brass Gib Left Hand	1
8	02431	Steel Gib	1
9	02420	Cable Clamp	1
10	41044	Screw BHC #10-32 X 3/8	4
12	17002	Screw SHC #6-32 X 1/2 (ground)	1
13	40077	Screw SHC 1/4-20 X 1	1
14	05736	Hex Bolt 3/8-24 X 2	2
15	02461	Screw BHC 1/4-28 X 3/8	1
16	10553	Screw SHC 1/4-20 X 7/8	2
17	90052	Lock Washer	1
18	90028	Lock Washer	3
19	40392	Flat Washer	2
20	40391	Lock Washer	2
21	07163	Coolant Inducer Bracket	1
22	40038	Screw SHC #10-32 X 5/8	1
23	10560	Lock Washer	1
24	05060	Coolant Bottle Assembly	1
a	05059	Coolant Bottle Holder	1
b	05061	Thumb Screw	1
25	07015	Swivel Label	1
Accessories Included			
	10565	Hex Key 1/8 wrench	1
	10730	Safety Chain 3/16 X 5' w/Snap Hook	1
	04550	Carrying Case w/Label	1
	02635	Hex Key 3/16" T-Handle	1
* See Following Pages for Detailed Breakdowns			

## MAGNET ASSEMBLY BREAKDOWN



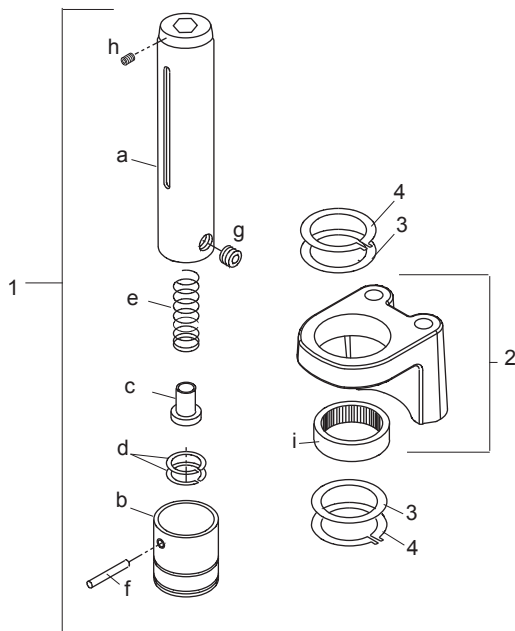
05392 Magnet Assembly 230V			
Item	Part #	Description	Qty
1	05391	Magnet Assembly 230V	1
2	04885	Safety Switch Assembly	1
3	04910	Plunger Assembly	1
4	04909	Safety Switch Bracket	1
6	10971	Screw SHC 1/4-20 X 1/2	2
7	10972	Screw BHC #6-32 X 7/8	2
8	17271	Tapered Spring	1

