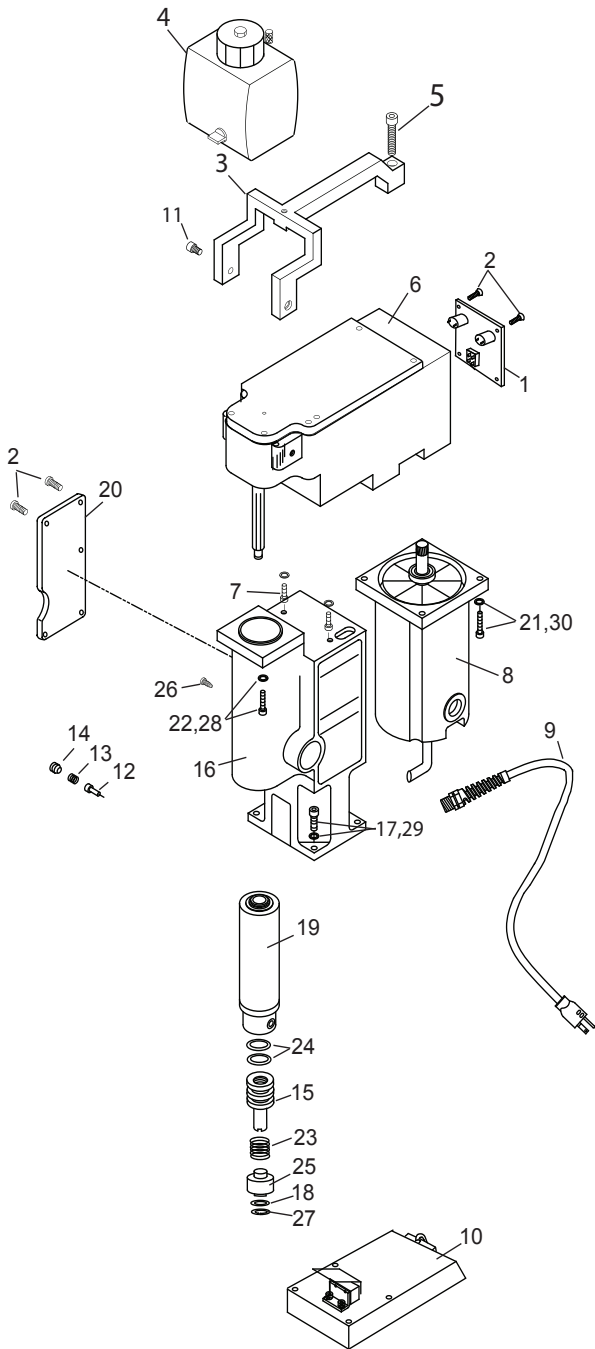
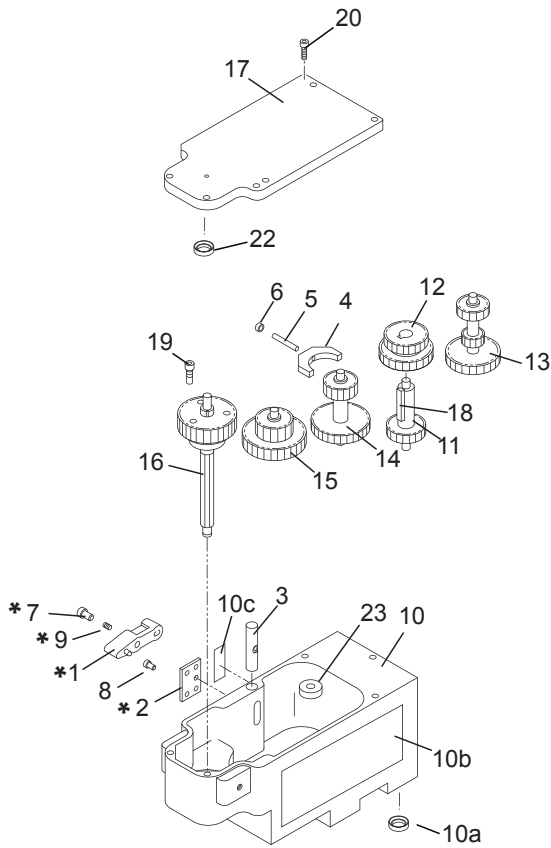


