

CHAPTER 9

CUSTOMER SERVICE AND PARTS

FURNISH COMPLETE INFORMATION WHEN ORDERING PARTS - When ordering parts or spares, give the description and the quantity of parts desired, together with the complete nameplate data, including all electrical requirements.

WHERE TO ORDER PARTS - Repair and replacement parts should be ordered from your local Cleaver-Brooks authorized representative.

BOILER HORSEPOWER	SHELL DIAMETER
400 - 800	96"
250 - 350	78"
125 - 200	60"
50 - 100	48"
15 - 100	36"

Cleaver-Brooks
CB PACKAGED BOILER

MODEL SERIAL NO.

MAX. PRESSURE PSI DATE

INPUT BTU/HR GAS GPH OIL

ELECTRICAL REQUIREMENTS

MAIN POWER SUPPLY
 VOLTS PH HZ AMP

MINIMUM CIRCUIT AMPACITY AMP

MAX. RATING OF CIRCUIT PROTECTION AMP

BLOWER MOTOR HP

AIR COMPRESSOR MOTOR HP

OIL HEATER KW

CONTROL CIRCUIT
 120 VOLTS 1 PH HZ 7 AMP

OIL PUMP MOTOR
 VOLTS PH HZ AMP

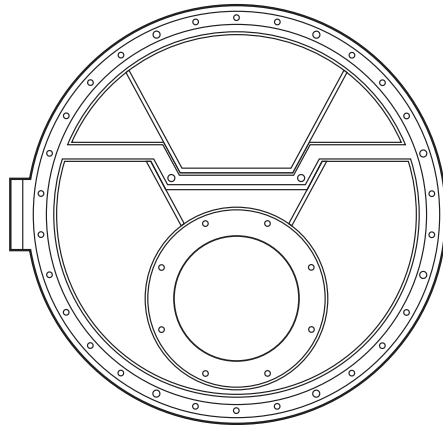
CLEAVER-BROOKS DIVISION
 AQUA-CHEM, INC.
 MILWAUKEE, WISCONSIN, U.S.A.

Contact your local Cleaver-Brooks authorized representative for prompt supply of replacement parts.

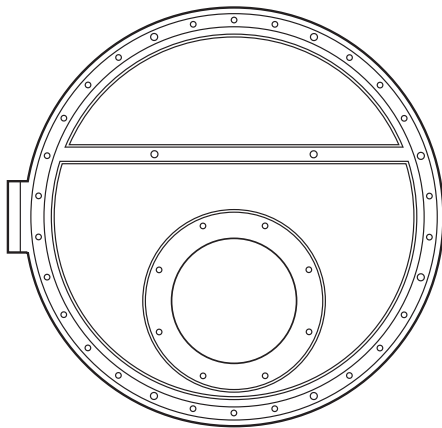
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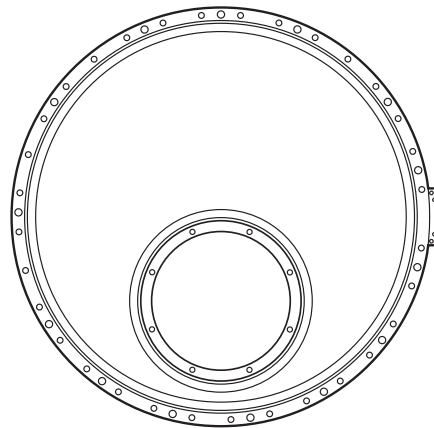
QTY	CB PART #	DESCRIPTION
FIRESIDE		
1	880-216	KIT, GASKET
WATERSIDE		
1	880-211	KIT, GASKET



REF. DWG. B



REF. DWG. D



REF. DWG. E

QTY	CB PART # RH DOOR	CB PART # LH DOOR	DESCRIPTION
1	465-1330		INNER FRONT DOOR Insulated
1		465-1331	INNER FRONT DOOR Insulated
1	457-2868		INNER FRONT DOOR Plate Only
1		457-2869	INNER FRONT DOOR Plate Only

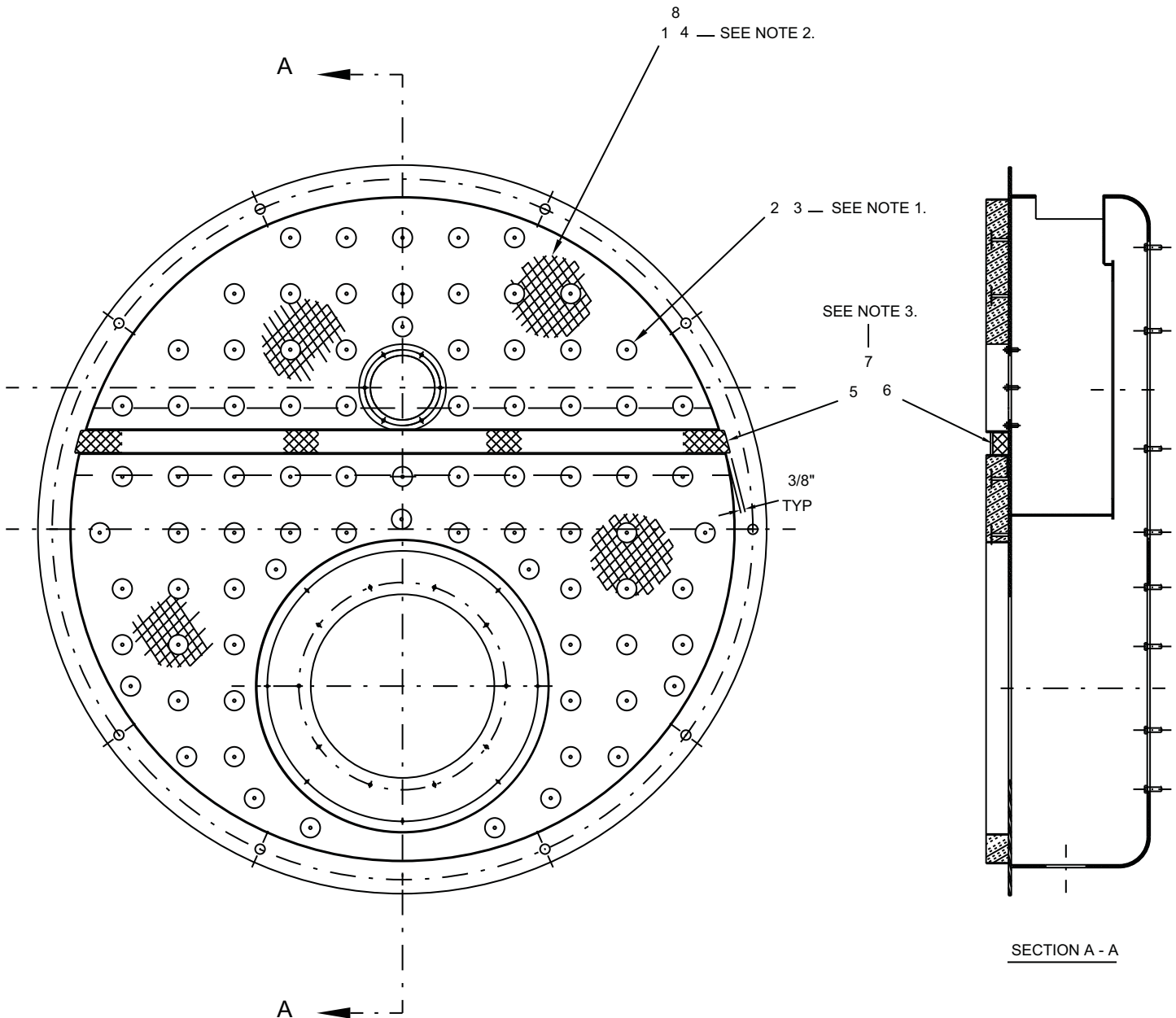
Inner Front Door - Model CB

ITEM	REQ.	PART NO.	DESCRIPTION
1	*	872-500	BULK INSULATION, BLANKET, 1 1/2" THK. 2400°. 8#
2	65	903-297	PIN, WELDING, #10 GA. X 4" LG. ST. STL
3	65	828-39	CLIP, WELDING ST. STL
4	*	872-443	RIGIDIZER, COATING CEMENT, CERA-PREG (SEE NOTE 2)
5	1	872-362	BULK, INSULATION, BLANKET 1" THK. X 2" X 59-1/2" LG
6	12oz.	797-1813	ADHESIVE
7	1	904-12	GASKET, TAPE 1/8" X 2" X 59-1/2" LG.
8	35sq.	930-135	SCREEN ST. STL

* ESTIMATED 15 SQ. FT. OF ITEM 1 REQUIRED.
ESTIMATED 90 OZ. OF ITEM 4 REQUIRED.

NOTES:

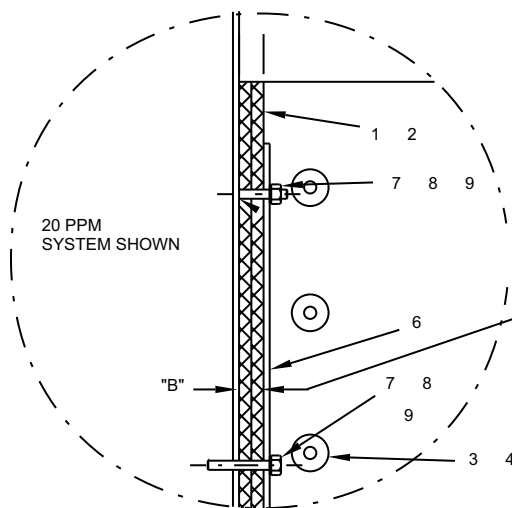
1. ITEM #2 PINS TO BE SPACED ON 4" TO 5" MAX. CENTERS.
2. ITEM #4 RIGIDIZER MUST BE DILUTED W/ EQUAL AMOUNT OF WATER (90 OZ.) TO A 50:50 SOLUTION PRIOR TO APPLYING TO SURFACE OF INSULATING BLANKET AND SCREENING.
3. INSTALL ITEM 5 FIRST, THEN COVER WITH ITEM 7.



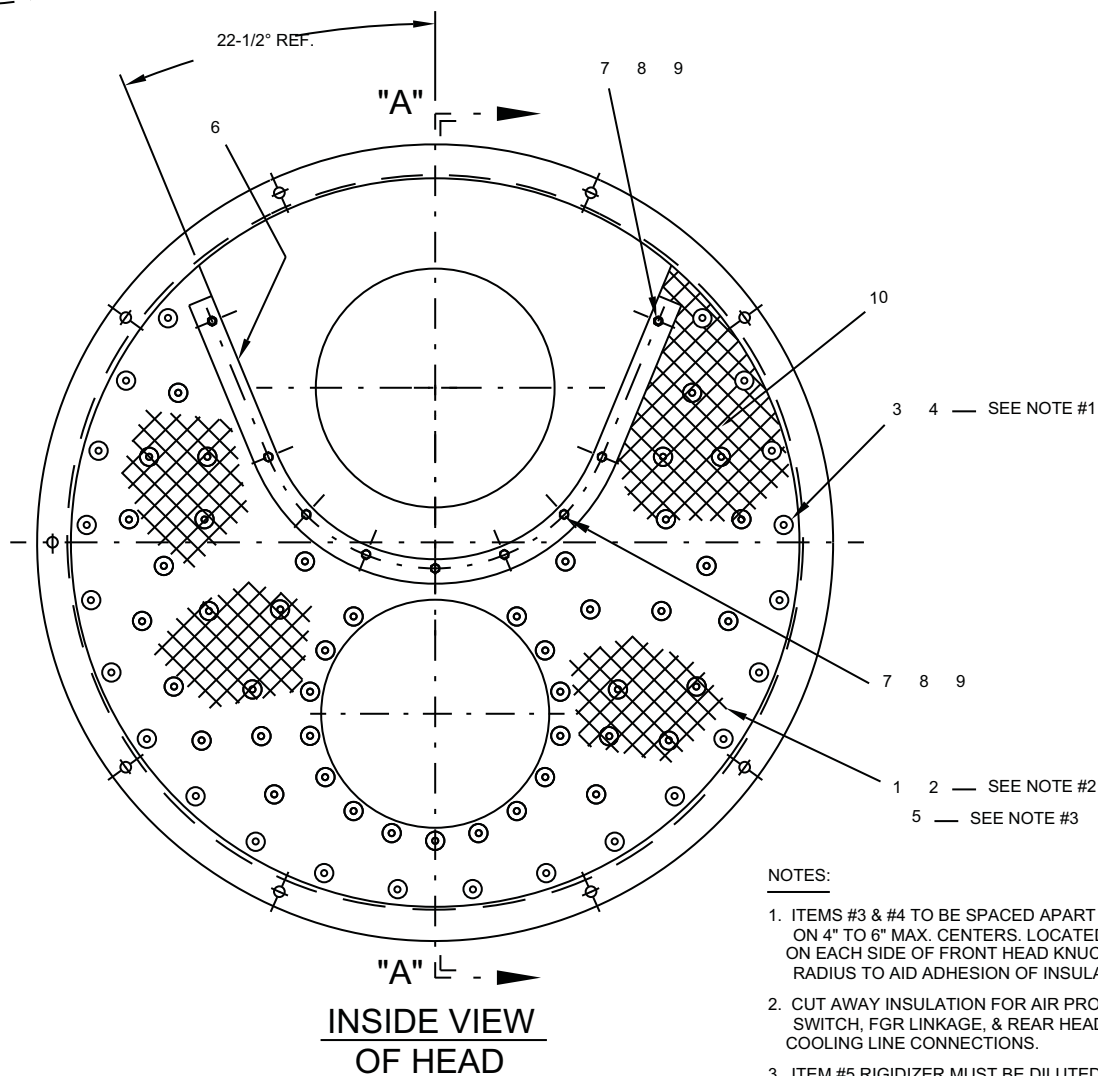
Insulated Front Head Inner Door - Model CB-LE

ITEM	QTY	PART NO.	DESCRIPTION
1	SEE TABLE	872-688	INSULATION, INSWOOL, 1/4" THK
2	SEE TABLE	919-51	ADHESIVE, SCOTCHGRIP 3M, #1300
3	100	903-297	PIN, WELDING, #10 GA. X 2-1/2" LG., ST. STL.
4	100	828-39	CLIP, WELDING, ST. STL.
5	150 OZ	872-443	RIGIDIZER, COATING CEMENT, CERA-PREG **
6	1	65B804	RETAINER, INSULATION. 60" DIA. "LE"
7	5	841-690	STUD, 3/8"-16 X 1" LG.
8	5	869-30	NUT, HEX, 3/8"-16
9	5	952-83	LOCKWASHER, 3/8"
10	25 SQ. FT.	930-135	SCREEN, 1/2" 19 GA. ST. STL.

** SEE NOTE 3



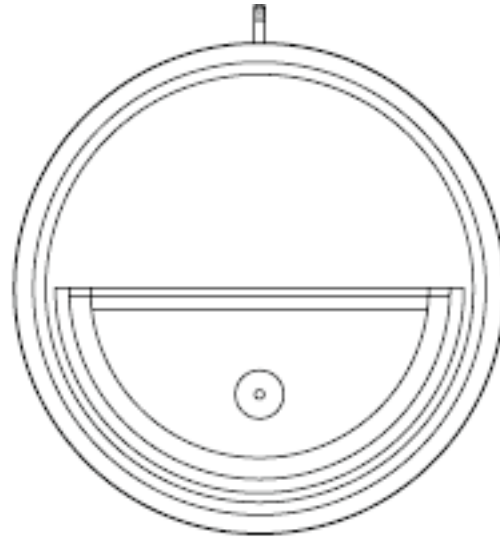
ASSEMBLY P/N	IFGR RATE	DIMENSION "B"	ITEM #1 QTY	ITEM #2 QTY
465C1675	30-25 PPM	.25" SINGLE THICKNESS	28 SQ FT	150 OZ.
465 1679	20 PPM	.50 DOUBLE THICKNESS	56 SQ FT	300 OZ.



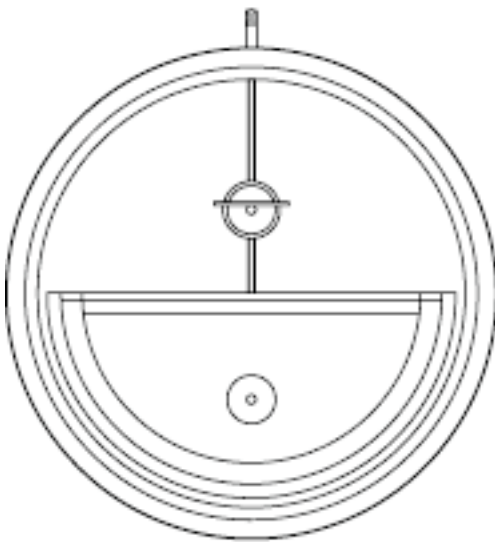
NOTES:

- ITEMS #3 & #4 TO BE SPACED APART ON 4" TO 6" MAX. CENTERS. LOCATED ON EACH SIDE OF FRONT HEAD KNUCKLE RADIUS TO AID ADHESION OF INSULATION.
- CUT AWAY INSULATION FOR AIR PROVING SWITCH, FGR LINKAGE, & REAR HEAD COOLING LINE CONNECTIONS.
- ITEM #5 RIGIDIZER MUST BE DILUTED W/ EQUAL AMOUNT OF WATER (150 OZ) TO A 50:50 SOLUTION PRIOR TO APPLYING.