## SWIVEL BASE MAGNET ASSEMBLY BREAKDOWN



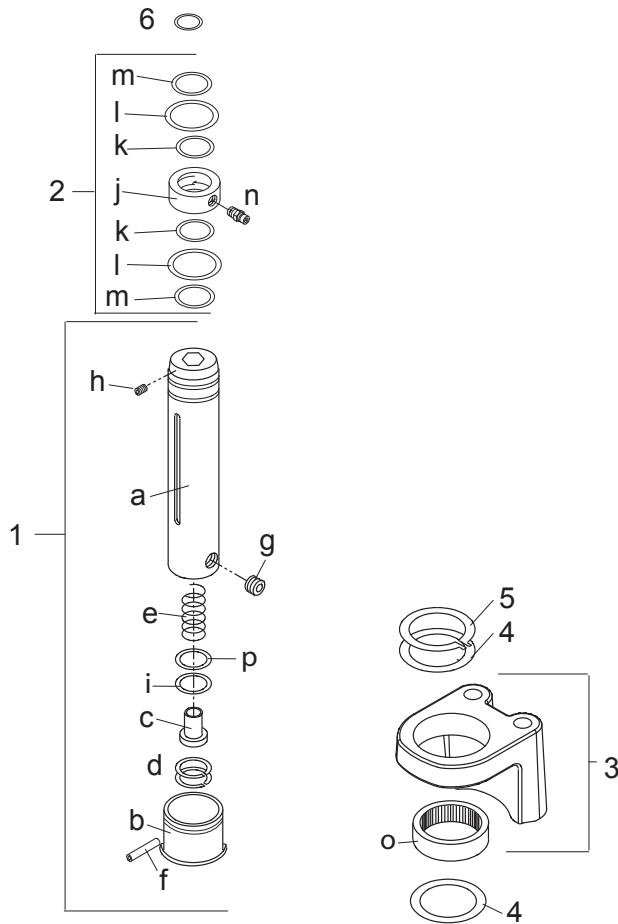
05648 Swivel Magnet Assembly <b>115V</b>			
05968 Swivel Magnet Assembly <b>230V</b>			
Item	Part #	Description	Qty
1	<b>05649</b>	Magnet/Safety Switch Assembly <b>115V</b> includes a-c (used w/05648)	1
	<b>05895</b>	Magnet/Safety Switch Assembly <b>230V</b> includes a-c (used w/05894)	
a	<b>05650</b>	Magnet Assembly <b>115V</b> (used w/05757)	1
	<b>05896</b>	Magnet Assembly <b>230V</b> (used w/05968)	1
b	<b>05652</b>	Ball Switch Assembly	1
c	<b>05653</b>	Plunger	1
d	<b>05670</b>	Retain. Ring	1
2	<b>05743</b>	Screw FHC 1/4-20 X 3/4	6
3	<b>05657</b>	Slide Housing	1
4	<b>05656</b>	Swivel Housing	1
5	<b>02898</b>	Dowel Pin 3/16 X 1/2	1
6	<b>05658</b>	Pivot Rod	1
7	<b>05659</b>	Clamp Handle Assembly	1
8	<b>07215</b>	Bushing Flange	1
9	<b>41044</b>	Screw BHC #10-32 X 3/8	1
10	<b>90237</b>	Flat Washer #10	1
11	<b>07216</b>	9/16 Hole Plug	4
12	<b>07230</b>	Safety Label	1

## ARBOR/FRONT SUPPORT ASSEMBLY BREAKDOWN



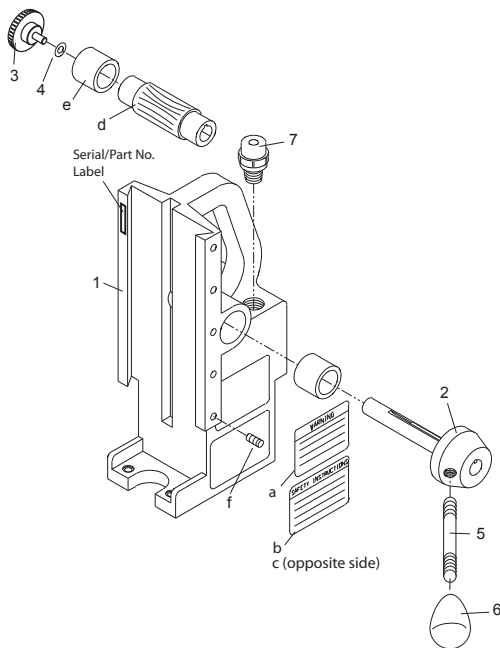
05470 Arbor & Front Support Bracket Assy. non-swivel			
05733 Arbor & Front Support Bracket Assy. swivel			
Item	Part #	Description	Qty
1	<b>05469</b>	Arbor & Collar Assembly	1
a	<b>05458</b>	Arbor Body	1
b	<b>01441</b>	Ejection Collar	1
c	<b>01439</b>	Spring Seat	1
d	<b>10517</b>	Retain. Ring	2
e	<b>05049</b>	Spring	1
f	<b>40312</b>	Roll Pin	1
g	<b>10506</b>	Set Screws 3/8-24 X .305	2
h	<b>05628</b>	Set Screw 1/4-28 X 3/8	2
2	<b>04375</b>	Front Support Bracket used w/05470	1
	<b>05734</b>	Front Support Bracket used w/05733	1
j	<b>40232</b>	Needle Bearing	1
3	<b>40234</b>	Thrust Washer	2
4	<b>40398</b>	Retain. Ring	2