HOUGEN HMD505 EXPLODED VIEW



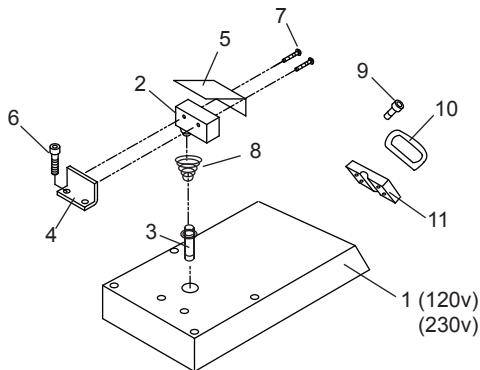
Item	Part #	Description	Qty
1	04613	End Panel Assembly 120v	1
	04663	End Panel Assembly 230v	1
2	41044	B.H.C Screw #10-32 X 1/2	9
3	24033	Carrying Handle	1
4	24228	Coolant Bottle Assembly	1
5	40108	S.H.C Screw 1/4 X 1-1/4	1
6	04625	Gear Box Assembly	1
7	04159	S.H.C Screw #10-32 X 5/8	2
8	04631	Motor Assembly 120v	1
	07177	Motor Assembly 230v	1
9	24073	Power Cord Assembly 120v	1
	24213	Power Cord Assembly 230v	1
	24227	Power Cord Assembly SGP	1
10	24223	Magnet/Safety Switch Assem. 120v	1
	24219	Magnet/Safety Switch Assem. 230v	1
11	10971	SHC Screw 1/4-20 X 1/2	2
12	24051	Quill Stop	1
13	24125	Spring	1
14	04207	Set Screw 3/8-16 X 3/8	1
15	24193	Spline Shaft Extension	1
16	05400	Housing Assembly	1
17	40077	SHC Screw 1/4-20 X 1"	4
18	24198	Seal 1/2 ID X 11/16 OD	1
19	24199	Quill / Arbor Assembly	1
20	04620	Front Panel Assembly 120v	1
	04665	Front Panel Assembly 230v	1
21	01116	SHC Screw #10-32 X 1	4
22	24077	SHC Screw #10-32 X 7/8	4
23	24195	Spring	1
24	24126	O-Ring	2
25	24194	Spring Plunger	1
26	04158	SCR Self-Tap 10-24 X 3/8	1
27	10517	Retaining Ring	1
28	50038	#10 Lock Washer	4
29	90028	1/4" Lock washer	4
30	04307	#10 Flat washer	4
31	05372	Grease, Lubrplate	.01oz

* See Following Pages For Assembly Breakdowns.

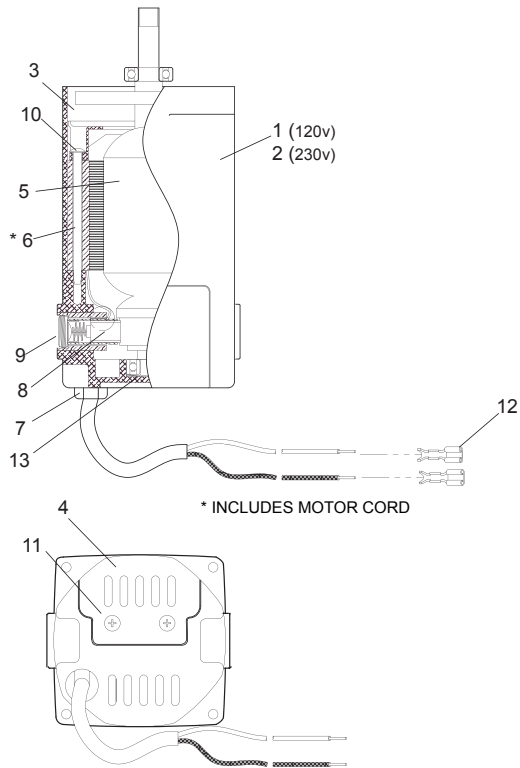


*These Parts Are Included In Kit 24230.