Insulated Front Head - Model CB-LE



REF. DWG "A"



REF. DWG. B

QTY	CB PART # WITH DAVIT TO 200 psi	DESCRIPTION	250 psi and up
1	465-1537	REAR HEAD W/7" RELIEF DOOR	465-1987
1	465-153	REAR HEAD W/12" RELIEF DOOR	465-1988
1	465-1632	REAR HEAD W/O RELIEF DOOR	465-1986

Insulated Rear Head

ITEM	QTY	PART NO.	DESCRIPTION	USED ON
1	1	49-C-8	DRY OVEN	-
2	1	32-107	GASKET, DRY OVEN (SEE DWG 32-B-106)	-
3	8	841-513	STUD, MACH., 1/2" - 13 X 2-1/8" LG. (T- 5/8" #3 THD., N- 1-1/8" #2 THD.)	-
4	8	952-108	WASHER, STD., 1/2"	-
5	8	869-29	NUT, HEX., 1/2" - 13, BRASS	-
6	1	32-B-106	GASKET, DRY OVEN	-
7	8	952-106	WASHER, STD., 3/8"	-
8	8	869-37	NUT, HEX., 3/8" - 16, BRASS	-
9	7#	872-390	CEMENT, JOINT MORTAR, TROWLEZE H-124	-
10	16	94-B-130	REFRACTORY BRICK, DRY OVEN	STD C.B.
	16	94-415	REFRACTORY BRICK, DRY OVEN (SEE 94-B-130)	F.G.R. ONLY
11	17	94-A-203	TILE, FURNACE	-

NOTES:

1. NO CUT BRICKS OR TILES TO BE INSTALLED IN UPPER 120° QUADRANT OF FURNACE OR DRY OVEN.
2. PACK ALL TILES AND BRICKS TIGHTLY W/ MALLET AND REMOVE ALL EXCESS CEMENT - 1/16" TYPICAL JOINT / 1/8" MAX. ONLY APPLIED BETWEEN TILES AND BRICKS. ALL TILES AND BRICKS SHOULD FIT TIGHT TO FURNACE OR DRY OVEN WALLS W/ NO EXPANSION SPACE BETWEEN.
3. STAGGER ALL CEMENTED JOINTS (SEAMS) BETWEEN ALL TILES AND BRICKS.
4. AFTER EACH HALF COURSE OF TILES OR BRICKS IS INSTALLED, CLEAN UP EXCESS CEMENT AND FILL IN ANY OPEN JOINT (SEAM) AREAS.
5. FOR 60" DIA. C.B. STANDARD BOILER USE BRICKING TOOL #98-C-282.
FOR 60" DIA. F.G.R. BOILER USE BRICKING TOOL #98-283 (SEE DWG. 98-C-282).
6. FACE OF ITEM 1 (DRY OVEN) FLANGE MUST BE FLUSH W/ FACE OF BOILER FLANGE RING

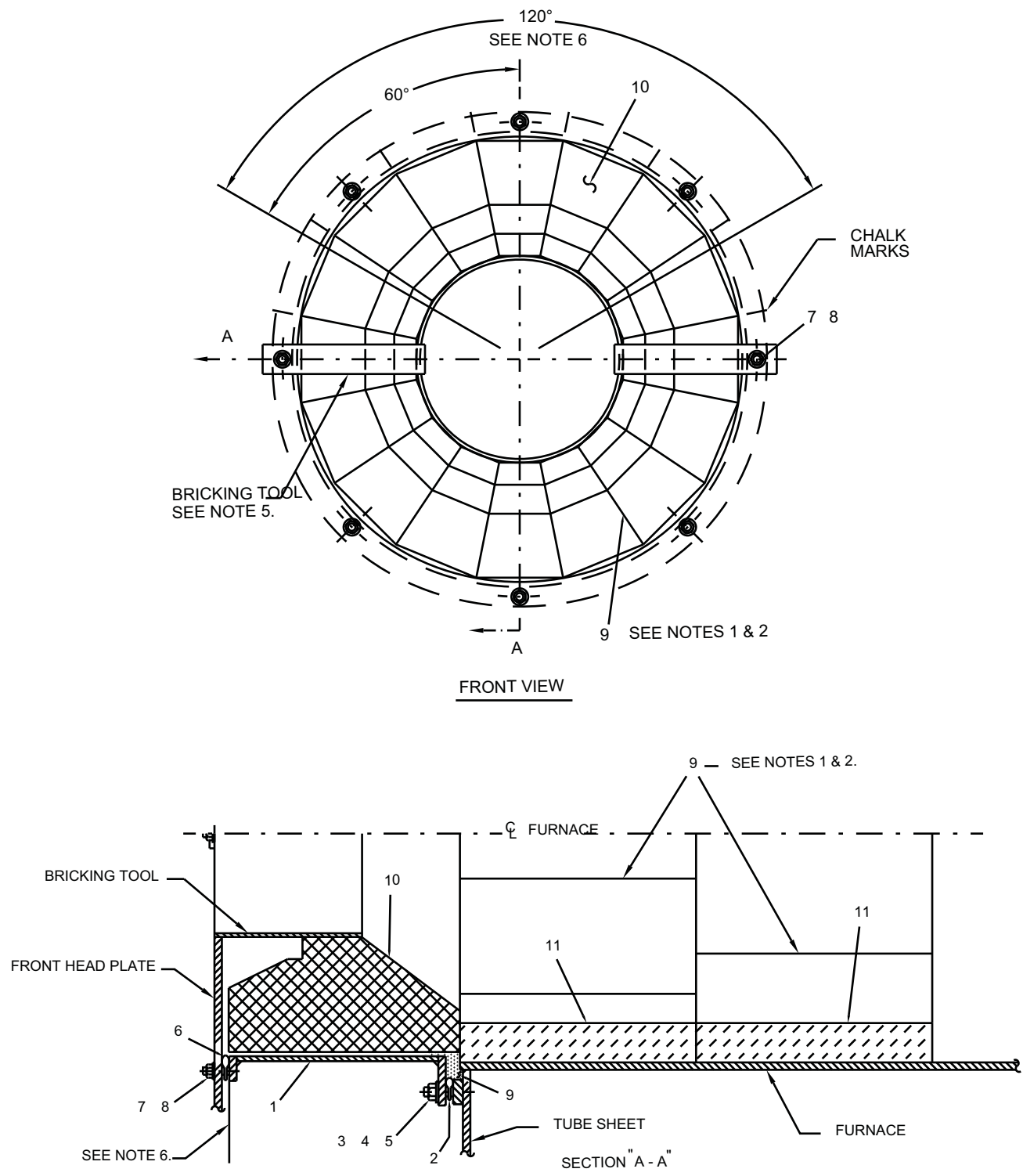
INSTALLATION PROCEDURE

NOTE: THE FOLLOWING PROCEDURE IS TYPICAL FOR ALL C.B. STANDARD 60" DIA. AND F.G.R. BOILERS.

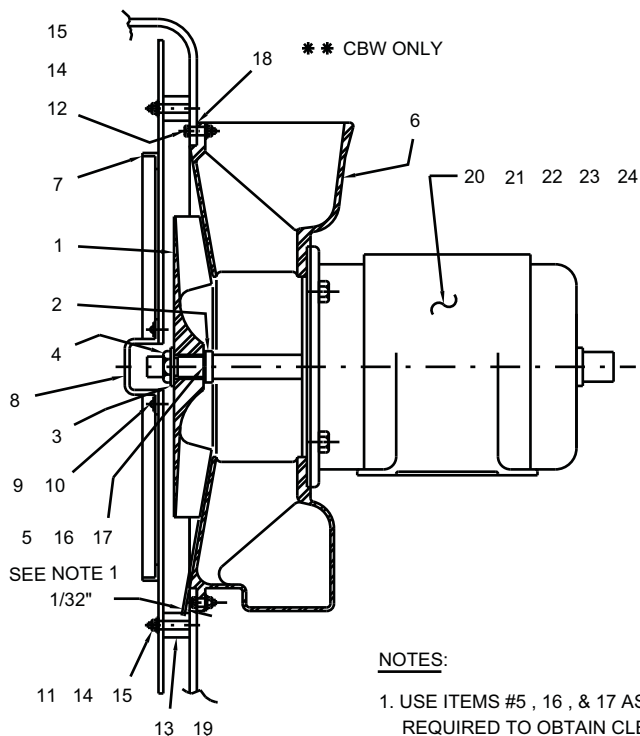
1. INSTALL TWO (2) ROWS OF ITEM 11 (TILES) INTO FURNACE.
METHOD FOR INSTALLING TILES - START FROM BOTTOM OF FURNACE AND WORK AROUND BOTH SIDES TO TOP AND DETERMINE IF A CUT TILE IS NEEDED. IF A CUT TILE IS REQUIRED, CUT TO SUIT, SHIFT TILES, AND RE-INSTALL W/ CUT TILE LOCATED ON BOTTOM HALF OF FURNACE (SEE NOTE 6).
2. INSTALL ITEM 1 (DRY OVEN) AND ITEMS 2 & 6 (GASKETS) W/ STUDS, WASHERS, & NUTS AS SHOWN.
3. INSTALL BOTTOM HALF OF ITEM 10 (REFRACTORY BRICKS) INTO ITEM 1 (DRY OVEN).
4. ATTACH BRICKING TOOL (SEE NOTE 5) TO FRONT HEAD PLATE W/ WASHERS & NUTS AND FINISH BRICKING TOP HALF OF ITEM 1 (DRY OVEN) AS SHOWN.

METHOD FOR INSTALLING TOP UPPER HALF OF REFRACTORY BRICKS - MEASURE OFF UPPER HALF OF DRY OVEN REFRACTORY BRICKS W/ TEMPLATE. MARK W/ CHALK AND DETERMINE IF A CUT BRICK IS NEEDED. IF A CUT BRICK IS REQUIRED, LOCATE BELOW THE 2 & 10 O'CLOCK POSITIONS. IF BRICK IS CUT, ANGLE OF CUT SURFACE SHOULD BE THE SAME AS ORIGINAL BRICK. IF CUT BRICK MEASURES LESS THAN 1/2" FULL WIDTH, CUT TWO (2) PIECES.
5. AFTER ITEM 9 (JOINT CEMENT) HARDENS (2 HOURS APPROXIMATE), REMOVE BRICKING TOOL.

Furnace Liner & Bricking Model CB and CB-LE



Furnace Liner & Bricking Model CB and CB-LE



NOTES:

1. USE ITEMS #5 , 16 , & 17 AS
REQUIRED TO OBTAIN CLEARANCE
OF 1/32".

* MAXIMUM QUANTITY SHOWN, BASED ON REQUIREMENTS.

TABLE ITEM ①

BOILER H.P.	50 HZ	OP CODE	60 HZ	OP CODE
125	192-C-43	A7	192-C-42	A7
150	192-C-46	A7	192-C-43	A7
200	192-C-70	A7	192-C-46	A7

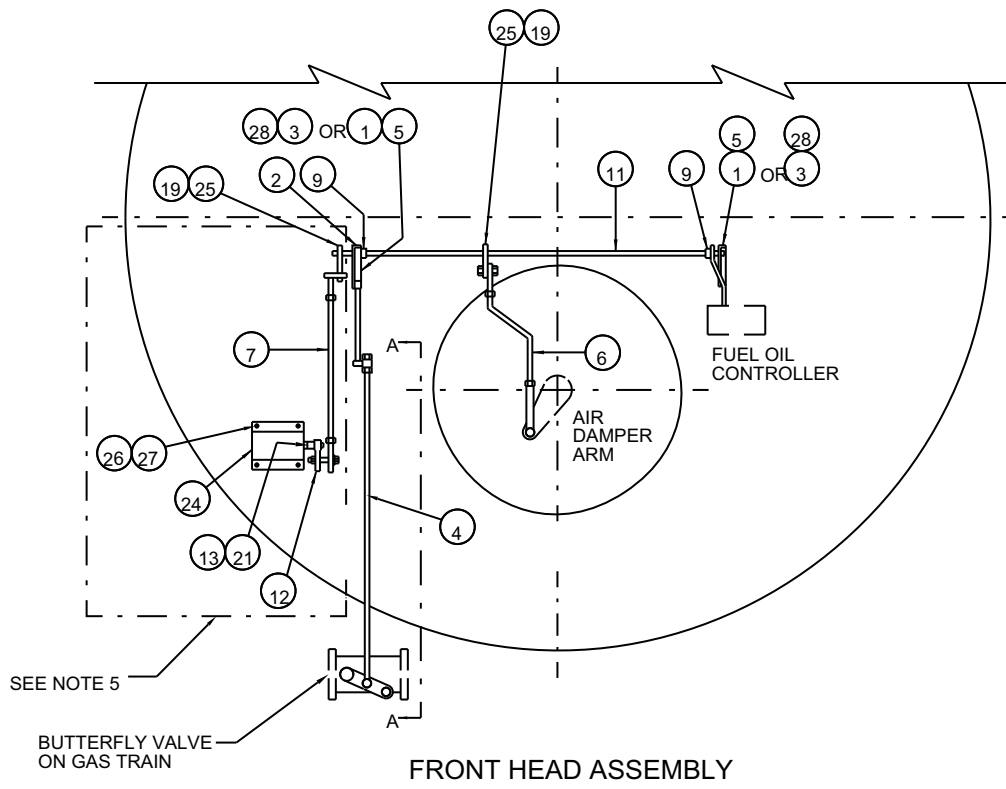
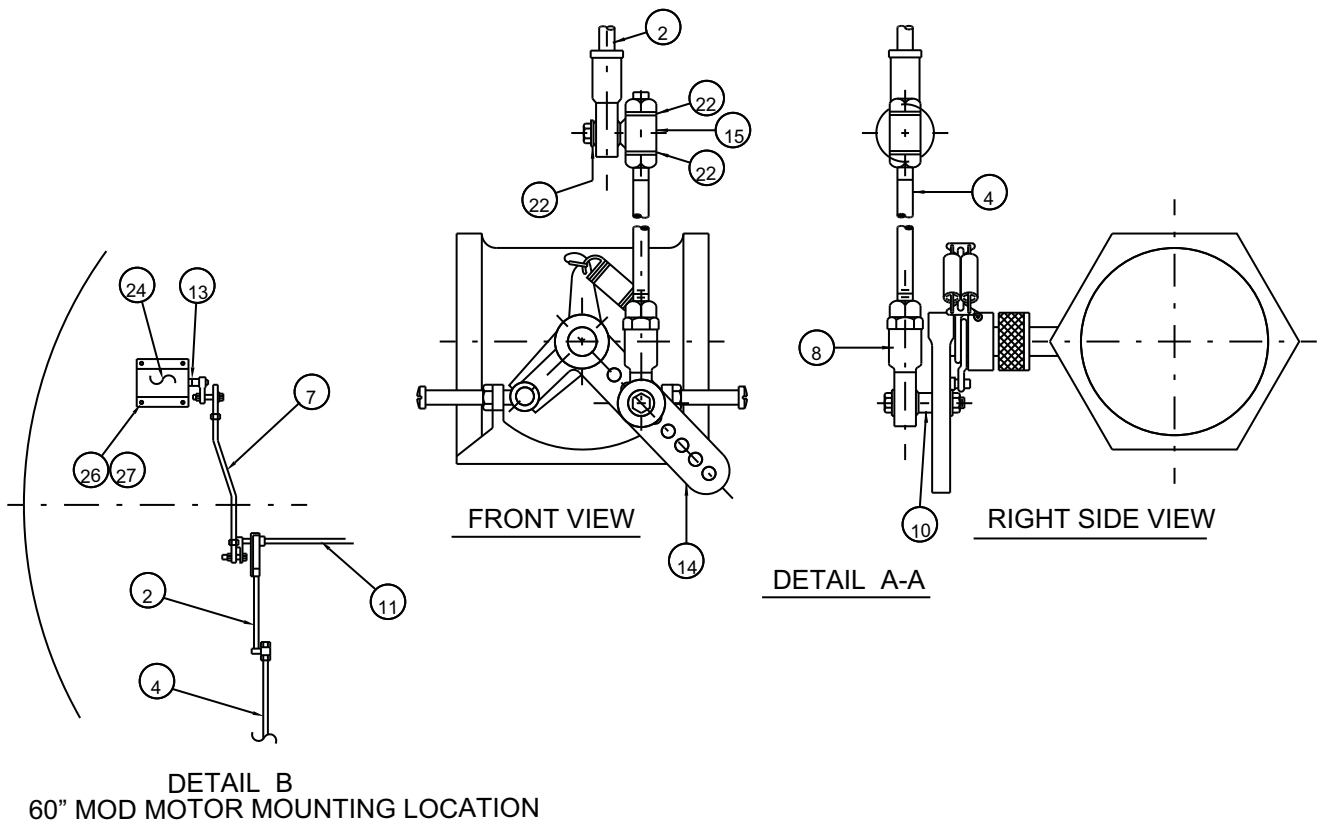
BLOWER MOTOR ITEM ②①

BOILER H.P.	MODEL	FUEL	MOTOR H.P.	60 HZ.				50 HZ.	
				ODP		TEFC	TEFC & HI-EFF.	MOTOR H.P.	ODP
				200-220- 460V	600V	200-230- 460V	200-230- 460V		220-380V
125	CB	ALL	5	894-2414	894-2415	-	894-3393	5	894-2416
150	CB	GAS	5	894-2414	894-2415	-	894-3393	5	894-2416
		OIL & COMB.	7-1/2	894-2419	894-2420	894-3216	894-3394	7-1/2	894-3167
200	CB	GAS	10	894-2435	894-2436	894-3141	894-3398	15	894-2453
		OIL & COMB.	15	894-2451	894-2452	894-3183	894-3400	15	894-2453