## ARBOR WITH COOLANT ASSEMBLY BREAKDOWN



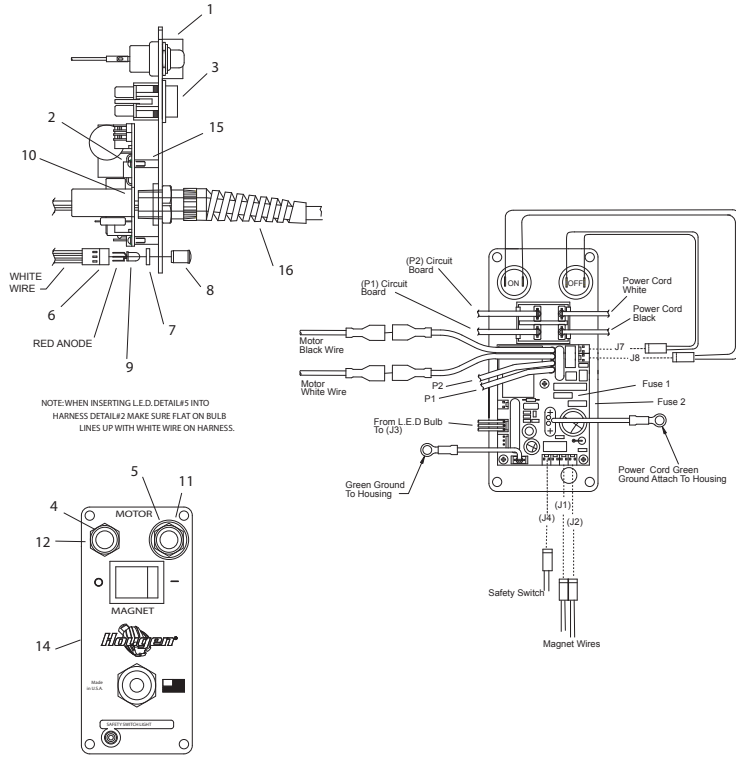
07155 Coolant Arbor Assembly non-Swivel 07156 Coolant Arbor Assembly Swivel			
Item	Part #	Description	Qty
1	<b>07157</b>	Arbor & Collar Assembly	1
a	<b>07159</b>	Arbor Body	1
b	<b>07162</b>	Ejection Collar	1
c	<b>07161</b>	Spring Seat	1
d	<b>10517</b>	Retain. Ring	2
e	<b>05049</b>	Spring	1
f	<b>40312</b>	Roll Pin	1
g	<b>10506</b>	Set Screws 3/8-24 X .305	2
h	<b>05628</b>	Set Screw 1/4-28 X 3/8	2
i	<b>07436</b>	Rubber Washer	1
p	<b>07440</b>	Shim Washer	1
2	<b>07158</b>	Coolant Inducer Assembly	1
j	<b>07160</b>	Inducer Ring	1
k	<b>40300</b>	O-Ring	2
l	<b>40301</b>	Washer	2
m	<b>40302</b>	Retain Ring	2
n	<b>07080</b>	Hose Fitting	1
3	<b>04375</b>	Front Support Bracket Assembly used with <b>07155</b>	1
	<b>05734</b>	Front Support Bracket Assembly used with <b>07156</b>	
o	<b>40232</b>	Needle Bearing	1
4	<b>40234</b>	Thrust Washer	2
5	<b>40398</b>	Retain. Ring	1
6	<b>04391</b>	O-Ring	1