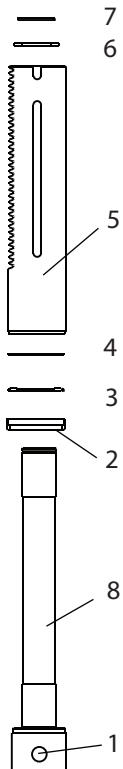
04625 Gear Box Assembly			
Item	Part #	Description	Qty
1	24229	Gear Shift Handle	1
2	24046	Gear Switch Plate	1
3	24038	Gear Shift Pin	1
4	24039	Gear Shift Yoke	1
5	24037	Dowel Pin 3/16 X 1-1/4	1
6	24036	Gear Shift Spacer	2
7	24101	SHSLD Screw 1/4 X 3/8	1
8	04157	FHSC Screw #10-32 X 3/8	4
9	05740	Spring	1
10	04640	Gear Box Assembly (includes a-c)	1
10a	24096	Lip Seal	1
10b	05181	Hougren Label	1
10c	24060	Drill Speed Label	1
11	24027	Gear & Shaft Assembly	1
12	24026	Gear 32/39 Tooth	1
13	24105	Gear & Shaft Assembly 15/20 Tooth	1
14	24104	Gear & Shaft Assembly 14 Tooth	1
15	24103	Gear & Shaft Assembly 15 Tooth	1
16	24102	Spline Shaft Assembly	1
17	04623	Cover & Bearing Assembly	1
18	24030	Key 3/16 sq. X 1.70	1
19	24082	SHC Screw 6-32 X 3/8	3
20	40038	SHC Screw 10-32 X 5/8	6
21	24152	Grease Lubriplate GR132	
22	24095	Lip Seal	1
23	24100	Ball Bearing	4



24223 120v Magnet Assembly 24219 230v Magnet Assembly			
Item	Part #	Description	Qty
1	24222	Magnet Assembly 120v	1
	24220	Magnet Assembly 230v	1
2	10990	Safety Switch Assy.	1
3	24221	Plunger Assembly	1
4	04909	Safety Switch Bracket	1
5	10983	Shield	1
6	10971	Screw SHC 1/4-20 X 1/2	2
7	10972	Screw BHC 6-32 X 7/8	2
8	17271	Spring	1
9	41046	Screw SHC 10-32 X 1/2	2
10	24144	"D" Ring 1" Wide	1
11	04698	Plate - Chain Hold down	1