Motor & Impeller Model CB and CB-LE

ITEM	QTY	PART NO.	DESCRIPTION	OP CODE	USED ON
1	1	SEE TABLE	IMPELLER		SEE TABLE
2	1	77-61	SPACER, IMPELLER	A7	200HP @ 50HZ
3	1	77-A-184	SPACER, IMPELLER	A4,A7	200HP @ 60HZ
	1	77-61	SPACER, IMPELLER	A4,A7	200 H.P. @60 HZ.
4	1	869-119	NUT, SELF LOCKING, JAM	A4,A7	ALL
5	2	91-A-60	WASHER, SPACER	A4,A7	200HP @ 50HZ
	2	91-148	WASHER, SPACER, 0.010" (91-A-59)	A7	200HP @ 50HZ
6	1	85-D-43	SUPPORT, MOTOR, & AIR HOOD	A2	ALL
7	1	22-B-10	PLATE, DIFFUSER	A2	ALL
8	1	19-A-375	COVER, SHAFT	A4	ALL
9	2	860-114	SCREW,MACH..RD.HD.1/4"-20 X 5/16"LG.		ALL
10	2	952-92	LOCKWASHER, 1/4"		ALL
11	6	952-298	WASHER		ALL
12	8	868-159	CAPSCREW,HEX.HD.,3/8"-16 X 1-3/4"LG.		ALL
13	6	77-62	SPACER	A4	200 H.P.
	6	77-71	SPACER	A4	125 H.P. ONLY
	6	77-66	SPACER	A4	150 H.P. ONLY
14	* 30	952-93	LOCKWASHER, 3/8"		ALL
15	* 29	869-30	NUT, HEX., 3/8"-16		ALL
16	2	91-59	WASHER, SPACER, .005	A4,A7	ALL
17	*2	91-61	WASHER, SPACER, 1/16"	A7	ALL
18	1	32-A-690	AIR HOUSING GASKET	A2	ALL
19			NOT USED		
20	1	SEE TABLE	BLOWER MOTOR	A7	-
21	1	1-B-478	ADAPTER RING	A2	-
22	4	868-176	CAPSCREW, HEX HEAD, 1/2" x 2" LG.	-	-
23	4	952-94	LOCK WASHER, 1/2"	-	-
24	4	869-15	NUT, 1/2"	-	-

Motor & Impeller - Model CB and CB-LE

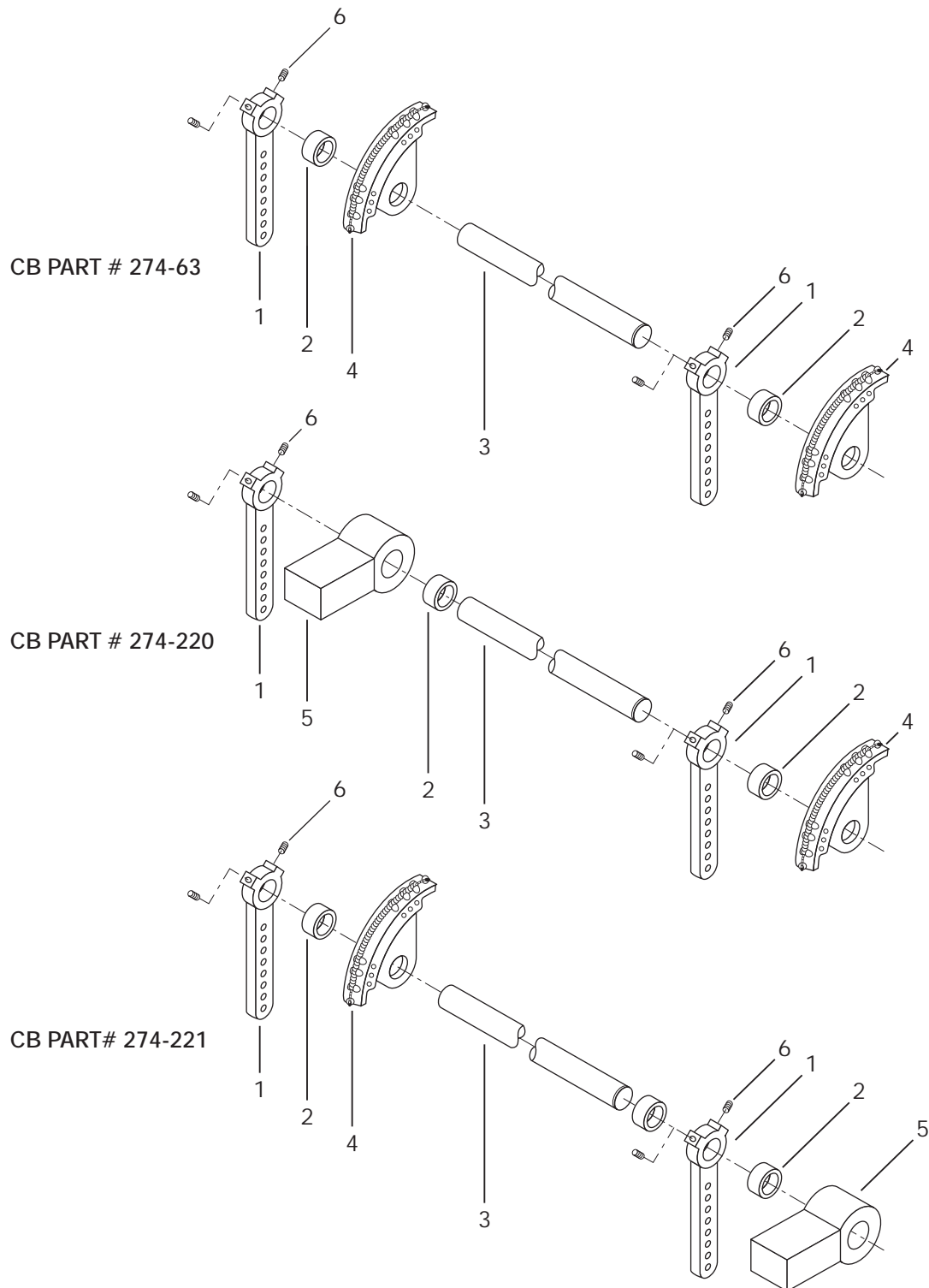


Front Head Linkage - Model CB

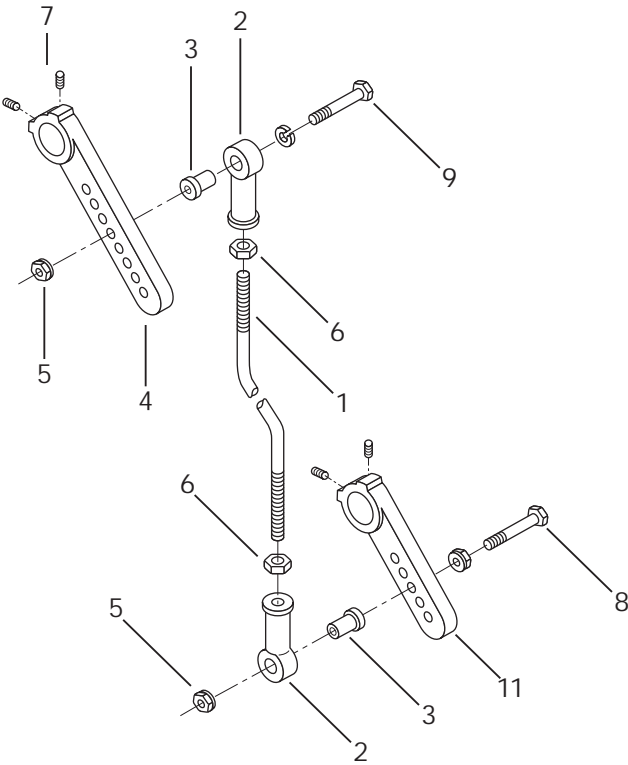
60 DIA BOILER							
ITEM	QUANTITY			PART NO.	DESCRIPTION	WHERE USED	OPTION
	GAS	OIL	CMB				
①	1	1	2	313-A-5	CAM ASSEMBLY		BM,A4
②	1	-	1	295-99	GAS VALVE STEM ASSY.		A4
③	1	1	-	85-A-1926	SUPPORT - JACKSHAFT		BM,A4
④	1	-	1	67-A-17	ROD LINKAGE, GAS VALVE		A4,A8
⑤	1	1	2	853-454	GASKET		A4
⑥	1			476-00054	AIR DAMPER LINKAGE		A4
⑦	1			476-00053	MOTOR TO SHAFT LINKAGE		A4
⑧	1			883-17	BALL JOINT		BM,A4
⑨	2			824-21	COLLAR		BM,A4
⑩	1			10-288	BUSHING-BALL JOINT		BM,A4
⑪	1			74-A-211	JACKSHAFT		A4
12	-			NOT USED	-		--
⑬	1			10-A-91	BUSHING		BM,A4
⑭	1			287-A-24	GAS VALVE & ARM DAMPER		BM,A4
⑮	1			68-A-32	END ROD LINKAGE		BM,A4
16	-			--	----		--
17	--			--	----		--
18	--			--	----		--
19	4			860-101	SET SCREW 1/4-20 x 1/2"		--
20	--			--	----		--
21	--			--	----		--
22	3			952-93	LOCKWASHER 3/8"		--
23	-			NOT USED	-		--
⑳	1			506-479	MOD. MOTOR	NON-UL	D3
	1			506-479	MOD. MOTOR	NON-HAWK	D3
	1			894-3513	MOD. MOTOR	HAWK	C3
25	--			--	----		--
26	4			868-137	BOLT, HEX HD 1/4-20 X 1" LG.		--
27	4			952-92	LOCKWASHER 1/4"		--
㉑	2			77-371	CAM SPACERS	FUEL 200, 400, 700	BM,A4

- NOTES:
1. WITH DAMPER AT FULLY CLOSED POSITION, SET JACKSHAFT DAMPER CONTROL ARM AND BURNER DAMPER CONTROL ARM AT ANGLES SHOWN. WHEN CONNECTING LINKAGE ASSEMBLY TO CONTROL ARMS, ADJUST AS NECESSARY TO ACHIEVE DESIRED EXCESS AIR LEVEL AT LOW FIRE.
 2. FOR HIGH TURNDOWN BURNER, DELETE (1) OF ITEM #25 FROM BASIC BILL OF MATERIAL AND FURNISH ITEM #23 (96" ONLY).
FOR 48" DIA. BOILER ONLY, REPLACE ITEM #25 WITH ITEM #31.
 3. ITEM #3 & 28 USED ON GAS ONLY (FOR 78" AND 96").
FOR 48" AND 60" DIA. BOILERS, ITEM #3 IS USED FOR ALL FUELS, AND ITEM #28 IS USED ON GAS OR OIL/GAS COMB. ONLY.
 4. ITEM #3 & 28 USED ON OIL ONLY (FOR 78" AND 96").
FOR 48" AND 60" DIA. BOILERS, ITEM #3 IS USED FOR ALL FUELS, AND ITEM #28 IS USED ON GAS OR OIL/GAS COMB. ONLY.
 5. FOR 78" & 96" DIA. BOILERS, MOUNT MOD. MOTOR & JACKSHAFT LINKAGE ASSEMBLY AS SHOWN ON FRONT HEAD ASSEMBLY. FOR 48" AND 60" DIA. BOILERS, MOUNT ITEMS AS SHOWN ON DETAIL "B".
 6. FOR 78" LE, ITEM 11 CALLED OUT ON 476-C-237 & 476-C-238.

Front Head Linkage -Model CB/CB-LE

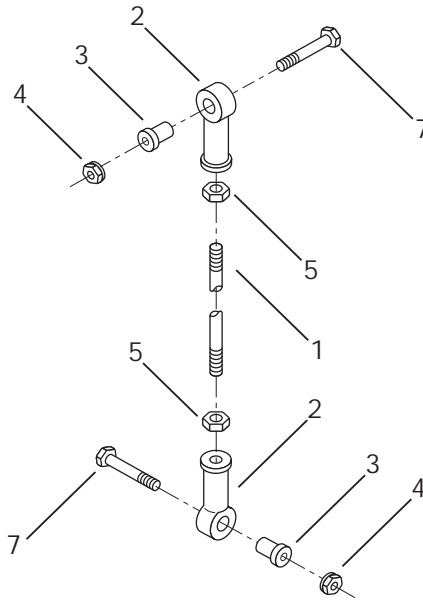


Jackshaft Retrofit Assembly Kits



CB PART # 476-53

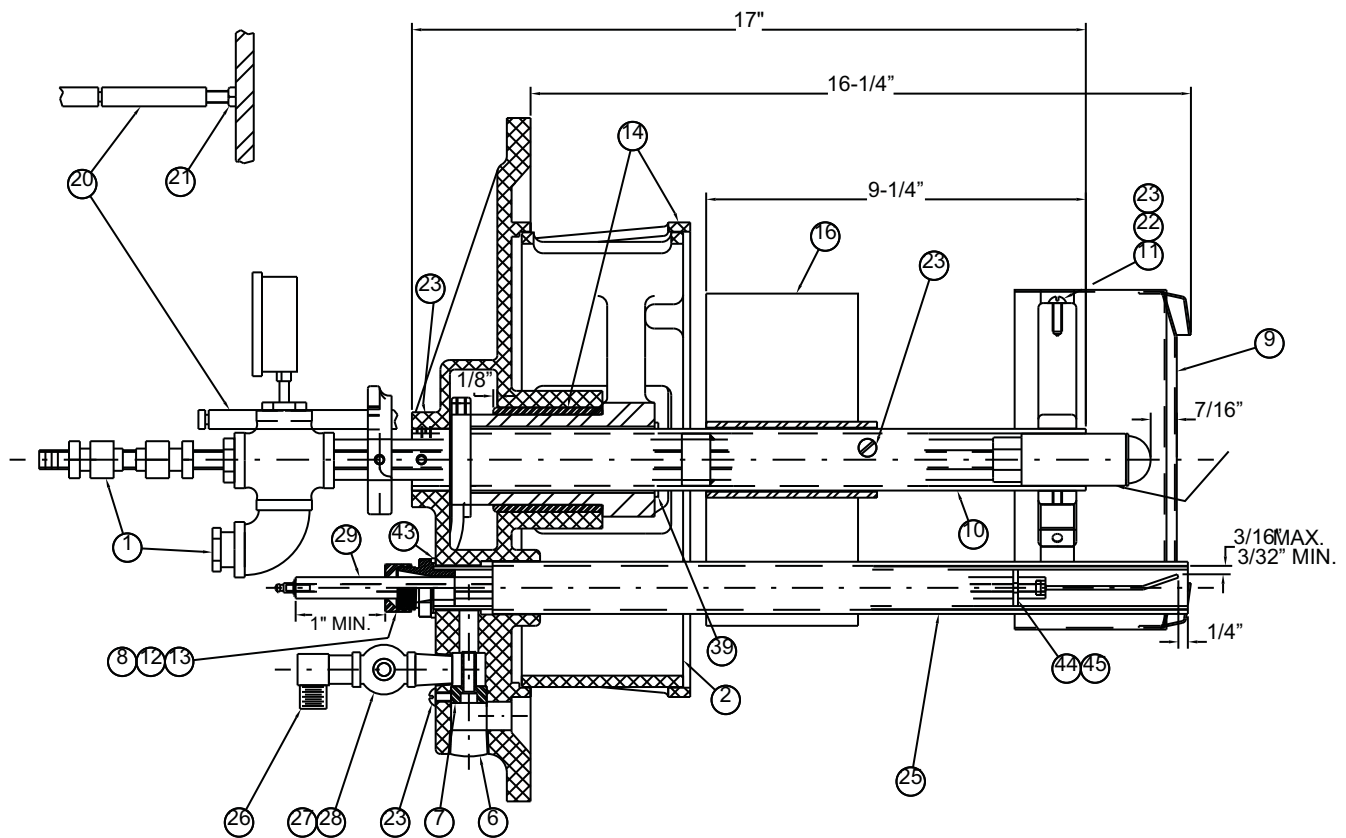
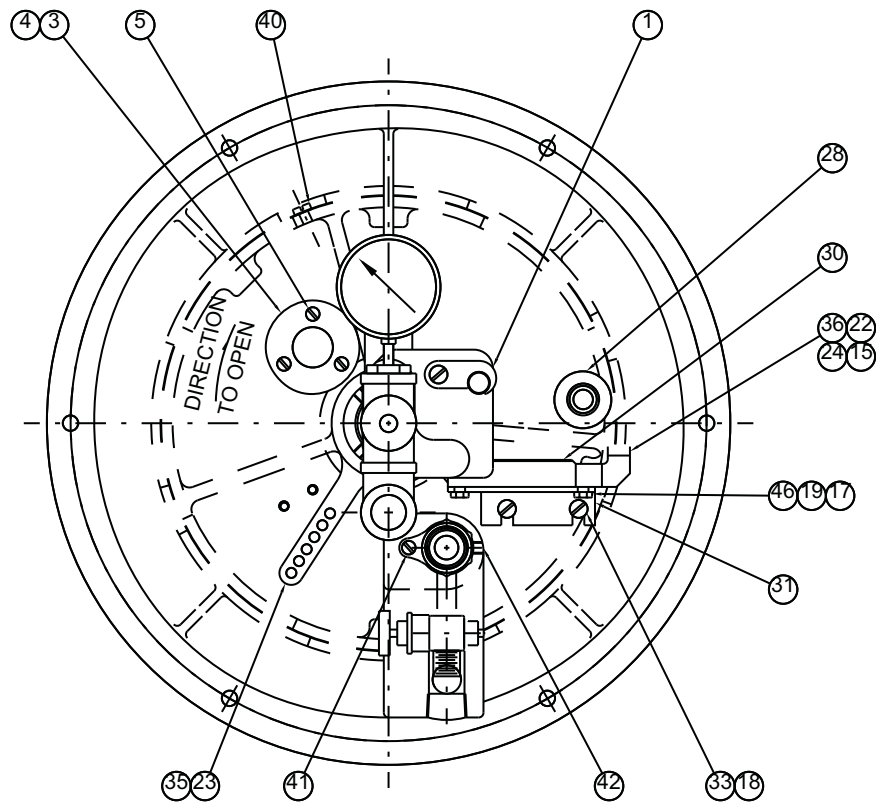
Item	REQ.	Part #	Description
1	1	67-16	Activation Rod
2	2	883-17	Ball Joint
3	2	10-288	Ball Joint Bushing
4	1	2-47	Modulation Motor Arm
5	2	869-21	Hex Nut, 1/4" - 20
6	2	869-22	Hex Nut, 3/8" - 24
7	2	860-39	Set Screw
8	1	868-138	Capscrew, 1/4" - 20, 1-1/4" LG
9	2	868-139	Capscrew, 1/4" - 20, 1-1/2" LG
10	Not Used		
11	1	2-96	Damper Motor Arm