## HOUSING ASSEMBLY BREAKDOWN



04540 Housing Assembly			
Item	Part #	Description	Qty
1	<b>04541</b>	Housing Assembly for 04540 assy. (includes a-f)	
a	<b>04530</b>	Warning Label for 04540 assy.	2
b	<b>04529</b>	Safety Label (shown)	1
c	<b>04553</b>	Safety Chain Label for 04540 assy	1
d	<b>40229</b>	Feed Gear	1
e	<b>40231</b>	Bronze Bushing	2
f	<b>40237</b>	Gib Screws	5
2	<b>40254</b>	Hub Assembly	1
3	<b>05839</b>	Comfort Grip Knob	1
4	<b>10679</b>	Flat Washer	1
5	<b>04558</b>	Feed Handle	3
6	<b>04532</b>	Feed Handle Knob	3
7	<b>02411</b>	Strain Relief	1

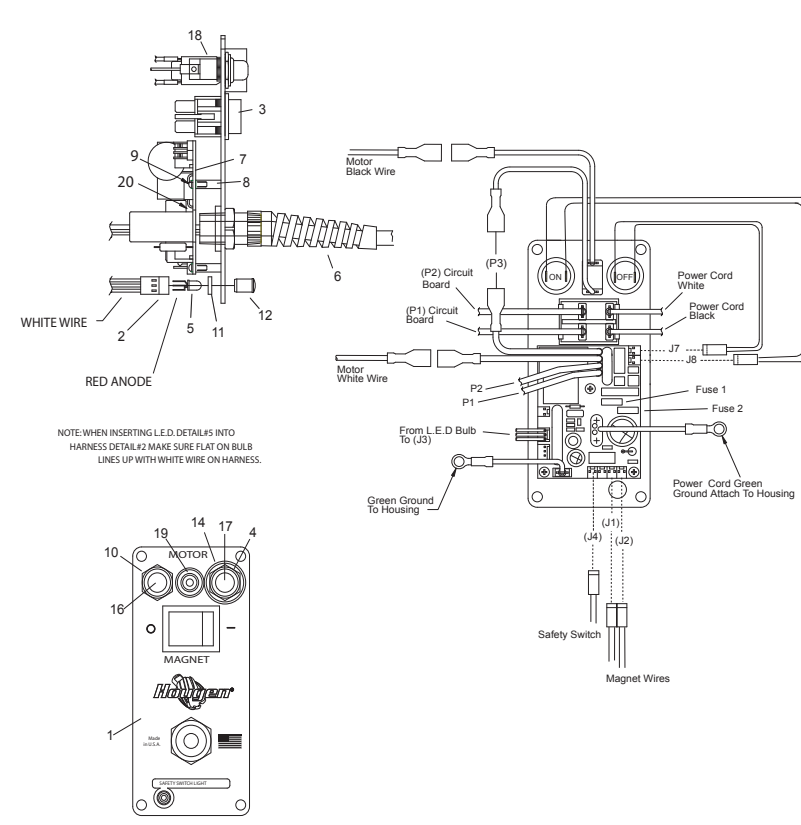
## CONTROL PANEL BREAKDOWN & WIRING 115V



05188 115V Panel Assembly			
Item	Part #	Description	Qty.
1	01226	Switch Guard	1
2	02547	#4-40 x 5/16 Screw	3
3	04614	Magnet Switch	1
4	01228	Red Switch Cover	1
5	02409	Green Switch Cover	1
6	04877	Wire Harness	1
7	04878	Spacer	1
8	04879	Clear Lens	1
9	04881	Bulb L.E.D	1
10	05826	Circuit Board	1
11	01334	Motor ON Switch	1
12	01335	Motor OFF Switch	1
13	*05205	Green Wire Assembly	1
14	07011	Faceplate	1
15	02548	Stand-Off 3/16 x 9/16 LG	3
16	90571	Power Cord	1
17	*90690	Cable Tie	1
18	07522	Fuse	2