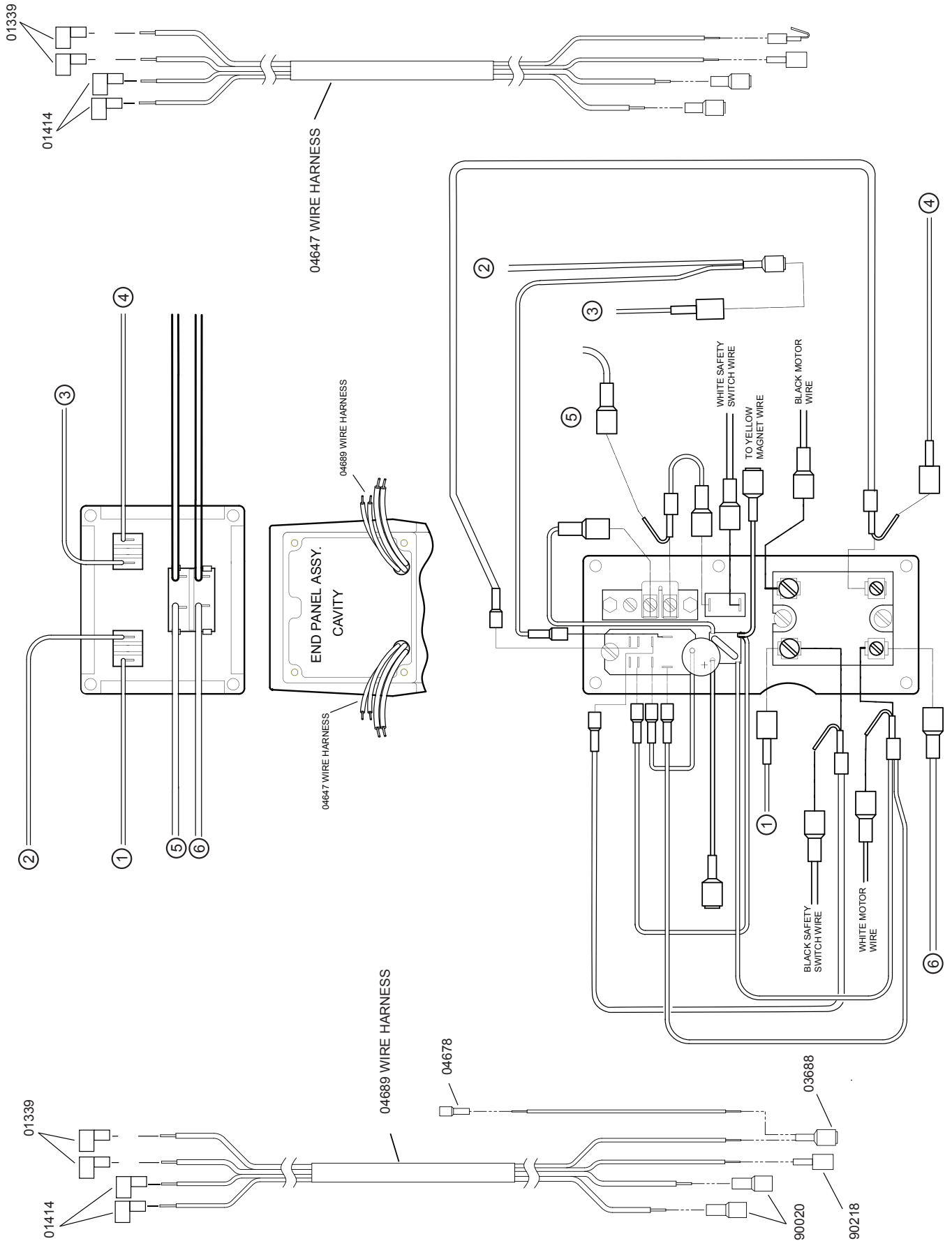


04631 120v Motor Assembly 07177 230v Motor Assembly			
Item	Part #	Description	Qty
1	04633	Motor Housing Assy. 120v	1
1a	04632	HMD505 Label	1
1b	04634	Motor Specs Label 120v	1
2	07178	Motor Housing Assy. 230v	1
2a	04632	HMD505 Label	1
2b	07154	Motor Specs Label 230v	1
3	24114	Motor Baffle	1
4	24066	Access Door	1
5	24041	Armature 120v	1
	24207	Armature 230v	1
6	24042	Field Assembly 120v	1
	24206	Field Assembly 230v	1
7	40373	Strain Relief	2
8	24045	Carbon Brushes 120v/230v	2
9	24044	Brush Cap	2
10	24080	Screw #10 X 3-1/4 Self Tapping	2
11	24153	Screw #10 X 1/2 Self Tapping	2
12	90019	16-14 Connector	2
13	24093	Spring Washer	1



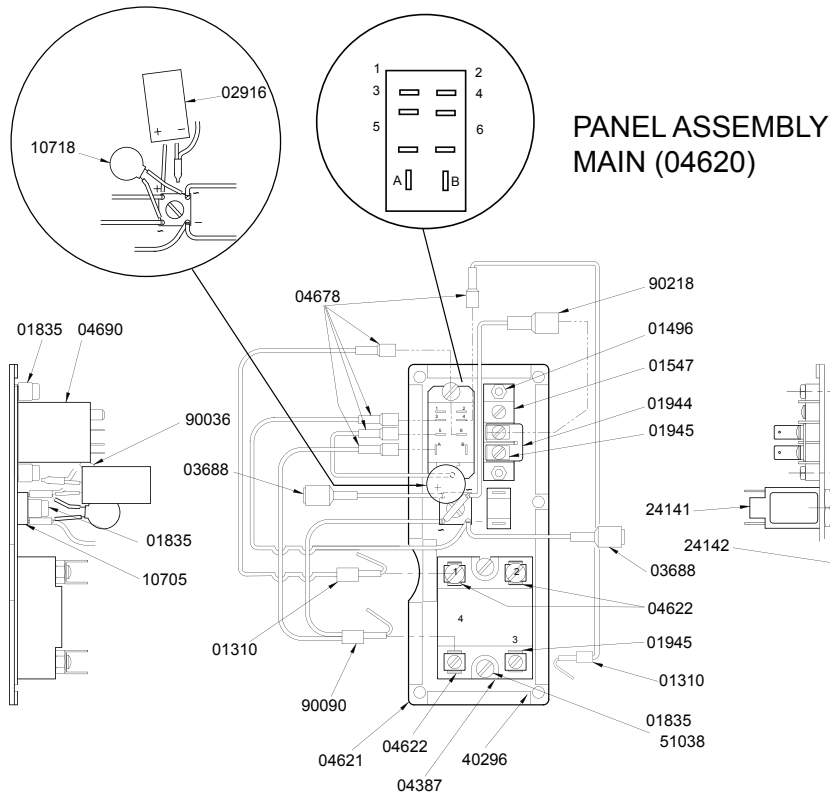
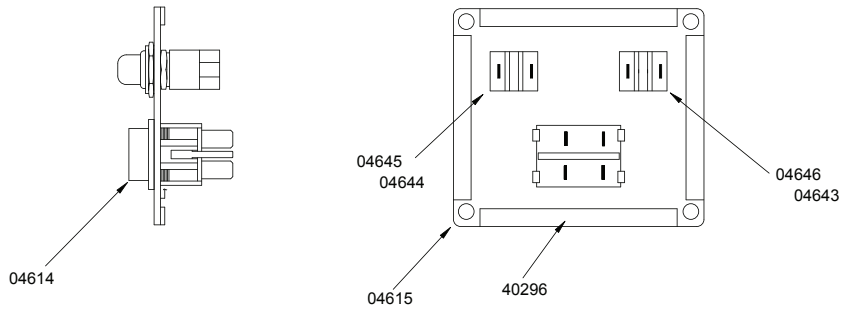
24199 Arbor / Quill Assembly			
Item	Part #	Description	Qty
1	40222	Set Screw 7/16-14 X .305	2
2	24013	Thrust Bearing Seal	1
3	24094	Thrust Bearing	1
4	24091	Thrust Washer	1
5	24016	Quill	1
6	24165	Washer	1
7	24164	Retaining Ring	1