CB PART # 476-54

Item	REQ.	Part #	Description
1	1	67-109	Damper Linkage Rod
2	2	883-17	Ball Joint
3	2	10-288	Ball Joint Bushing
4	2	869-21	Hex Nut, 1/4" - 20
5	2	869-22	Hex Nut, 3/8" - 24
6	-		Not Used
7	2	860-39	Capscrew, 1/4" - 20, 1 1/2" LG

Air Damper Linkage Kit



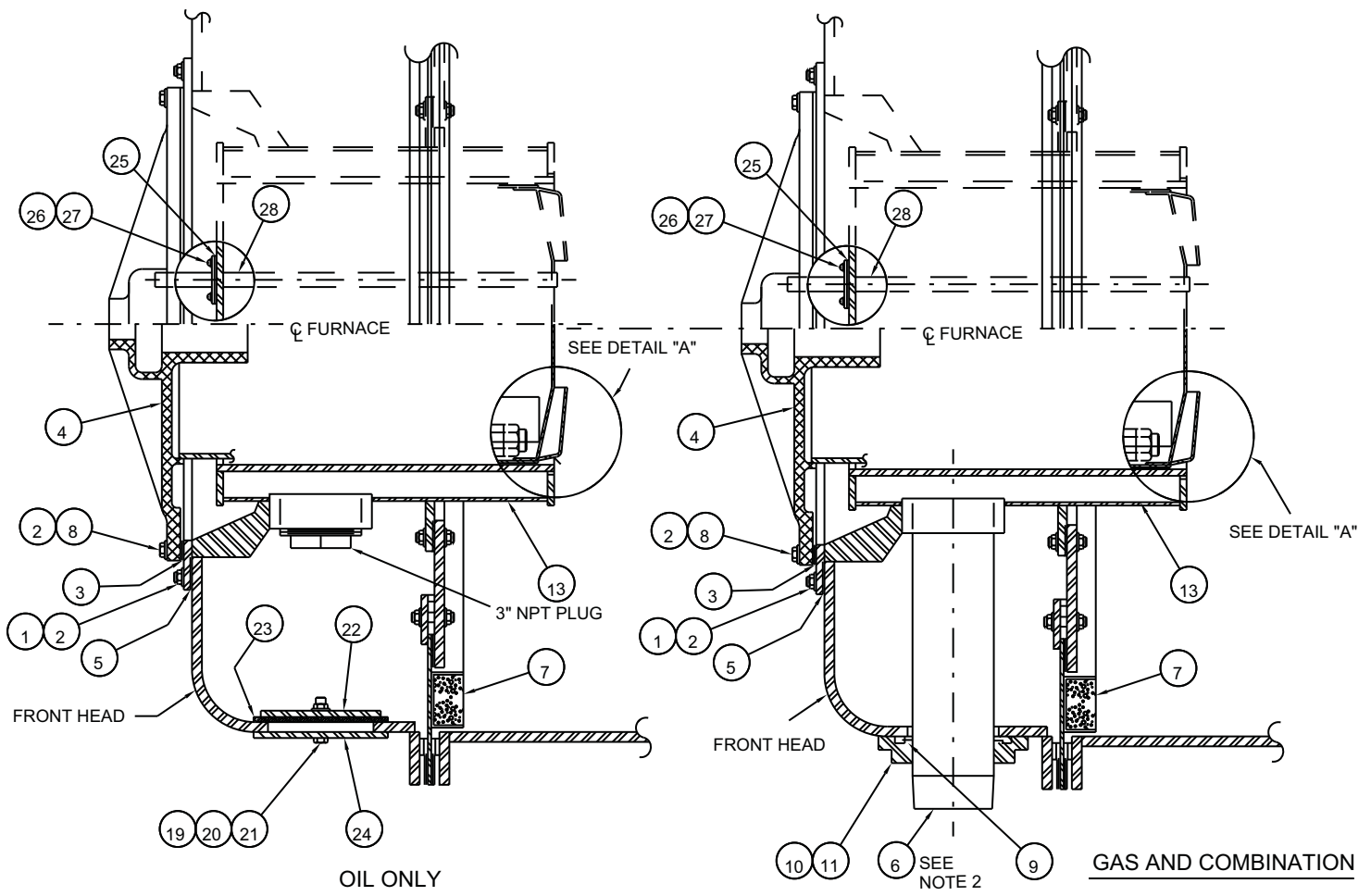
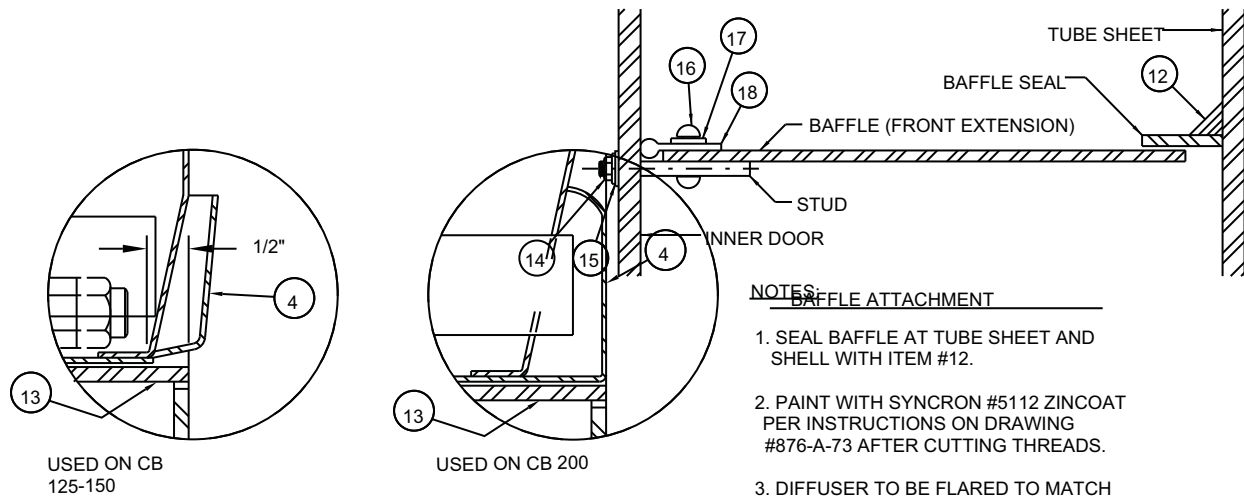
Burner Drawer-Gas Pilot Models 100-600, 125-200HP CB-LE

ITEM	QTY	PART NO.	DESCRIPTION
1	1	SEE TABLE	NOZZLE-GUN ASSEMBLY
2	1	108-B-47	DAMPER
3	2	851-77	MICA, SHEET, PORT HOLE, #36 GA. X 1-1/2" DIA.
4	1	65-A-11	RETAINER SIGHT HOLE
5	3	860-176	MACHINE SCREW, RD. HD. 10-24 X 1/4" LG.
6	1	858-310	PLUG, PIPE, COUNTER SUNK, 3/4"
7	1	48-A-98	VENTURI, GAS PILOT
8	1	904-36	GROMMET, RUBBER
9	1	SEE TABLE	DIFFUSER ASSEMBLY AIR
10	1	90-A-1512	TUBE, BURNER DRAWER
11	1	134-B-47	SPIDER
12	1	34-A-7	GLAND, PACKING
13	1	90-A-1708	TUBE & ADAPTER ASS'Y, GAS PILOT
14	1	59-5768	PLATE, BACK BEARING ASSEMBLY (SEE 59-A-918)
15	1	827-6	BULK CONDUIT, GREENFIELD 3/8" X 11" LG
16	1	22-A-122	DIFFUSER, AIR STABILIZER
17	2	860-91	MACHINE SCREW, RD. HD. #10-32 X 1-1/2" LG.
18	3	952-92	LOCKWASHER, 1/4"
19	2	869-9	NUT, HEX #10-32
20	1	56-A-21	PIN-LOCKING
21	1	869-36	NUT, HEX 5/16"-18
22	5	860-158	SETSCREW, SOCKET HD. 1/4"-20 X 5/16" LG
23	9	860-39	SETSCREW, SOCKET HD. 1/4"-20 X 3/8" LG
24	2	848-100	BUSHING FIBER
25	1	90-A-1709	TUBE GAS PILOT
26	1	845-194	ELBOW, MALE, 5/8" ODC X 1/2" NPT X 90°
27	1	825-30	COCK, GAS, TEE HEAD
28	2	857-153	NIPPLE, 1/2" X 1-1/2" LG
29	1	435-B-127	ELECTRODE, IGNITION ASS'Y
30	1	836-996	SWITCH, LIMIT
31	1	8-A-3057	BRACKET, LIMIT SWITCH
32	1	848-2	CONNECTOR, BOX, SQUEEZE TYPE
33	6	860-7	MACH, SCREW-RD. HD. 1/4"-20 X 1/2" LG
34	-	NOT USED	NOT USED
35	1	2-A-31	ARM, DAMPER
36	1	848-16	CONNECTOR, BOX, SQUEEZE TYPE
37	-	NOT USED	NOT USED
38	-	NOT USED	NOT USED
39	1	73-A-26	SEALER, RING
40	1	868-210	CAPSCREW, SOCKET HD. 1/4"-20 X 1/2" LG
41	1	860-201	MACHINE SCREW, 10-24 NC RD. H. X 1/8"
42	1	860-161	SET SCREW-SOCKET HD. 5/16"-18 NC X 1/2"
43	1	853-1	O-RING
44	1	134-A-53	HOLDER-ELECTRODE
45	1	860-244	SET SCREW-SOCKET HD. 6-32 X 1/8"
46	2	952-117	LOCKWASHER #10

Burner Gun Assembly

BOILER	P/N IT. 1
125 30 PPM	251-B-35
150 30 PPM	251-B-35
200 30 PPM	251-B-37
125 & 150 60 PPM	251-B-35
200 60 PPM	251-B-37

Burner Drawer-gas Pilot Models 100-600, 125-200HP CB-LE

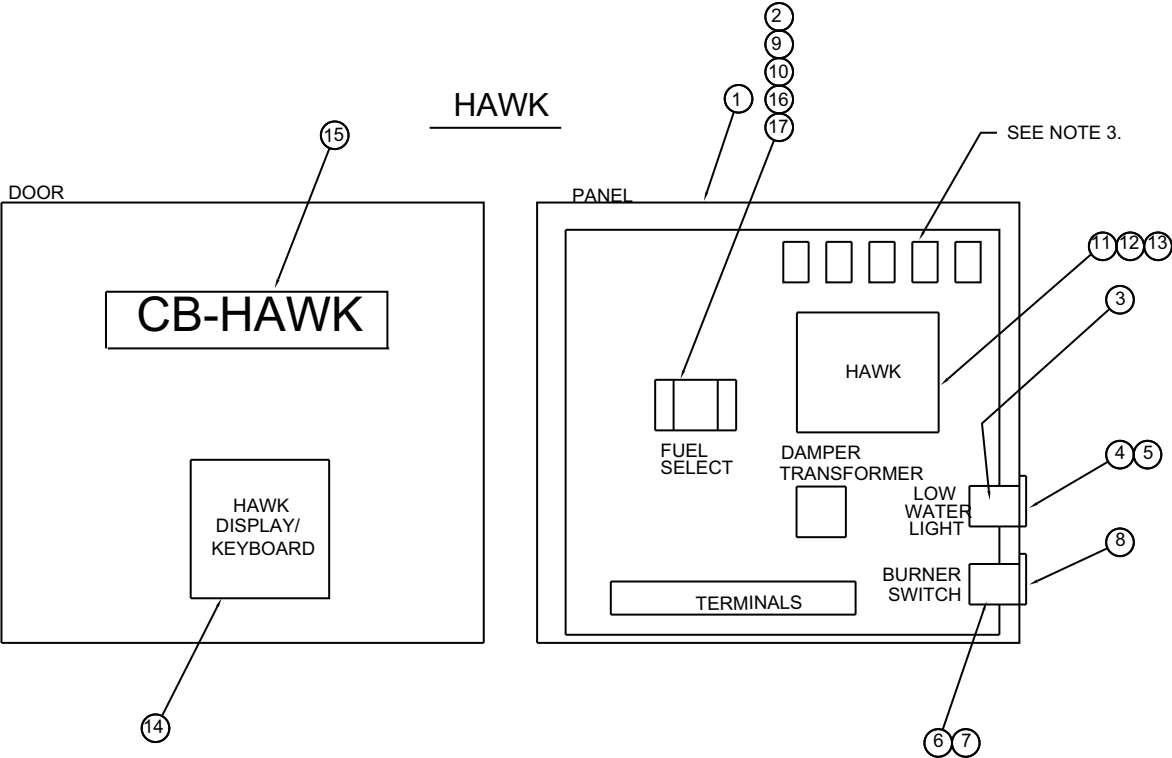


ITEM	QTY	PART NO.	DESCRIPTION	USED ON
1	8	869-30	NUT, HEX, 3/8"-16	-
2	14	952-93	WASHER, 3/8"	-
3	1	32-A-605	GASKET, BURNER DRAWER TO HOUSING	☆
4	1	SEE TABLE	BURNER DRAWER	-
5	1	32-A-603	GASKET, BURNER HOUSING TO FRT. HEAD	-
6	1	900-79	BULK PIPE, 3" X 13-1/2" LG. TBE.	NAT. GAS/COMBINATION OR PROPANE
7	1	465-B-1330	DOOR, INNER R.H. SWING	CB125-200
	1	465-B-1331	DOOR, INNER L.H. SWING	CB125-200
8	6	868-157	CAPSCREW, HEX HD 3/8-16 X 1-1/4" LG	-
9	1	853-348	BULK PACKING, 1/4" DIA. X 10 "	☆NAT. GAS/COMBINATION OR PROPANE
10	1	65-A-704	RETAINER, MACHINING	☆NAT. GAS/COMBINATION OR PROPANE
11	3	860-15	SETSCREW, SOC HD 3/8-16 X 1/2" LG	NAT. GAS/COMBINATION OR PROPANE
12	6 OZ	872-558	THERMO SILICATE CEMENT	-
13	1	40-D-540	BURNER HOUSING, WELDMENT	*NAT. GAS/COMB.-ALL EXCEPT CBW200
	1	40-580	BURNER HOUSING, WELDMENT	*NAT. GAS/COMB.-CBW 200 ONLY
	1	40-D-581	BURNER HOUSING, WELDMENT	*PROPANE-CB125-150
	1	40-582	BURNER HOUSING, WELDMENT	*PROPANE-CB200 ONLY
14	4	869-29	NUT, HEX, 1/2" BRASS	-
15	8	952-325	WASHER, 1/2" FLAT BRASS	-
16	24	841-A-551	RIVET	-
17	8 FT	971-291	STRIP, PERFORATED	-
18	1	853-394	GASKET, 2" X 96"	-
19	1	869-30	NUT, HEX, 3/8"-16	OIL ONLY
20	1	952-93	LOCKWASHER, 3/8"	OIL ONLY
21	1	868-157	CAPSCREW HEX HD 3/8-16 X 1-1/4" LG	OIL ONLY
22	1	65-A-142	RETAINER, FRONT HEAD COVER	OIL ONLY
23	1	32-A-765	GASKET, FRONT HEAD COVER	OIL ONLY
24	1	19-A-156	COVER, FRONT HEAD PLATE	OIL ONLY
25	1	32-A-497	GASKET, MOUNTING PLATE SCANNER TUBE	-
26	4	952-92	LOCKWASHER, 1/4"	-
27	2	860-7	MACH. SCREW, 1/4-20 X 1/2" LG.	-
28	1	90-A-146	TUBE, SCANNER ASSEMBLY	-

TABLE FOR ITEM 4 BURNER DRAWER (SEE NOTE 3)				
FUEL	100		200-600	700
H.P.	OIL PILOT	GAS PILOT	GAS PILOT	GAS PILOT
125-150	429-D-263	429-D-292	429-D-292	429-D-293
CB200	429-D-257	429-D-294	429-D-294	429-D-295

CONTROL CABINET (HAWK)					
ITEM	QTY	PART NO.	DESCRIPTION	USED ON	OPTION
1	1	283-B-2978	CONTROL CABINET	-	C3
2	1	SEE TABLE 1	SWITCH BRACKET	-	C3
3	1	881-231	PILOT LIGHT	-	C3
4	1	881-232	LENS, RED	-	C3
5	1	118-644	NAMEPLATE, LOW WATER	-	C3
6	1	836-620	SWITCH, OPERATOR	-	C3
7	1	836-623	SWITCH CONTACT BLOCK	-	C3
8	1	118-1382	NAMEPLATE, BURNER OFF-ON	-	C3
9	1	836-746	FUEL SELECTOR SWITCH	FUEL 200,400	C3
10	1	118-196	NAMEPLATE,GAS-OIL	FUEL 200,400	C3
11	1	833-2415	HAWK CHASSIS	-	C3
12	1	833-2421	HAWK AMPLIFIER	-	C3
13	1	833-2418	HAWK PROGRAM MODULE	-	C3
14	1	833-2419	HAWK KEYBOARD/DISPLAY	-	C3
15	1	118-2462	LABEL,CB HAWK	-	C3
16	1	836-210	OIL HEATER SWITCH	FUEL 400,600	C3
17	1	118-204	NAMEPLATE,OIL HEATER	FUEL 400,600	C3