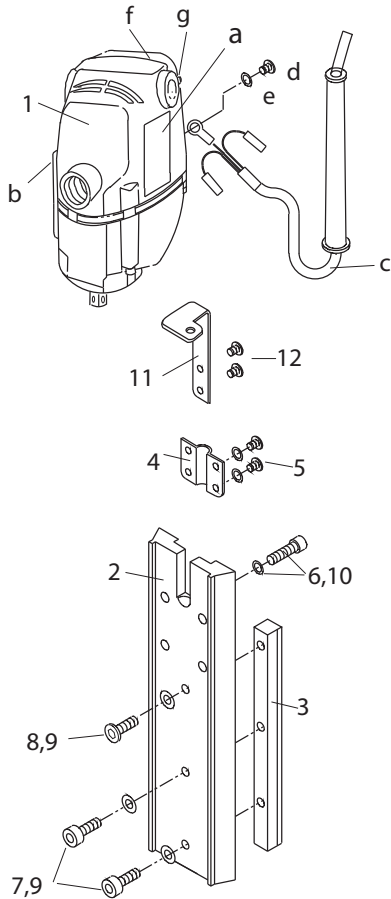
\*not shown

## CONTROL PANEL BREAKDOWN & WIRING 230V



05290 230V Panel Assembly			
Item	Part #	Description	Qty.
1	05929	Faceplate	1
2	04877	Wire Harness	1
3	04664	Magnet Switch	1
4	01334	Motor ON Switch	1
5	04881	Bulb L.E.D	1
6	05424	Power Cord (230V)	1
7	05827	Circuit Board (230V)	1
8	02548	Stand-Off 3/16 x 9/16 LG	3
9	02547	#4-40X5/16 Phillips Head Screw	3
10	01335	Motor OFF Switch	1
11	04878	Spacer	1
12	04879	Clear Lens	1
13	*90690	Cable Tie	1
14	01226	Switch Guard	1
15	*05205	Wire Harness (board to housing)	1
16	01228	Red Switch Cover	1
17	02409	Green Switch Cover	1
18	05926	Circuit Breaker	1
19	05928	Rubber Boot Seal	1

## MOTOR SLIDE ASSEMBLY BREAKDOWN



### 230V Motor / Slide Assembly 0904201 & 0904202

Item	Part #	Description	Qty
1	07181	Motor Assembly <b>230V</b> includes a-g	1
a	04527	Motor Label	1
b	04042	Specs Label <b>230vV</b>	1
c	02413	Motor Cord	1
d	11053	Screw BHS #8-32 X 3/16	1
e	10538	Lock Washer	1
f	04502	Inspection Cover	1
g	75289	Screw Pan Head M5 X 8MM	2
2	04500	Slide	1
3	02428	Rack Gear	1
4	02422	Motor Cord Bracket	1
5	41044	Screw BHC #10-32 X 3/8	4
6	75156	Screw SHC M6 X 1 X 15mm	4
7	40038	Screw SHC #10-32 X 5/8	2
8	90077	Screw BHC #10-32 X 1/2	1
9	10560	Lock Washer	3
10	90028	Lock Washer	4
items 11 and 12 are used with the <b>0904202</b>			
11	05057	Bottle Holder Bracket	1
12	05988	Screw FHC #10-32 X 1/2	2