HMD505 HOOK UP DIAGRAM



120v HMD505 PANEL PARTS

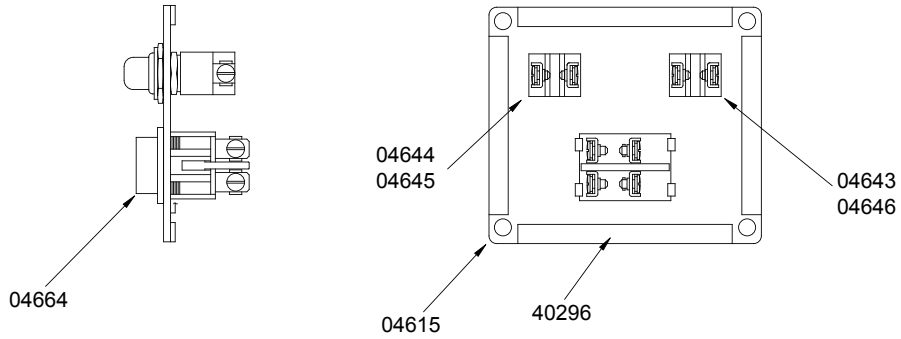
PANEL ASSEMBLY END (04613)



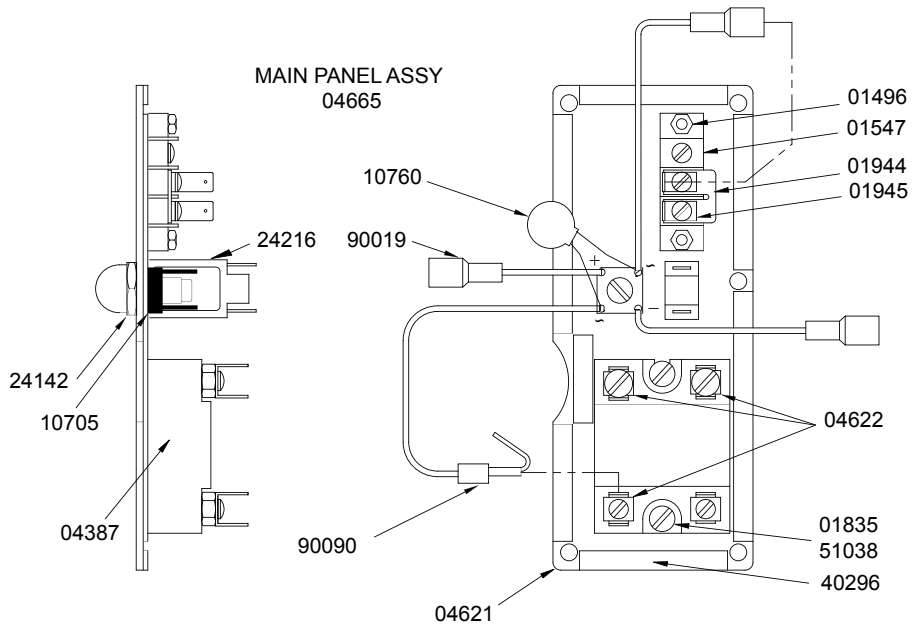
Part #	Description	Qty	Part #	Description	Qty
01310	Terminal Piggy Back	2	04644	Green Seal	1
01496	Spacer	2	04645	Switch On	1
01547	Terminal Strip	1	04646	Switch Off	1
01835	Nylon Nut	5	04678	Terminal Female Insulator	1
01944	Terminal Jumper	1	04690	Relay 15A	1
01945	Terminal Spade	3	10705	Rectifier	1
02916	Capacitor	1	10718	Surge Suppressor	1
03688	Terminal Male Insulator	2	24141	Circuit Breaker 14A	1
04387	Relay 240V	1	24142	Cover	1
04614	Rocker Switch	1	40296	Sponge Seal	1
04615	Faceplate End	1	51038	Flat Washer #6	2
04621	Faceplate Front	1	90036	Adhesive	1
04622	Double Terminal	3	90090	Terminal Piggy Back	1
04643	Red Seal	1	90218	Terminal Female	1