TABLE 1						
ITEM	FUEL SERIES					
	100	101	200	400	600	700
2	-	-	8-801	8-3228	8-801	-



Control Cabinet

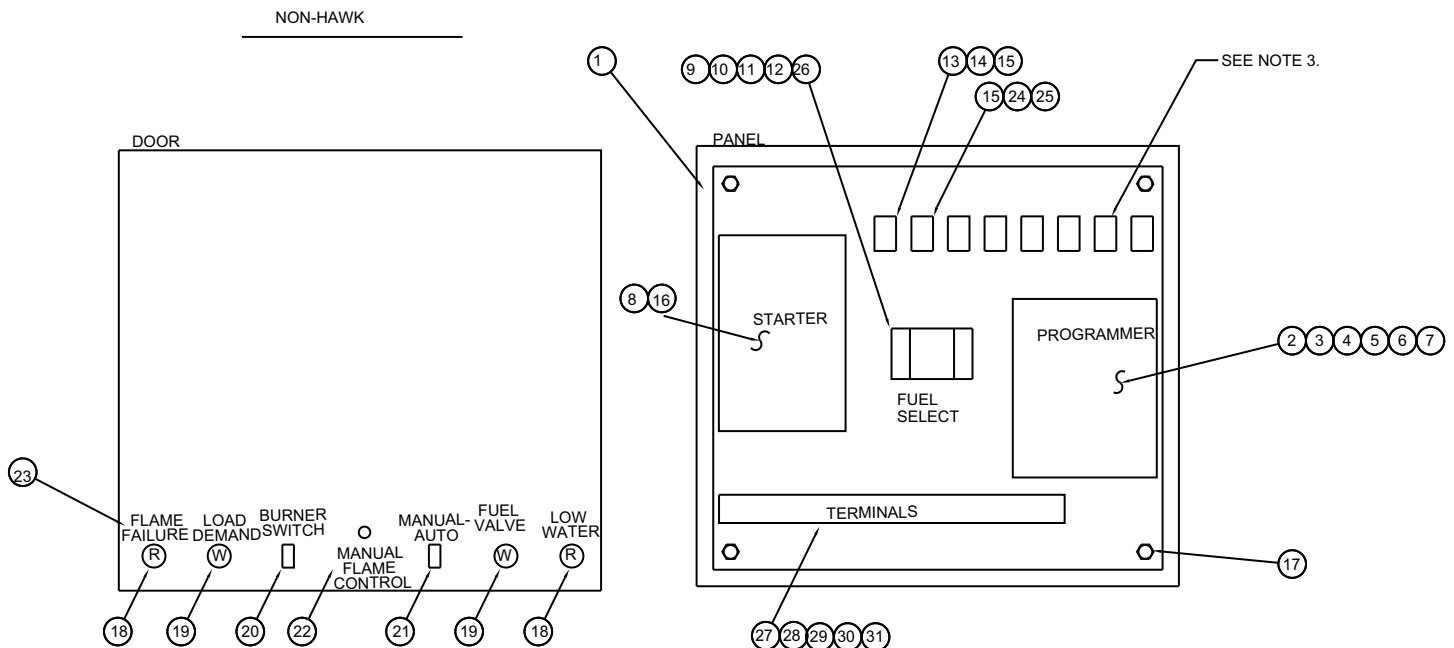
TABLE 1 - ITEM 8					
BM HP	VOLTAGE				
	200-208V	220-240V	346-416V	440-480V	575-600V
2	833-1884	833-1884	833-1884	833-1884	833-1884
3	833-1884	833-1884	833-1884	833-1884	833-1884
5	833-1885	833-1885	833-1884	833-1884	833-1884
7-1/2	833-1885	833-1885	833-1885	833-1885	833-1885
10	833-1886	833-1886	833-1885	833-1885	833-1885
15	833-1197	833-1886	833-1886	833-1886	833-1886
20	833-1197	833-1197	833-1886	833-1886	833-1886
30	NOTE 1	833-1197	833-1197	833-1197	833-1197
40	NOTE 1	NOTE 1	833-1197	833-1197	833-1197
50	NOTE 1	NOTE 1	833-1197	833-1197	833-1197
60	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1

- NOTES: 1. STARTER IS IN OWN ENCL. MOUNTED ON THE FRONT HEAD.
 2. OVERLOADS ARE TO BE SUPPLIED BASED ON MOTOR NAMEPLATE AMP. RATING.
 3. FOR NON-HAWK PANEL, MAXIMUM QUANTITY OF RELAYS, TIMERS, OR COMBINATION OF BOTH IS 8. FOR HAWK PANEL THE MAXIMUM QUANTITY IS 5.

TABLE 2						
ITEM	FUEL SERIES					
	100	101	200	400	600	700
11	-	-	8-801	8-3228	8-801	-

TABLE 3							
FLAME SAFEGARD	ITEM	2	3	4	5	6	7
		BASE	DISPLAY	CHASSIS	AMP. (IR)	MODULE	FD (IR)
CB780	(D4)	833-2725	833-2727	833-2718	833-2722	-	817-1742
CB100E	(D0)	833-2581	833-2714	833-2709	833-2584	833-2583	817-2261
E110	(D5)	833-2693	833-2713	833-2708	833-2384	833-2383	817-1933

CONTROL CABINET (NON-HAWK)					
ITEM	QTY	PART NO.	DESCRIPTION	USED ON	OPTION
1	1	119-405	CONTROL CABINET (W/SUB BASE)	-	D3
2	1	SEE TABLE 3	PROGRAMMER-BASE	-	SEE TABLE 3
3	1		PROGRAMMER-DISPLAY	-	
4	1		PROGRAMMER-CHASSIS	-	
5	1		PROGRAMMER-AMPLIFIER	-	
6	1		PROGRAMMER-MODULE	-	
7	1		PROGRAMMER-FLAME DETECTOR	-	
8	1	SEE TABLE 1	STARTER (SEE NOTE 2)	-	D3
9	1	836-746	SWITCH GAS-OIL	FUEL 200,400	D3
10	1	118-196	NAMEPLATE GAS-OIL	FUEL 200,400	D3
11	1	SEE TABLE 2	BRACKET	-	D3
12	1	836-210	SWITCH OIL HEATER	FUEL 400,600	D3
13	1	833-2261	RELAY	FUEL 200,400	D3
14	1	833-2263	BASE	FUEL 200,400	D3
15	2	841-1483	SCREW SELF-TAPPING	WITH ITEM 14,25	-
16	3	841-801	SCREW SELF-TAPPING	WITH ITEM 8	-
17	4	841-89	NUT SELF-LOCKING	-	-
18	2	881-225	LIGHT ASSEMBLY RED LENS	-	D3
19	2	881-226	LIGHT ASSEMBLY WHITE LENS	-	D3
20	1	836-210	SWITCH BURNER	-	D3
21	1	836-211	SWITCH MANUAL - AUTO	-	D3
22	1	836-209	SWITCH MANUAL FLAME CONTROL	-	D3
23	1	118-1689	NAMEPLATE	-	D3
24	1	833-2261	RELAY (AIR PURGE)	FUEL 400,600	D3
25	1	833-2263	BASE (AIR PURGE)	FUEL 400,600	D3
26	1	118-204	NAMEPLATE-OIL HEATER	FUEL 400,600	D3
27	38	832-749	TERMINAL LUG	-	-
28	1	832-751	END BARRIER	-	-
29	2	832-752	RETAINING CLIP	-	-
30	1	832-750	CHANNEL	-	-
31	1	832-753	MARKING STRIP	-	-



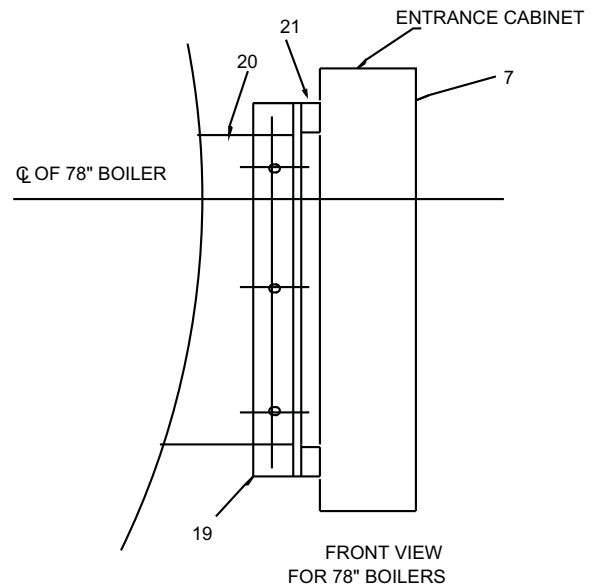
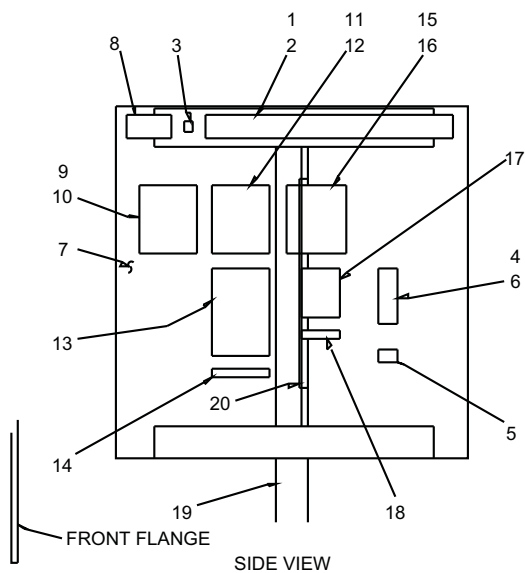
Control Panel CB,CBLE

BILL OF MATERIAL FOR ENT. BOX

ITEM	QTY	PART NO.	DESCRIPTION	USED ON	OPTION
1	1	434-61	TERMINAL STRIP, 25 TERMS		C8
2	1	118-1865	PLATE, I.D. FOR TERM. STRIP		C8
3	1	884-78	GROUND LUG		C8
4	1	848-223	FUSE BLOCK, CONTROL CIRCUIT		C8
5	1	118-297	NAMEPLATE, DECAL CONTROL CIRCUIT		C8
6	1	832-347	FUSE, FRN-15	-	C8
7	1	848-1083	ENT. BOX (18 X 15 X 6) (NEMA 1)	FUEL 700	C8
	1	848-338	ENT. BOX (24 X 18 X 6) (NEMA 1)	FUEL 100, 101, & 200	
	1	848-375	ENT. BOX (24 X 24 X 6) (NEMA 1)	FUEL 400 & 600 & "LE"	
8	1	SEE TABLE	MAIN POWER TERMINAL BLOCK	DETERMINED BY TOTAL AMP LOAD	C8
9	3	SEE TABLE	BLOWER MOTOR FUSE	-	C8
10	*	SEE TABLE	BLOWER MOTOR FUSE BLOCK	-	C8
11	3	SEE TABLE	AIR COMPRESSOR MOTOR FUSE	-	C8
12	*	SEE TABLE	AIR COMPRESSOR MOTOR FUSE BLOCK	-	C8
13	1	SEE TABLE	AIR COMPRESSOR MOTOR STARTER	-	C8
14	1	118-1667	AIR COMPRESSOR EMBLEM	W/ ITEMS 11, 12, & 13	C8
15	3	SEE TABLE	OIL HEATER FUSE	-	C8
16	*	SEE TABLE	OIL HEATER FUSE BLOCK	-	C8
17	1	833-2197	OIL HEATER CONTACTOR	W/ ITEMS 15 & 16	C8
18	1	118-299	OIL HEATER EMBLEM	W/ ITEMS 15, 16, & 17	C8
19	-	8-275	UNIVERSAL UPRIGHT	-	
20	1	8-3186	BRACKET, E-BOX		
21	1	8-3222	E-BOX CROSSBAR		
	1	8-3223	E-BOX CROSSBAR		
	1	8-3224	E-BOX CROSSBAR		

* = QTY 1 ON VOLTAGE 240, <
QTY 3 OTHERWISE

* = QTY 1 ON VOLTAGE 240, <
QTY 3 OTHERWISE



Entrance Box - CB,CB-LE

BLOWER MOTOR FUSE SIZING

ELECTRICAL LOAD MOTOR HP	SINGLE PHASE 50/60 HERTZ			THREE PHASE 50/60 HERTZ			
	110-120 V	220-240 V	200-208 V	220-240 V	346-416 V	440-480 V	550-660 V
1/4	10	5-6/10	1-8/10	1-8/10		1	8/10
1/3	12	6-1/4	1-8/10	1-8/10		1	8/10
1/2	17-1/2	9	4-1/2	4	2	2	1-6/10
3/4	20	10	7	5-6/10	3-2/10	2-8/10	2-1/4
1	25	12	9	8	4-1/2	4	3-2/10
1-1/2	35	17-1/2	12	10	6-1/4	5-6/10	4-1/4
2	40	20	15	12	7	6-1/4	5
3	60	30	20	17-1/2	10	9	7
5		50	30	30	15	15	12
7-1/2		60	40	40	20	20	17-1/2
10		90	60	50	30	25	20
15			80	60	45	40	30
20			110	80	50	50	40
25			125	100	60	60	50
30			175	125	70	70	60
40			200	175	100	80	70
50			300	200	125	100	80
60			350	300	175	150	110
75			400	350	200	175	150
100			500	400	250	200	175
125			600	500	300	300	200
150				600		350	250

FUSE SIZES ARE CLASS RK5
DUAL ELEMENT, TIME DELAY.

	BUSSMAN	GOULD	LITTELFUSE
0-250 V	FRN	TR	FLN
251-600 V	FRS	TRS	FLS

TABLE ABOVE SHOWS VENDOR TYPES

PUMP, AIR COMP. & OIL HEATER FUSE SIZING

ELECTRICAL LOAD MOTOR HP	SINGLE PHASE 50/60 HERTZ			THREE PHASE 50/60 HERTZ			
	110-120 V	220-240 V	200-208 V	220-240 V	346-416 V	440-480 V	550-660 V
1/4	8	4-1/2	1-8/10	1-8/10		1	8/10
1/3	9	4-1/2	1-8/10	1-8/10		1	8/10
1/2	12	6-1/4	2-8/10	2-8/10	1-8/10	1-4/10	1
3/4	17-1/2	9	4-1/2	4-1/2	2-1/4	1-8/10	1-4/10
1	20	10	5	5	3-2/10	2-1/4	1-8/10
1-1/2	25	12	7	7	4	3-2/10	2-1/2
2	30	15	9	9	5-6/10	4-1/2	3-1/2
3	40	20	12	12	8	6-1/4	5
5		35	20	20	12	10	8
7-1/2		50	35	30	17-1/2	15	12
10		60	40	35	20	17-1/2	15
15			60	50	30	25	20
20			70	70	40	35	25
25			90	80	50	40	35
30			100	100	60	50	40
40			150	150	80	70	50
50			175	175	100	80	70
60			200	200	125	100	80
75			250	250	150	125	100
100			350	300		150	125
125			450	400		200	150
150			500	450		225	200

HEATER KW	110-120 V	220-240 V	200-208 V	220-240 V	346-416 V	440-480 V	550-660 V
2	20	12	7	7		4-1/2	3-2/10
3	30	15	10	10	6-1/4	5-6/10	4-1/2
5	50	25	15	15	10	8	6-1/4
7-1/2			25	25	15	12	10
10			30	30	25	17-1/2	12
15			45	45	35	25	20

FUSE SIZES ABOVE ARE CLASS RK5
DUAL ELEMENT, TIME DELAY.

	BUSSMAN	GOULD	LITTELFUSE
0-250 V	FRN	TR	FLN
251-600 V	FRS	TRS	FLS

TABLE AT RIGHT SHOWS VENDOR TYPES

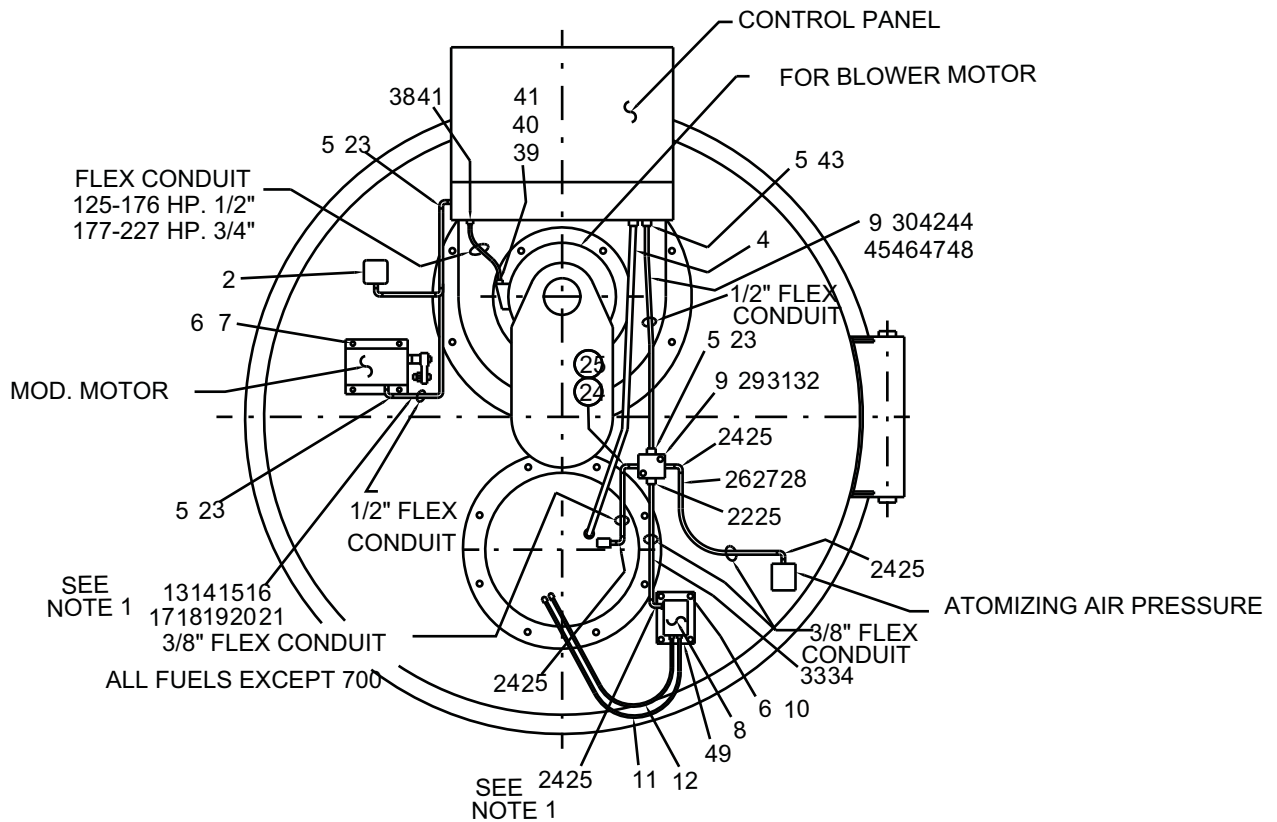
CONTROL CIRCUIT XFMR VOLTAGE	1/2 KVA.	1 KVA.	1-1/2 KVA.	2 KVA.
200-208	4	8	12	15
220-240	3-1/2	7	10	12
346-416	2-8/10	4	6-1/4	8
440-480	2-1/2	3-1/2	5-6/10	7
550-600	2	3-1/2	4-1/2	5-6/10
SECONDARY FUSE	5-6/10	12	15	20

XFMR MOUNTED FUSES ARE CLASS CC TIME DELAY.
PANEL MOUNTED FUSES ARE CLASS RK5 DUAL ELEMENT,
TIME DELAY. FOR TYPE SEE CHART BELOW

VENDOR	PANEL MOUNTED		XFMR MOUNTED
	0-250 V	251-600 V	0-600 V
BUSSMAN	FRN	FRS	FNQR
GOULD	TR	TRS	ATQR
LITTELFUSE	FLN	FLS	KLDR

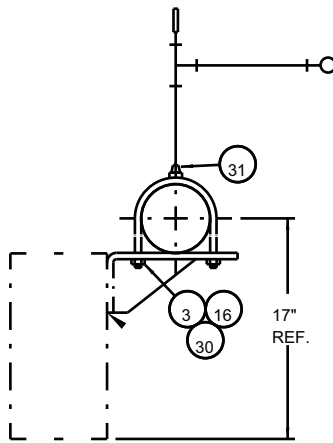
NOTES

1. FOR NON-HAWK, ITEMS 5, 13 THRU 21, & 23 ARE STOCKED AS 506-478 FOR STD., FM, KEM, & IRM INSURANCE.
506-479 FOR IRI, F & I. INSURANCE.
2. FOR NON-HAWK, ITEMS 22, 24 THRU 29, 33, & 34 ARE STOCKED AS 309-56.
3. ITEMS 5, 9, 23, 30, & 43 THRU 48 ARE STOCKED AS 320-58.