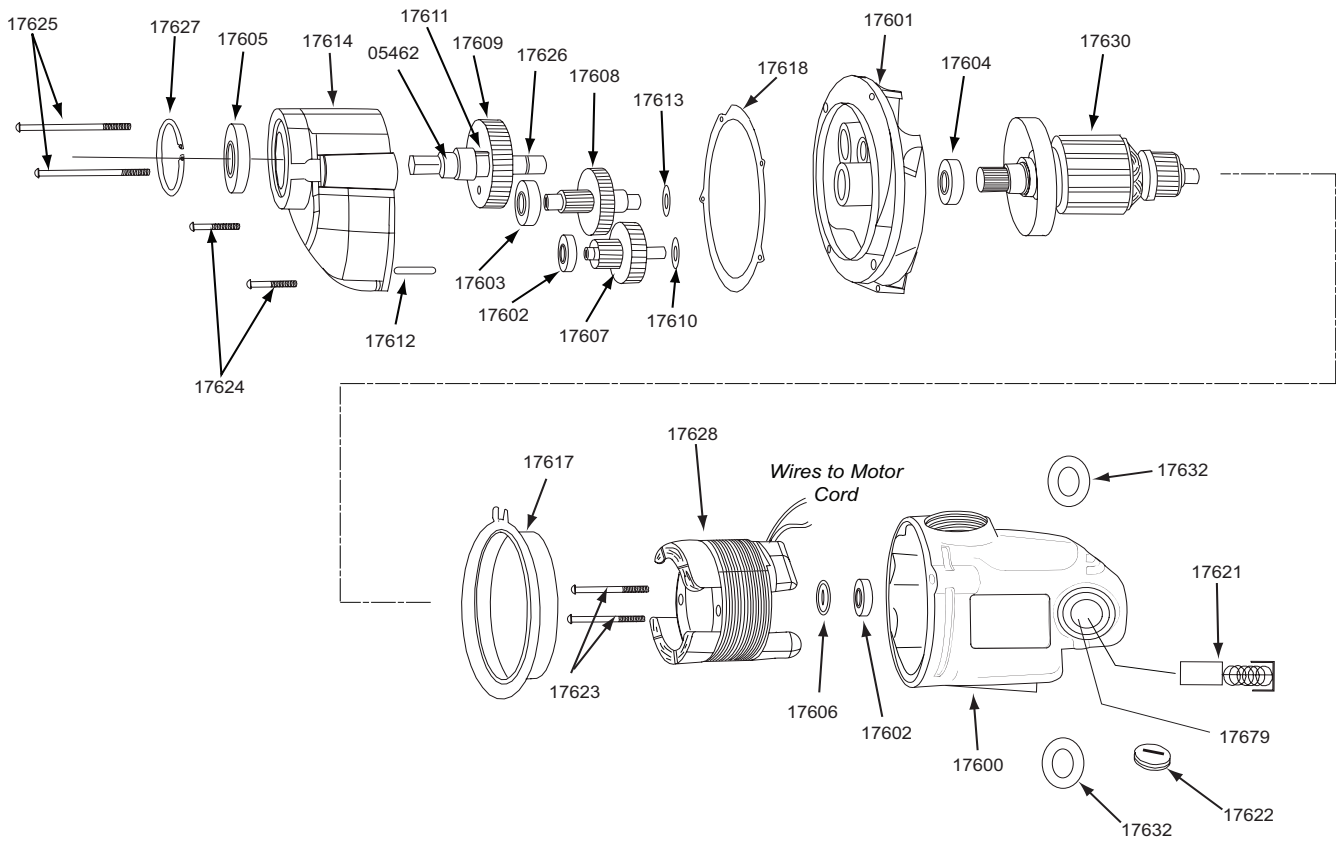
### 115V Swivel Motor & Slide Assembly 0904103 & 0904104