230v HMD505 PANEL PARTS

PANEL ASSY END
04663

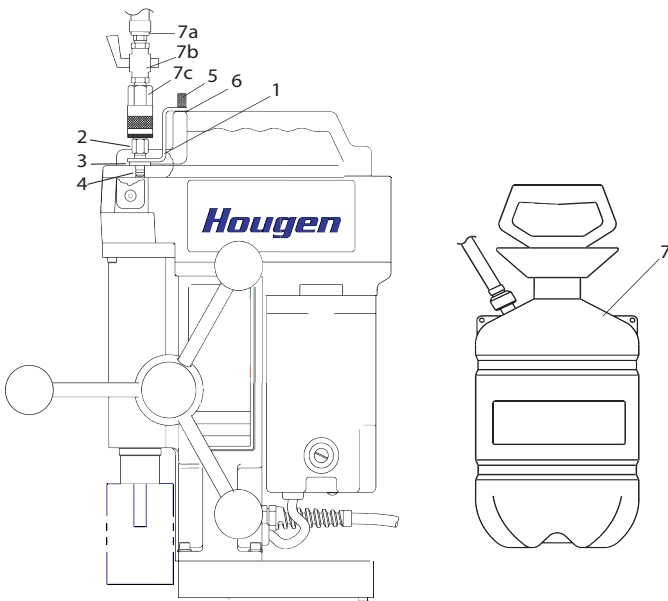


MAIN PANEL ASSY
04665



Part #	Description	Qty	Part #	Description	Qty
01496	Spacer	2	04647	Wire Assy	1
01547	Term Strip	1	04648	Wire Assy	1
01835	Nylon Nut	2	04663	Panel Assy End	1
01944	Jumper Terminal	1	04664	Rocker Switch	1
01945	Spade Terminal	3	04665	Panel Assy Main	1
04387	Relay 240VAC	1	10705	Rectifier	1
04615	Faceplate End	1	10760	Surge Suppressor	1
04621	Faceplate Front	1	24142	Cover Splash	1
04622	Double Terminal	3	24216	Circuit Breaker 7 Amp	1
04643	Seal Red	1	40296	Seal	2 ft
04644	Seal Green	1	51038	Flat Washer	2
04645	Switch - ON	1	90019	Terminal Female	3
04646	Switch - OFF	1	90020	Terminal Male	4

OPTIONAL PRESSURIZED COOLANT BOTTLE



24140 Coolant Bottle Assembly			
Item	Part #	Description	Qty
1	24133	Bracket	1
2	05622	Quick Fitting 1/4" Body	1
3	24132	Adapter	1
4	24123	O-Ring	1
5	24110	Thumb Screw	1
6	24168	Flat Nylon Washer	1
7	05630	Coolant Bottle Assembly includes 7a-7c	1
7a	05556	Fitting 1/8 NPT 3/8 Hose	1
7b	01569	Shut Off Valve	1
7c	05621	Quick Connector	1

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