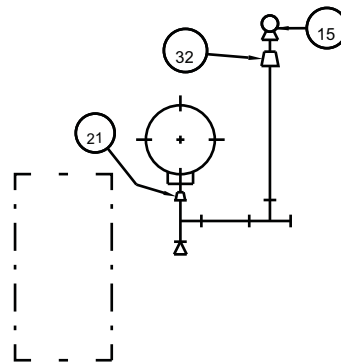
**Front Head Electrical**

ITEM	QTY	PART NO.	DESCRIPTION	USED ON
1	-	-	-	-
②	1	817-436	CAPS	-
3	-	-	-	-
4	1	817-1742	SCANNER	-
5	* 4	848-101	BUSHING, ANTI-SHORT	-
6	* 9	952-92	LOCKWASHER, 1/4"	-
7	4	868-137	CAPSCREW, HEX HD, 1/4-20 X 1" LG.	-
⑧	1	832-118	IGNITION TRANSFORMER	OIL ONLY 60 HZ
	1	832-107	IGNITION TRANSFORMER	GAS & COMB. 60 HZ
	1	832-286	IGNITION TRANSFORMER	ALL 50 HZ
9	1	950-238	WIRE, NO. 14 AWG, 600V MARKED #38 X 60" LG.	NON-HAWK
10	4	860-7	SCREW, MACHINE, 1/4-20 X 1/2" LG.	-
⑪	1	292-66	IGNITION WIRE	GAS & COMB.
	1	292-67	IGNITION WIRE	OIL ONLY
⑫	1	292-96	IGNITION WIRE	OIL ONLY
13	1	950-229	WIRE, NO. 14 AWG, 600V MARKED #29 X 60" LG.	IRI, F & I, NON-HAWK
14	1	950-202	WIRE, NO. 14 AWG, 600V MARKED #2 X 48" LG.	NON-HAWK
15	1	950-221	WIRE, NO. 14 AWG, 600V MARKED #21 X 55" LG.	-
16	1	950-222	WIRE, NO. 14 AWG, 600V MARKED #22 X 55" LG.	-
17	1	950-225	WIRE, NO. 14 AWG, 600V MARKED #25 X 57" LG.	-
18	1	950-226	WIRE, NO. 14 AWG, 600V MARKED #26 X 57" LG.	-
19	1	950-243	WIRE, NO. 14 AWG, 600V MARKED #43 X 65" LG.	-
20	1	884-90	TERMINAL, FORK TONGUE	-
21	3	848-289	WIRE NUT	-
22	1	848-81	CONNECTOR, DUPLEX, 3/8"	-
23	* 3	848-10	CONNECTOR, SQUEEZE TYPE, 1/2" X 90°	-
24	* 5	848-16	CONNECTOR, SQUEEZE TYPE, 3/8" X 90°	-
25	* 6	848-100	BUSHING, FIBRE, 3/8"	-
26	1	950-230	WIRE, NO. 14 AWG, 600V MARKED #30 X 35" LG.	NON-HAWK
27	1	950-238	WIRE, NO. 14 AWG, 600V MARKED #38 X 35" LG.	NON-HAWK
28	2	884-90	TERMINAL, FORK TONGUE	-
29	1	848-273	BOX, OUTLET, 4" SQ. X 2-1/8" DEEP	-
30	1	950-206	WIRE, NO. 14 AWG, 600V MARKED #6 X 58" LG.	NON-HAWK
31	2	869-21	NUT, HEX, 1/4-20	-
32	1	848-248	OUTLET BOX COVER	-
33	1	950-204	WIRE, NO. 14 AWG, 600V MARKED #4 X 30" LG.	-
34	1	950-227	WIRE, NO. 14 AWG, 600V MARKED #27 X 30" LG.	-
35	-	-	-	-
36	-	-	-	-
37	-	-	-	-
38	1	848-31	CONNECTOR, SQUEEZE TYPE, 1/2" X 45°	125-150 HP.
	1	848-83	CONNECTOR, SQUEEZE TYPE, 3/4" X 45°	200 HP.
39	1	848-10	CONNECTOR, SQUEEZE TYPE, 1/2" X 90°	125-150 HP.
	1	848-85	CONNECTOR, SQUEEZE TYPE, 3/4" X 90°	200 HP.
40	1	848-151	REDUCING WASHER	125-150 HP.
	-	-	-	200 HP.
41	2	848-101	BUSHING, ANTI-SHORT	125-150 HP.
	2	848-307	BUSHING, ANTI-SHORT	200 HP.
42	1	950-230	WIRE, NO. 14 AWG, 600V MARKED #30 X 60" LG.	NON-HAWK
43	1	848-36	CONNECTOR, SQUEEZE TYPE, STRAIGHT, 1/2"	-
44	1	950-213	WIRE, NO. 14 AWG, 600V MARKED #13 X 56" LG.	NON-HAWK
45	1	950-204	WIRE, NO. 14 AWG, 600V MARKED #4 X 60" LG.	NON-HAWK
46	1	950-210	WIRE, NO. 14 AWG, 600V MARKED #10 X 56" LG.	NON-HAWK
47	1	950-228	WIRE, NO. 14 AWG, 600V MARKED #28 X 52" LG.	NON-HAWK
48	1	950-227	WIRE, NO. 14 AWG, 600V MARKED #27 X 60" LG.	NON-HAWK
49	1	8-A-3192	IGNITION TRANSFORMER MOUNTING BRACKET	-

Front Head Electrical



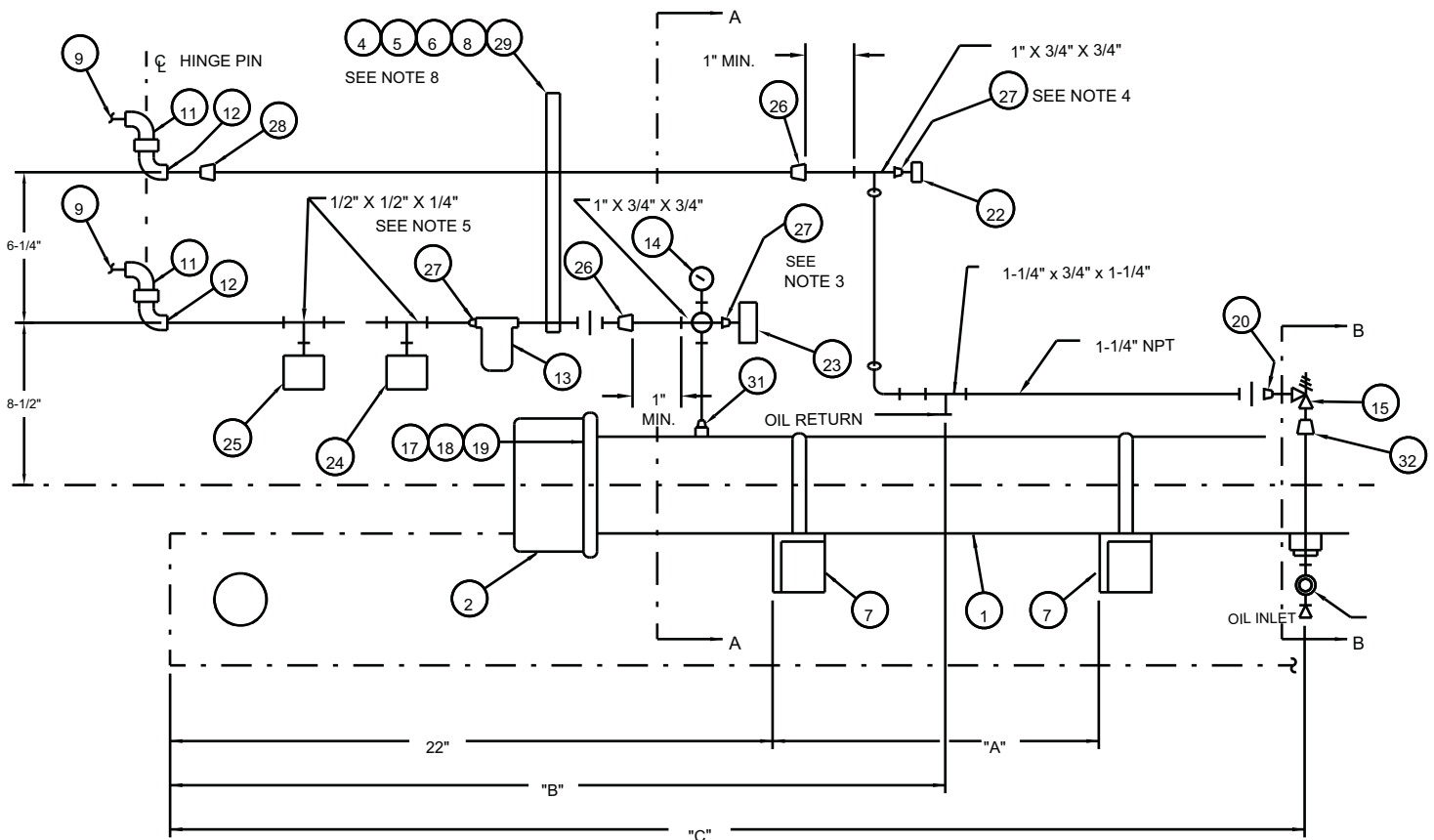
VIEW "A-A"



VIEW B-B "

NOTES:

1. ALL DIMENSIONS ARE APPROX.
2. UNLESS OTHERWISE NOTED, ALL PIPE TO BE 3/4" SCH. 40 ASTM A120 WELDED BLACK STL. AND ALL FITTINGS 150# M.I..
3. USE ITEM 27 WITH 836-72 HOTS.
4. USE ITEM 27 WITH 836-65 LOTS.
5. SUPPLY TEES ONLY IF REQUIRED BY INSURANCE.
6. FOR HAWK DO NOT USE ITEM 10. USE QTY 2 OF ITEM 3.
7. ITEMS 22, 23, 24, & 25 USED FOR NON-HAWK ONLY. FOR HAWK USE SOLID STATE SENSOR. REFER TO DWG. 146-D-56.
8. WELD ITEM 4 TO SADDLE SUPPORT.

**Straight Electric Oil Heater 60" Heavy Oil - Model CB,CB-LE**

ITEM	QTY	PART NO.	DESCRIPTION	USED ON	OPTION
1	1	838-C-81	TANK - HEATER	3 & 5 kw U.S.	QQ QU
	1	838-C-35	TANK - HEATER	3 & 5 kw CAN.	
	1	195-B-238	TANK - HEATER	7-1/2 kw	
2	1	*	ELEMENT - HEATER	-	QQ/QU
3	2	7-A-52	U-BOLT	-	QQ/QU
4	1	8-A-65	BRACKET, PIPE	-	QQ/QU
5	2	928-45	STRAP - PIPE 3/4"	-	
6	2	868-405	CAPSCREW - HEX. HD. 1/4-20 x 7/8"	-	
7	2	8-A-656	HEATER BRACKET	-	
8	2	869-21	NUT HEX. 1/4-20	-	
9	1	507-B-500	TUBING - OIL RETURN (SEE NOTE 6)	-	QQ/QU
10	1	507-B-501	TUBING - OIL RETURN (SEE NOTE 6)	-	D3
11	2	845-313	ELBOW FLARED - 90°	-	
12	2	847-1715	SWIVEL JOINT - 90°	-	QQ/QU
13	1	843-252	STRAINER - 3/4" N.P.T.	-	QQ/QU
14	1	850-61	PRESSURE GAUGE	-	QQ/QU
15	1	940-2116	RELIEF VALVE - 1/2" N.P.T.	-	QQ/QU
16	4	952-93	LOCKWASHER - 3/8"	-	
17	1	853-227	GASKET - HEATER	-	
18	8	952-92	LOCKWASHER - 1/4"	-	
19	8	868-138	CAPSCREW HEX. HD. 1/4-20 x 1-1/4"	-	
20	1	847-430	BUSHING - 1-1/4" x 1/2"	-	
21	1	847-431	BUSHING - 1-1/4" x 3/4"	5 kw ONLY	
22	1	*	LOTS	ALL	D3
23	1	*	HOTS		D3
24	1	*	LOPS		D3
25	1	*	HOPS		D3
26	1	847-533	COUPLING 1" X 3/4"	-	
27	3	847-152	BUSHING 3/4" X 1/2"	-	
28	1	847-530	COUPLING - RED. - 3/4" X 1/2"	-	
29	2	952-92	LOCKWASHER - 1/4"	-	
30	4	869-30	NUT, HEX, 3/8"-16	-	
31	1	847-426	BUSHING, RED. 1" X 3/4"	5 kw-CAN. ONLY	
32	1	847-638	COUPLING - RED. 1-1/4" X 1/2"	-	

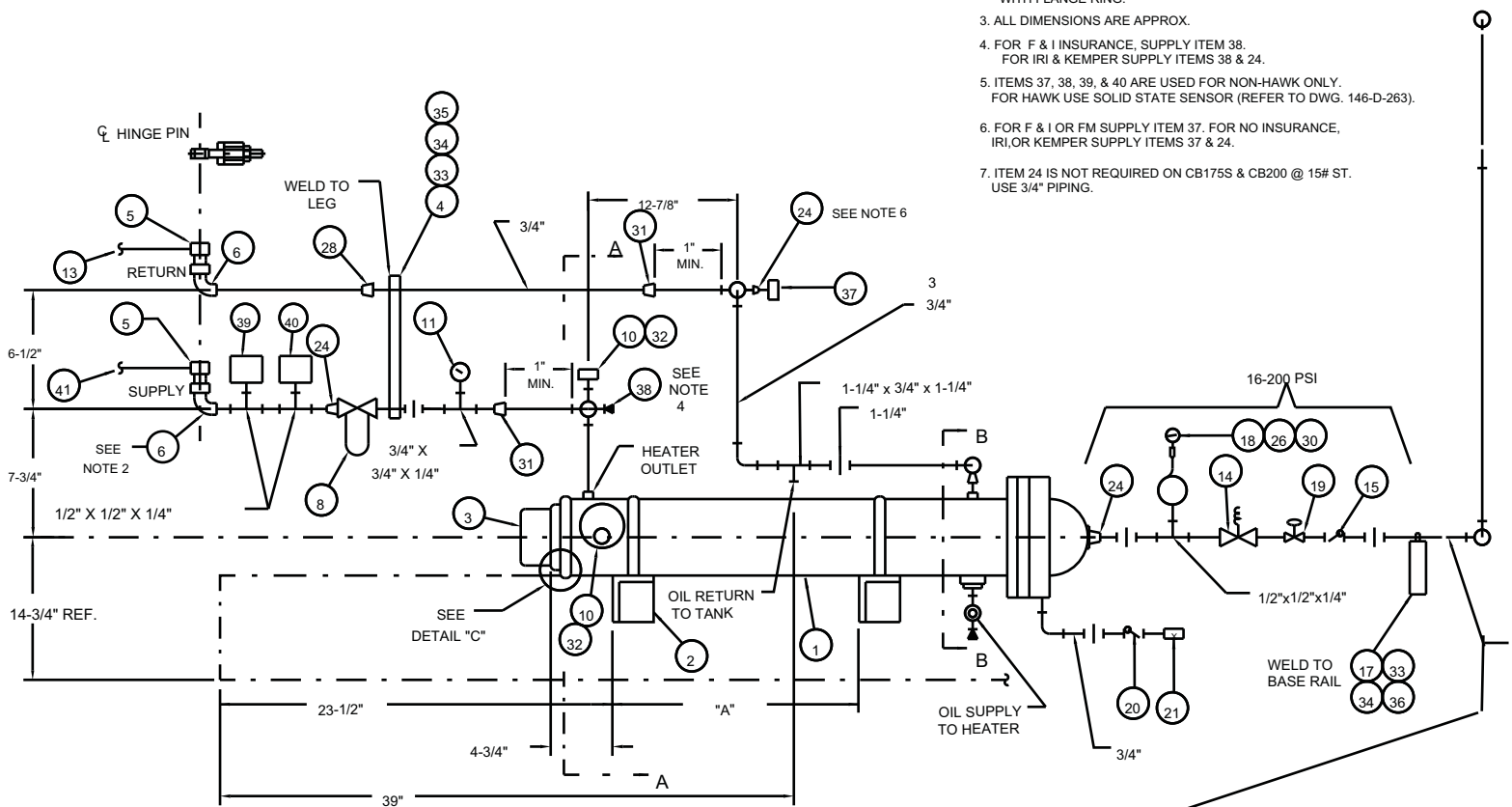
* = SEE TABLE ON PAGE 32

		DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"
125-150	U.S.	9-1/2"	32-1/4"	37-1/4"	17-3/8"
H.P.	CANADA	9-1/2"	30"	35"	14-1/2"
200 H.P.	-	18"	41-1/4"	47-3/4"	27-3/4"