Item	Part #	Description	Qty
1	05477	Motor Assembly 115V	1
a	04527	Motor Label	1
b	04528	Specs Label	1
c	02413	Motor Cord	1
d	11053	Screw BHS #8-32 X 3/16	1
e	10538	Lock Washer	1
f	04502	Inspection Cover	1
g	75289	Screw Pan Head M5 X 8MM	2
2	05824	Slide - Swivel Base	1
3	05825	Rack Gear - Swivel Base	1
4	02422	Motor Cord Bracket	1
5	41044	Screw BHC #10-32 X 3/8	4
6	75156	Screw SHC M6 X 1 X 15mm	4
7	40038	Screw SHC #10-32 X 5/8	2
8	90077	Screw BHC #10-32 X 1/2	1
9	10560	Lock Washer	3
10	90028	Lock Washer	4
items 11 and 12 are used with the <b>0904104</b>			
11	05057	Bottle Holder Bracket	1
12	05988	Screw FHC #10-32 X 1/2	2

### 230V Motor / Slide Assembly 0904203 & 0904204

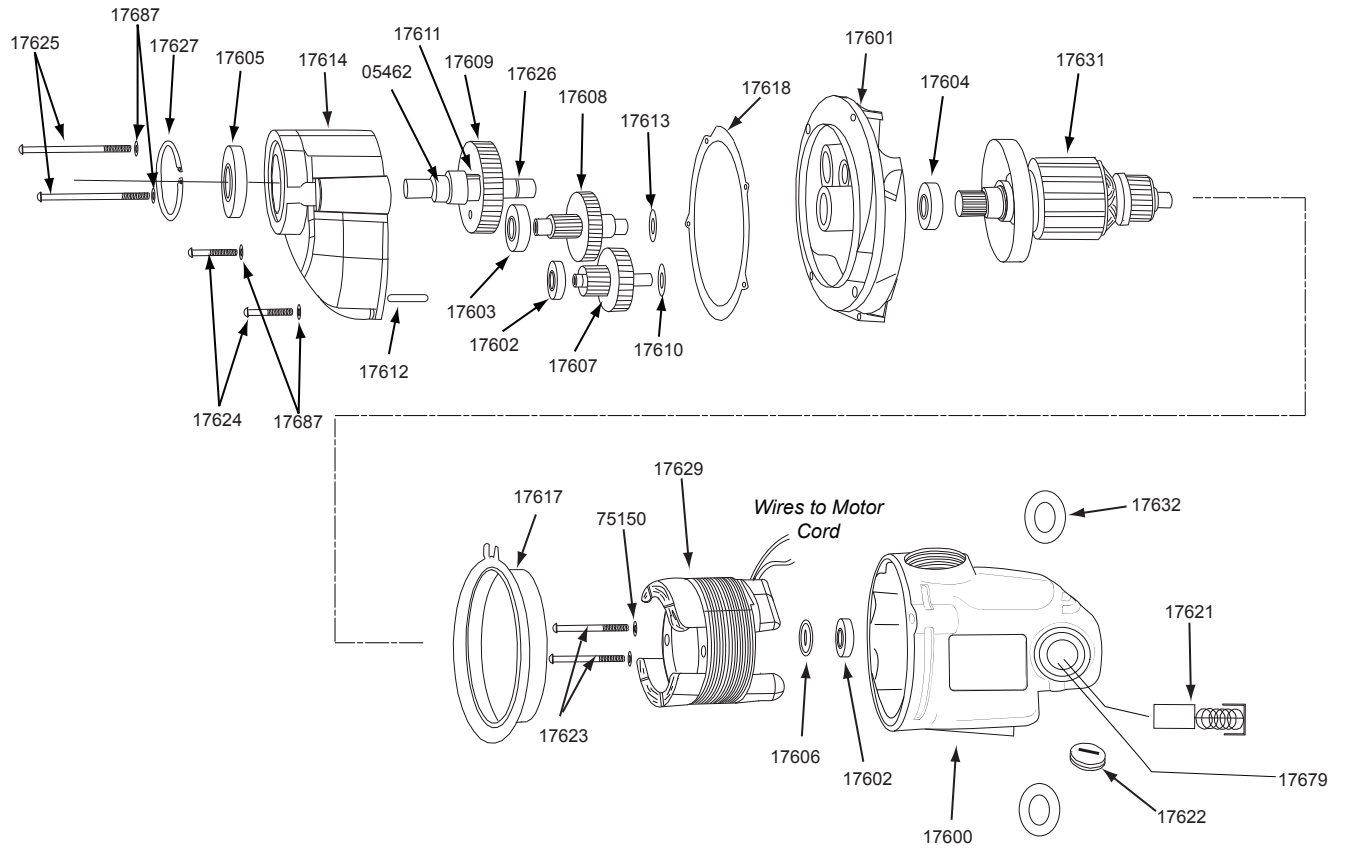
Item	Part #	Description	Qty
1	07181	Motor Assembly <b>230V</b> includes a-g	1
a	04527	Motor Label	1
b	04042	Specs Label (07180 assembly)	1
c	02413	Motor Cord	1
d	11053	Screw BHS #8-32 X 3/16	1
e	10538	Lock Washer	1
f	04502	Inspection Cover	1
g	75289	Screw Pan Head M5 X 8MM	2
2	05824	Slide (07180 assembly)	1
3	05825	Rack Gear (07180 assembly)	1
4	02422	Motor Cord Bracket	1
5	41044	Screw BHC #10-32 X 3/8	4
6	75156	Screw SHC M6 X 1 X 15mm	4
7	40038	Screw SHC #10-32 X 5/8	2
8	90077	Screw BHC #10-32 X 1/2	1
9	10560	Lock Washer	3
10	90028	Lock Washer	4
items 11 and 12 are used with the <b>0904204</b>			
11	05057	Bottle Holder Bracket	1
12	05988	Screw FHC #10-32 X 1/2	2