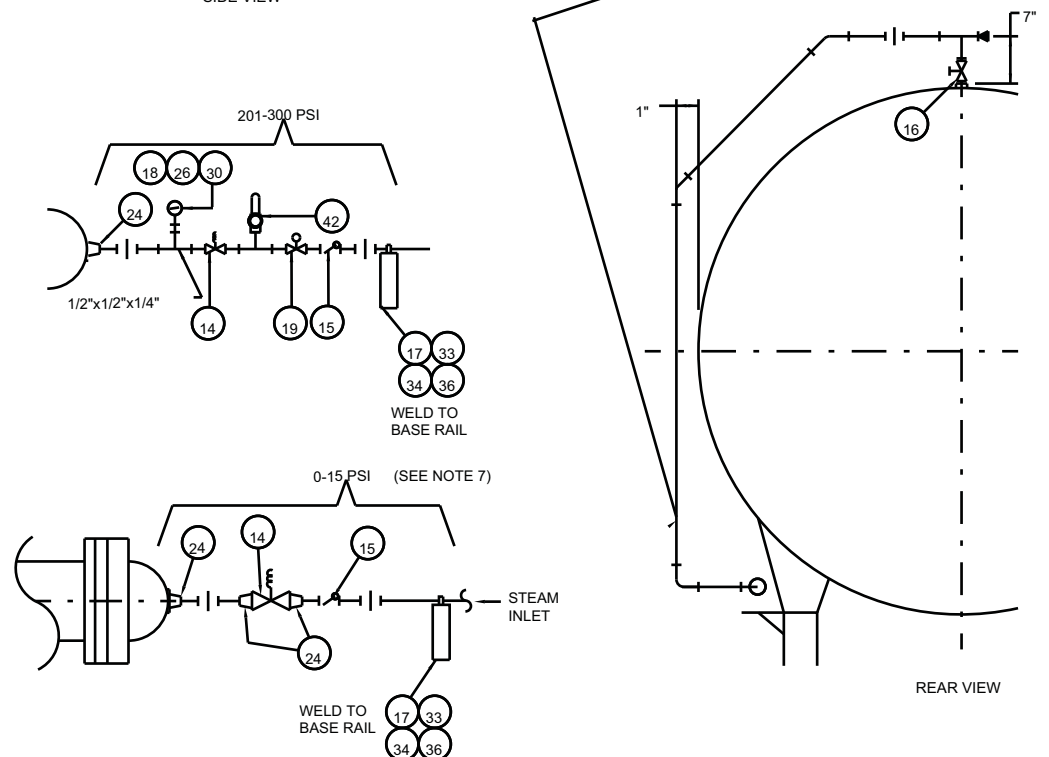
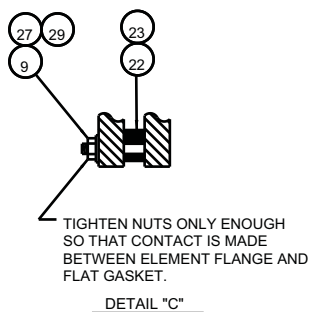
Straight Electric Oil Heater 60" Heavy Oil - Model CB,CB-LE

NOTES:

1. UNLESS OTHERWISE NOTED, ALL OIL PIPE TO BE SCH. 40 ASTM A120 WELDED BLACK STL. AND ALL FITTINGS TO BE 150# M.I..
2. SWIVEL JOINTS SHOULD BE LINED UP EVEN WITH FLANGE RING.
3. ALL DIMENSIONS ARE APPROX.
4. FOR F & I INSURANCE, SUPPLY ITEM 38.
FOR IRI & KEMPER SUPPLY ITEMS 38 & 24.
5. ITEMS 37, 38, 39, & 40 ARE USED FOR NON-HAWK ONLY.
FOR HAWK USE SOLID STATE SENSOR (REFER TO DWG. 146-D-263).
6. FOR F & I OR FM SUPPLY ITEM 37. FOR NO INSURANCE,
IRI, OR KEMPER SUPPLY ITEMS 37 & 24.
7. ITEM 24 IS NOT REQUIRED ON CB175S & CB200 @ 15# ST.
USE 3/4" PIPING.



SIDE VIEW



REAR VIEW

ITEM	QTY	PART NO.	DESCRIPTION	USED ON	OPTION
①	1	652-B-9	HEATER TANK	125-150 H.P.	B2
	1	652-B-10	HEATER TANK	200 H.P.	
②	2	8-A-650	BRACKETS	-	B2
③	1	*	OIL HEATER	★ -	B2
④	1	8-A-65	BRACKET-OIL LINE	-	B2
5	2	845-313	ELBOW 1/2" ODC. X 1/2" NPT.	-	
⑥	2	847-1715	BARCO JOINTS	-	B2
⑦	1	940-2116	RELIEF VALVE	-	B2
⑧	1	843-252	STRAINER 3/4"	-	B2
9	8	869-21	NUT, HEX, 1/4"-20	-	
⑩	2	836-A-320	THERMOSTAT (OHT & SHT)	★ -	B2
⑪	1	850-61	PRESSURE GAUGE	★ -	B2
⑫	1	157-A-66	NIPPLE - ORIFICE	-	B2
⑬	1	507-B-500	TUBING, OIL RETURN	★ -	B2
⑭	1	948-227	SOLENOID VALVE 3/4"	15#	B2
	1	948-273	SOLENOID VALVE 1/2"	16-125#	
	1	948-338	SOLENOID VALVE 1/2"	126-300#	
⑮	1	940-142	CHECK VALVE 3/4"	15# (200)	B2
	1	940-135	CHECK VALVE 1/2"	15# (125, 150,)	
	1	940-135	CHECK VALVE 1/2"	150-200#	
	1	940-458	CHECK VALVE 1/2"	250-300#	
⑯	1	941-142	GLOBE VALVE 3/4"	15# (200)	B2
	1	941-40	GLOBE VALVE 1/2"	15# (125, 150)	
	1	941-40	GLOBE VALVE 1/2"	150-200#	
	1	941-322	GLOBE VALVE 1/2"	250-300#	
⑰	1	8-A-661	BRACKET	-	B2
⑱	1	850-3	STEAM GAUGE	★ 150-300#	B2
⑲	1	817-260	REGULATOR, STEAM 1/2"	150#	B2
	1	918-713	REGULATOR, STEAM 1/2"	250#	
	1	918-12	REGULATOR, STEAM 1/2"	300#	
⑳	1	940-142	CHECK VALVE 3/4"	-	B2
㉑	1	934-256	STEAM TRAP	-	B2
㉒	1	32-A-2394	GASKET	-	B2
㉓	1	853-692	GASKET O-RING	-	B2
24	6	847-152	BUSHING, HEX 3/4" X 1/2"	-	
	4	847-152	BUSHING, HEX 3/4" X 1/2"	150-300#	
25	2	841-1142	U-BOLT	-	
㉔	1	854-11	SIPHON	★ 150-300#	B2
27	8	952-92	LOCKWASHER 1/4"	-	
28	1	847-530	REDUCING COUPLING 3/4" X 1/2"	-	
29	8	841-1458	STUD	-	
30	1	858-311	FULL COUPLING 1/4" NPT.	150-300#	
31	1	847-533	COUPLING, RED, 1" X 3/4"	-	
㉕	2	832-311	CAPACITOR	★ -	B2
33	3	868-405	CAPSCREW HEX HD. 1/4"-20 X 7/8" LG.	-	
34	3	869-234	NUT & LOCKWASHER COMBINATION 1/4"	-	
35	2	928-45	CLAMP 3/4"	-	
36	1	928-44	CLAMP 1/2"	15# (125, 150)	
	1	928-44	CLAMP 1/2"	150-300#	
	1	928-45	CLAMP 3/4"	15# (200)	
㉖	1	*	LOTS	★ ALL	D3
㉗	1	*	HOTS	★	D3
㉘	1	*	LOPS	★	D3
㉙	1	*	HOPS	★	D3
41	1	507-B-501	TUBING, OIL SUPPLY	★ NON-HAWK	
	1	507-B-6812	TUBING, OIL SUPPLY	★ HAWK ONLY	
㉚	1	940-2974	RELIEF VALVE, 1/2"	201-300#	B2

★ = SEE TABLES ON PAGE 32

HORSEPOWER	DIMENSION "A"
125 & 150	21"
200	37"

Heavy Oil Piping 60"Steam - Model CB, CB-LE

OIL HEATER RATINGS (KW)				
HORSEPOWER	#4 OIL	#5 & #6 OIL		
	ALL PRESSURE	STEAM		HOT WATER
		15	16-300	ALL
50-200	3	5	5	5
250	5	7-1/2	7-1/2	7-1/2
300-350	7-1/2	7-1/2	7-1/2	7-1/2
400	10	7-1/2	7-1/2	10
500	10	10	7-1/2	10
600-800	15	10	7-1/2	10
NOTE: #4 OIL AND HOT WATER #5 & #6 OIL USE STRAIGHT ELECTRIC OIL HEATER				

STEAM-ELECTRIC OIL HEATER				
RATING	200/230 VOLT	380 VOLT	460 VOLT	600 VOLT
5 KW	832-288	832-1576	832-289	832-290
7-1/2 KW	832-509	832-1577	832-510	832-520
10 KW	832-981	832-1578	832-982	832-983

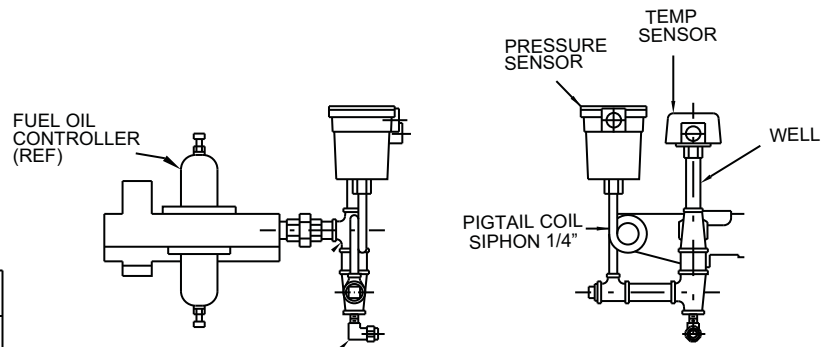
STRAIGHT ELECTRIC OIL HEATER					
RATING	200 VOLT	230 VOLT	380 VOLT	460 VOLT	600 VOLT
5 KW	832-948	832-929	832-932	832-933	832-934
7-1/2 KW	832-936	832-937	832-949	832-938	832-939
10 KW	832-940	832-941	832-950	832-942	832-943
15 KW	832-944	832-945	832-951	832-946	832-947

OIL PUMP (SHIP LOOSE)							
MODEL	VOLTAGE						
	200		230		380	460	600
	50 HZ.	60 HZ.	50 HZ.	60 HZ.	50 HZ.	60 HZ.	60 HZ.
50-100A	-	905-1057	905-1071	905-1050	905-1071	905-1050	-
125,125A-200	905-1072	905-1058	905-1072	905-1051	905-1072	905-1051	-
250-300	905-1072	905-1058	905-1072	905-1051	905-1072	905-1051	905-1065
350-800	-	905-1174	905-1180	905-1171	905-1180	905-1171	905-1177

OIL CONTROLS		LOTS		HOTS	LOPS	HOPS
		#4 OIL	#5,#6 OIL	ALL	ALL	ALL
NON-HAWK	NO INS.	817-926	836-65	836-72	* 817-1264	-
	IRI/FM/F & I	817-1958	817-1425	817-1425	817-1264	-
	KEMPER	817-926	836-65	836-72	817-1264	817-922
HAWK	ALL	817-2100 (TEMP SENSOR) 817-399 (WELL)			* 817-2098 (PRESS SENSOR) 854-11 (SIPHON COIL)	

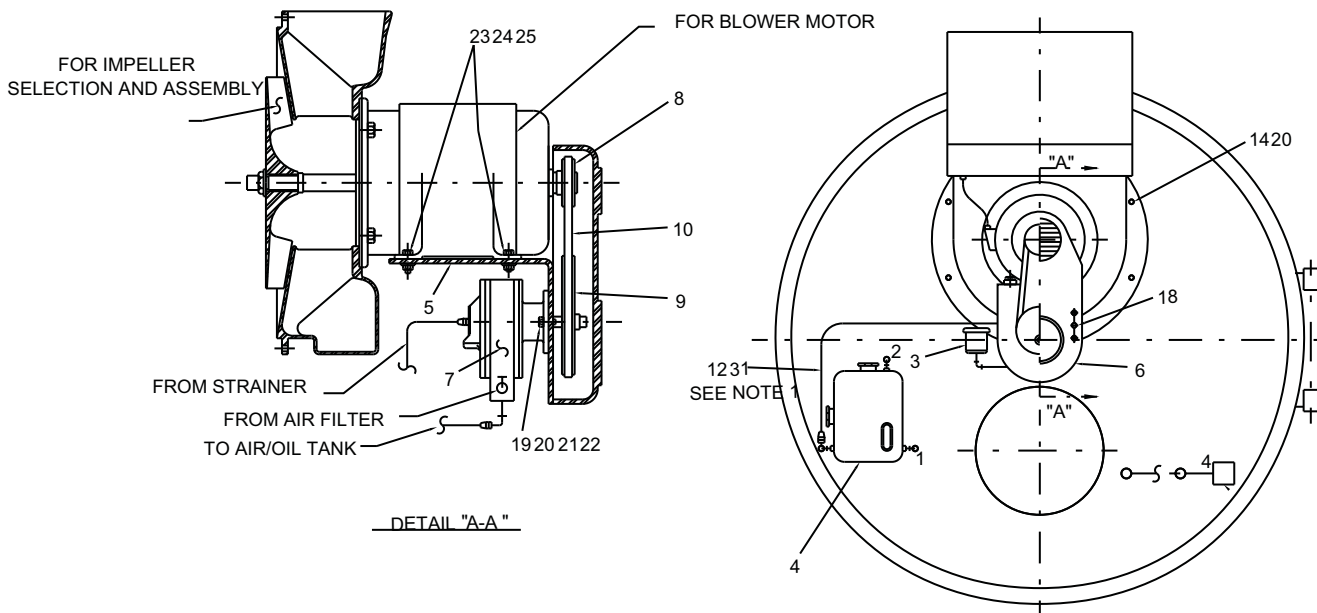
* NOT REQUIRED BELOW 70HP

SHIPPED LOOSE (NOT SHOWN) (ALL BOILERS)				
QTY	PART NO.	DESCRIPTION	USED ON	OPTION
1	SEE TABLE	OIL PUMP	B -	B7
1	833-1902	STARTER	B -	B7
1	923-47	STRAINER	B -	B7