# MOTOR PARTS DIAGRAM 115V



Part #	Description	Qty	Part #	Description	Qty
05462	Hex Spindle	1	17617	Fan Guide	1
17600	Field Case	1	17618	Gasket	1
17601	Gear Housing	1	17621	Carbon Brush (Pair)	1
17602	Ball Bearing	2	17622	Brush Cap	2
17603	Ball Bearing	1	17623	Pan Head Screw	2
17604	Ball Bearing	1	17624	Pan Head Screw Short	2
17605	Ball Bearing	1	17625	Pan Head Screw Long	2
17606	Dust Seal	1	17626	Retaining Ring	1
17607	1st Inter. Gear Assy	1	17627	Retaining Ring	1
17608	2nd Inter. Gear Assy	1	17628	Field (115V)	1
17609	Spur Gear	1	17630	Armature (115V)	1
17610	Flat Washer	1	17632	Paper Washer	2
17611	Key	1	17679	Brush Holder	2
17612	Dowel Pin	1	17687	Lock Washer	4
17613	Flat Washer	1	75150	Lock Washer	2
17614	Gear Housing	1			

# MOTOR PARTS DIAGRAM 230V



Part #	Description	Qty	Part #	Description	Qty
05462	Hex Spindle	1	17617	Fan Guide	1
17600	Field Case	1	17618	Gasket	1
17601	Gear Housing	1	17621	Carbon Brush (Pair)	1
17602	Ball Bearing	2	17622	Brush Cap	2
17603	Ball Bearing	1	17623	Pan Head Screw	2
17604	Ball Bearing	1	17624	Pan Head Screw Short	2
17605	Ball Bearing	1	17625	Pan Head Screw Long	2
17606	Dust Seal	1	17626	Retaining Ring	1
17607	1st Inter. Gear Assy	1	17627	Retaining Ring	1
17608	2nd Inter. Gear Assy	1	17629	Field	1
17609	Spur Gear	1	17631	Armature	1
17610	Flat Washer	1	17632	Paper Washer	2
17611	Key	1	17679	Brush Holder	2
17612	Dowel Pin	1	17687	Lock Washer	4
17613	Flat Washer	1	75150	Lock Washer	2
17614	Gear Housing	1			