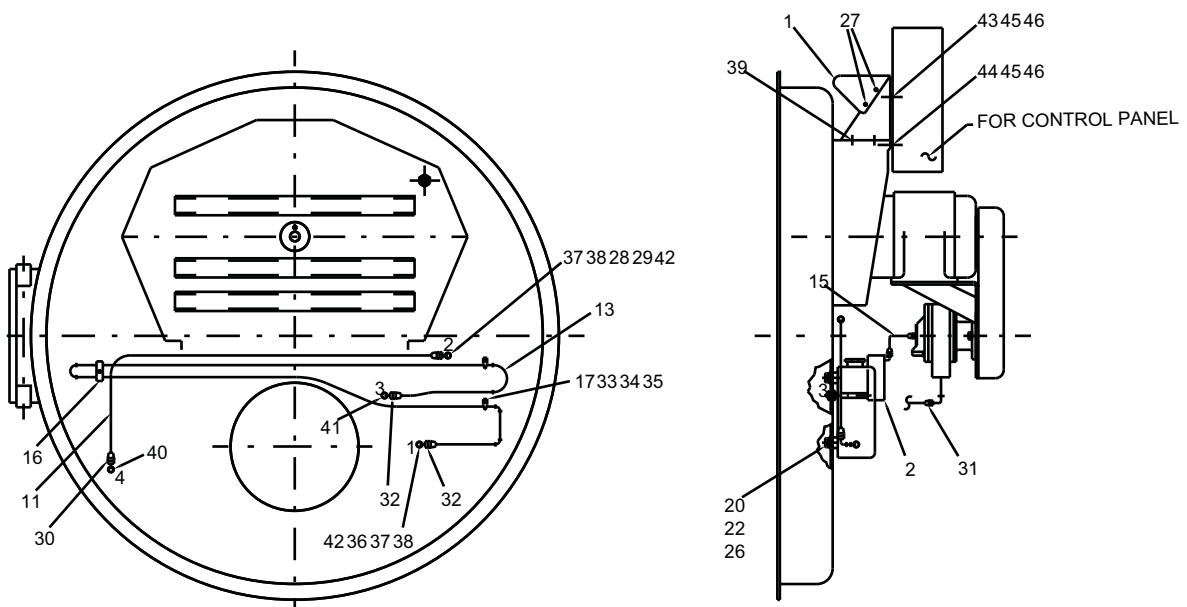
HAWK ONLY

ITEM	QTY	PART NO.	DESCRIPTION	USED ON
①	1	530-B-94	SUPPORT PANEL & AIR HOOD ASSEMBLY	-
	1	530-B-384	SUPPORT PANEL & AIR HOOD ASSEMBLY	200 @ 50 HZ
②	1	333-A-17	STRAINER ASSEMBLY	-
③	1	923-79	AIR CLEANER	-
④	1	538-A-136	AIR - OIL TANK ASSEMBLY	-
	1	538-A-134	AIR - OIL TANK ASSEMBLY	200
⑤	1	8-C-2324	AIR COMPRESSOR BRACKET (NOTE 2)	-
	1	8-C-2326	AIR COMPRESSOR BRACKET (NOTE 2)	200
⑥	1	450-B-13	BELT GUARD ASSEMBLY	-
⑦	1	505-A-103	AIR PUMP ASSEMBLY	125, 150
	1	505-A-104	AIR PUMP ASSEMBLY	200
⑧	1	921-596	SHEAVE 3.0 PD	125, 150
	1	921-593	SHEAVE 3.2 PD	125, 150
	1	921-594	SHEAVE 3.6 PD	200
⑨	1	921-412	SHEAVE 6.7 PD	ALL @ 50 HZ
	1	921-314	SHEAVE 9.0 PD	ALL @ 60 HZ
⑩	1	809-6	V-BELT A38	ALL
	1	809-144	V-BELT A42	ALL
⑪	1	507-A-543	TUBING, AIRLINE TO BULKHEAD FITTING	-
⑫	1	507-A-544	TUBING, AIR-OIL TANK TO COMPRESSOR	125, 150
	1	507-B-686	TUBING, AIR-OIL TANK TO COMPRESSOR	200
⑬	1	507-B-488	TUBING, FINNED OIL COOLING LINE	-
14	8	869-30	NUT, HEX., 3/8-16	-
⑮	1	507-A-2601	TUBING, STRAINER TO COMPRESSOR	125
	1	507-A-2644	TUBING, STRAINER TO COMPRESSOR	150
	1	507-A-2645	TUBING, STRAINER TO COMPRESSOR	200
⑯	1	77-A-32	SPACER, FINNED TUBING (2 HOLES)	-
⑰	2	77-A-31	SPACER, FINNED TUBING (1 HOLE)	-
18	3	860-229	SCREW, MACH, FLAT HD, 1/4"-20 X 3/8" LG.	-
19	2	868-159	CAPSCREW, HEX HD, 3/8"-16 X 1-3/4" LG.	-
20	36	952-93	LOCKWASHER, 3/8"	-
21	2	952-94	LOCKWASHER, 1/2"	-
22	35	869-30	NUT, HEX, 3/8"-16	-

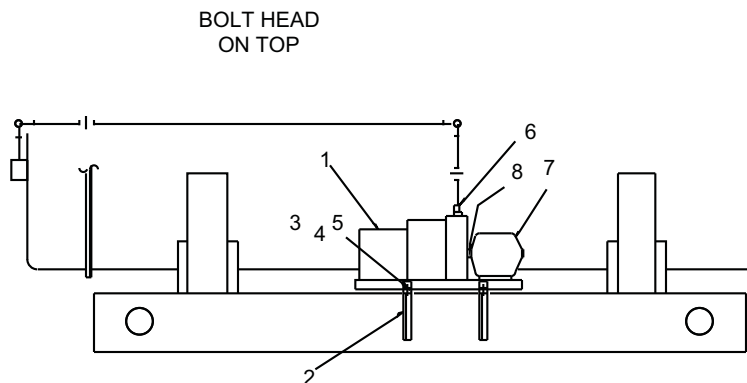


Belt Driven Air Compressor

ITEM	QTY	PART NO.	DESCRIPTION	USED ON
23	4	868-159	CAPSCREW, HEX HD, 3/8"-16 X 1-3/4" LG.	-
	4	868-176	CAPSCREW, HEX HD, 1/2"-13 X 2" LG.	200
24	4	952-93	LOCKWASHER, 3/8"	-
	4	952-94	LOCKWASHER, 1/2"	200
25	4	869-15	NUT, HEX, 1/2"-13	-
26	3	77-28	SPACER	-
27	8	841-566	SCREW, SHEET METAL, #10 X 5/8" LG.	-
28	1	858-271	COUPLING, FULL, 1/2" NPT	-
29	1	845-194	ELBOW, MALE, 5/8" ODC X 1/2" NPT	-
30	4	845-44	CONNECTOR, MALE, 5/8" ODC X 1/2" NPT	-
31	1	845-45	NUT, FLARED, 5/8" ODC X 45°	125, 150
	1	845-107	NUT, FLARED, 3/4" ODC X 45°	-
32	2	845-46	CONNECTOR, 3/8" ODC X 3/8" NPT	-
33	20	952-92	LOCKWASHER, 1/4"	-
34	4	928-45	CLAMP, PIPE, 3/4"	-
35	4	868-405	CAPSCREW, HEX HD, 1/4"-20 X 7/8" LG.	-
36	1	847-545	ELBOW, RED., 1/2" X 3/8"	-
37	2	952-108	WASHER, FLAT, 1/2"	-
38	4	869-140	LOCKNUT, HEX, 1/2"	-
39	4	860-7	MACHINE SCREW 1/4"-20 X 1/2" LG.	-
40	1	859-80	ELBOW 1/2" NPT	-
41	1	859-79	ELBOW 3/8" NPT	-
42	2	853-434	GASKET	-
43	2	868-14	CAPSCREW, HEX HD., 5/16-18 X 3/4" LG.	-
44	2	868-128	CAPSCREW, HEX HD., 5/16-18 X 1-1/4" LG.	-
45	4	952-114	LOCKWASHER, 5/16"	-
46	4	77-A-27	SPACER	-



Belt Driven Air Compressor

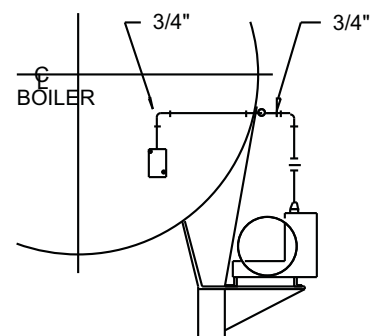
SIDE ELEVATION

BILL OF MATERIAL FOR 60" DIA.				
ITEM	QTY	PART NO.	DESCRIPTION	USED ON
1	1	505-113	COMPRESSOR ASSEMBLY	-
2	2	8-A-2345	BRACKET	-
3	4	868-104	CAPSCREW, HEX. HD. 5/16"-18 X 1" LG.	-
4	4	952-114	LOCKWASHER, 5/16"	-
5	4	952-133	WASHER, 5/16"	-
6	1	847-469	BUSHING, RED. 1" X 3/4"	-
7	1	SEE TABLE	MOTOR	-
8	1	SEE TABLE	COUPLING, HALF	-

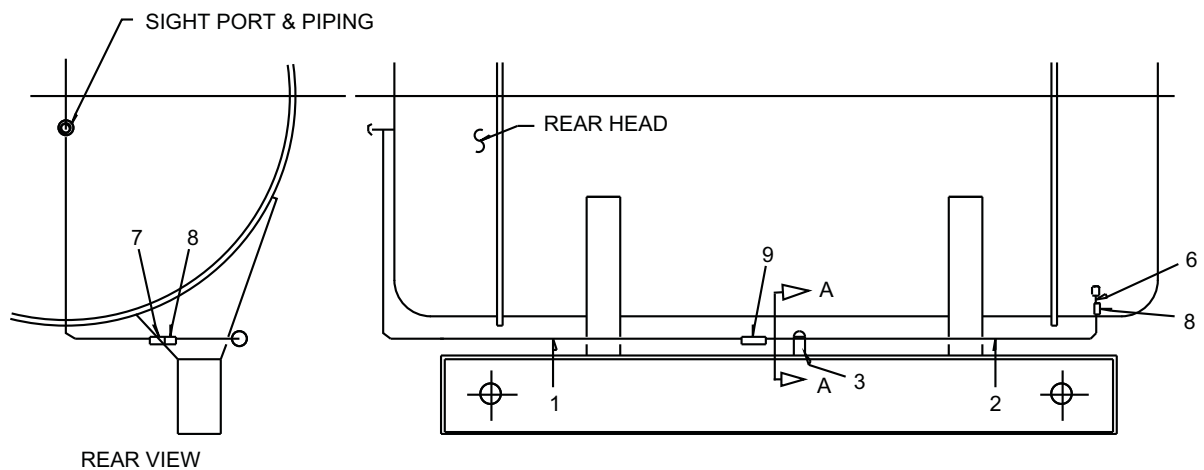
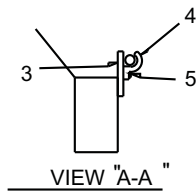
TABLE ITEMS 11 & 12			
ITEM	200-460V (60 HZ)	600V (60 HZ)	200-380V (50 HZ)
7	894-3431	894-3432	894-2291
8	819-158	819-158	819-150

NOTES:

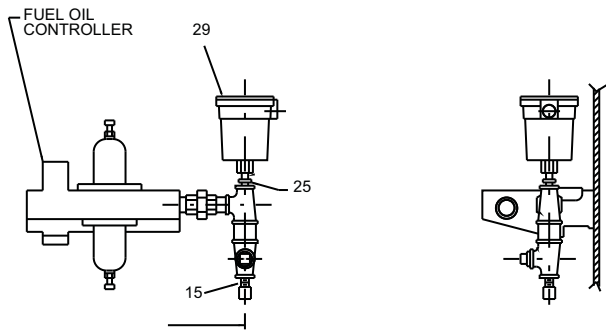
1. UNLESS OTHERWISE NOTED, ALL PIPE TO BE SCH. 40 ASTM A120 WELDED BLACK STL. AND ALL FITTINGS TO BE 150# M.I..
2. ALL DIMENSIONS ARE APPROXIMATE.

FRONT ELEVATION

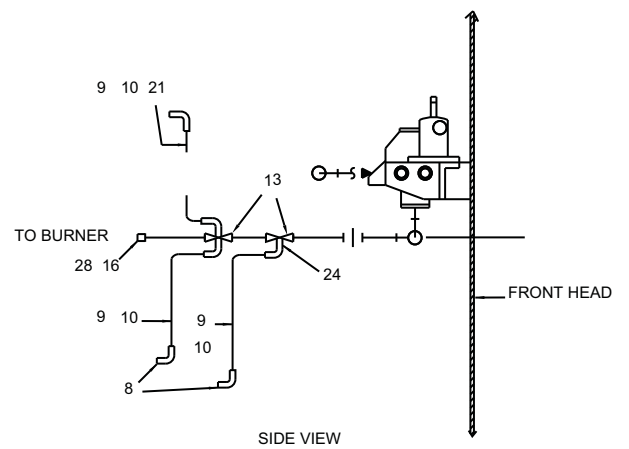
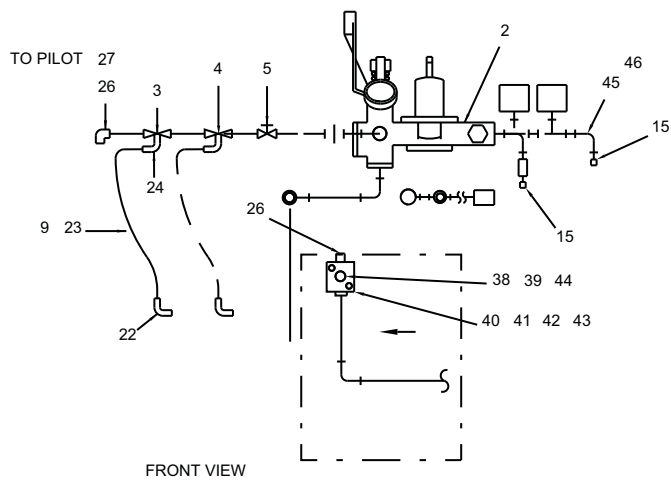
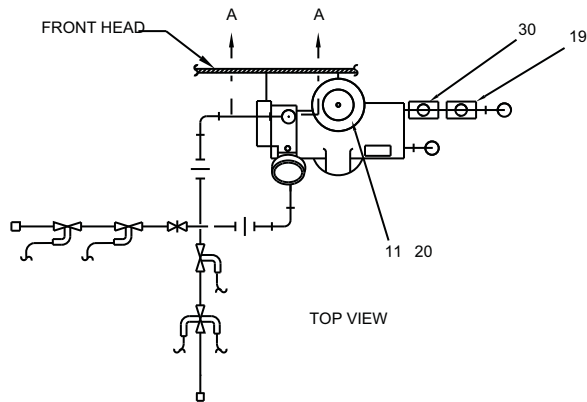
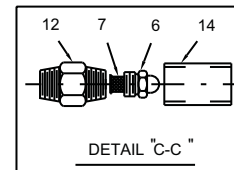
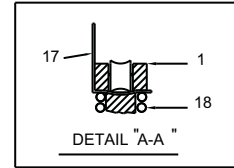
ITEM	QTY	PART NO.	DESCRIPTION
1	1	827-8	BULK CONDUIT, 1/2" THINWALL EMT. X "B" LG. APPROX.
2	1	827-8	BULK CONDUIT, 1/2" THINWALL EMT. X "A" LG. APPROX.
3	1	8-A-2833	BRACKET
4	1	928-33	PIPE STRAP, 1/2" CONDUIT
5	1	868-136	CAPSCREW, HEX HD. 1/4"-20 X 3/4" LG.
6	1	859-118	ELBOW, STREET, 1/2" X 45 (SEE NOTE 3)
7	1	848-141	COUPLING, 1/2" CONDUIT
8	2	848-325	CONNECTOR, STRAIGHT, 1/2" EMT. CONDUIT
9	1	848-398	COUPLING, UNION, 1/2" EMT. CONDUIT



Air Line Piping



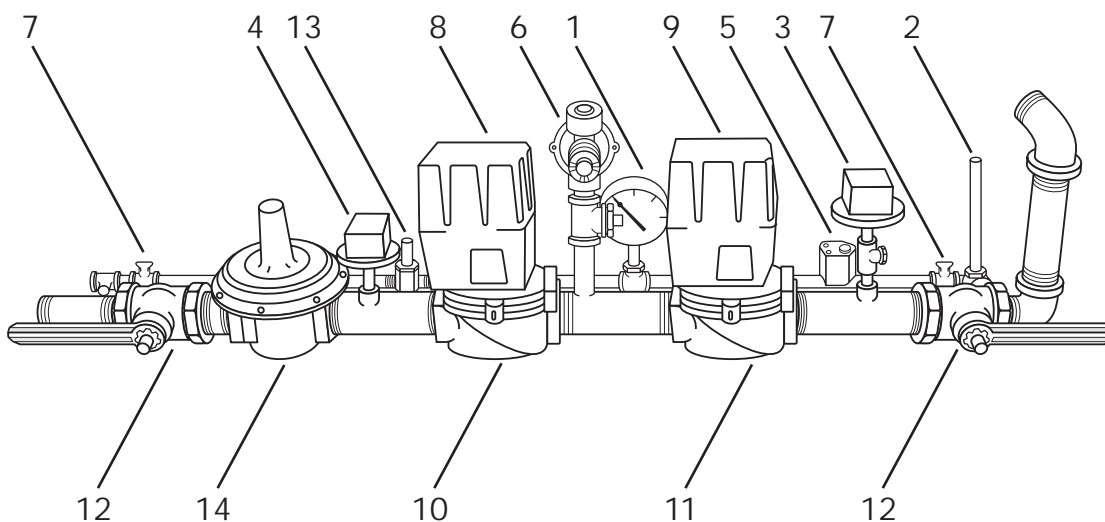
HAWK REQUIREMENT(SEE NOTE 1)



Stem Packing Kit - 880-370		QTY		PART NO.	DESCRIPTION	USED ON	OPTION	
Control Valve Rebuild Kit -		OIL	COM					
Light Oil & Heavy Oil - 880-75		①	1	24-84	VALVE STEM (24-B-81)	CB125,150,	A4	
Heavy Oil - 880-76			1	24-85	VALVE STEM (24-B-81)	CB 200		
		②	1	739-D-73	VALVE ASSEMBLY	-	A4	
		③	1	948-153	VALVE - SOLENOID 1/4"	MODEL 100	A4	
		④	1	948-153	VALVE - SOLENOID 1/4"	MODEL 100; IRI ONLY	A4	
		⑤	1	941-914	VALVE - GATE 1/4"	MODEL 100; IRI ONLY	A4	
		⑥	1	899-51	NOZZLE, 30°, H.V.MON. #F-80, 24 GPH.	-	A4	
		⑦	1	899-14	STRAINER, MONARCH #F-80	-	A4	
		8	1	848-2	CONNECTOR - SQUEEZE TYPE 3/8" X 45°	60" MODEL 101 & 200		
			2	848-2	CONNECTOR - SQUEEZE TYPE 3/8" X 45°	60" MODEL 100		
		9	6	4	848-100	BUSHING 3/8"		ADD QTY. 2 IF FM INS.
		10	3	2	827-6	GREENFIELD - 3/8" (CUT TO FIT)		ADD QTY. 1 IF FM INS.
		11	4		952-93	LOCKWASHER 3/8"		-
		⑫	1	106-A-49	ORIFICE BLOCK	-	A4	
		⑬	2	948-153	VALVE - SOLENOID 1/4"	-	A4	
		⑭	1	157-A-201	COUPLING, STEEL, 1/2" NPT	-	A4	
		15	2	845-312	CONNECTOR - MALE 1/2" NPT x 1/2" ODC	-		
		16	1	847-526	COUPLING, RED., 3/8" X 1/4"	125-150 H.P.		
			1	847-527	COUPLING, RED., 1/2" X 1/4"	200 H.P.		
		⑰	1	36-A-26	CAM BODY GUIDE	-	A4	
		⑱	1	82-B-83	SPRING - COMPRESSION	-	A4	
		⑲	1	817-922	HOPS (SEE NOTE 7)	KEM. ONLY	D3	
		20	4	868-157	CAPSCREW, HEX HD. 3/8"-16 X 1" LG.	60" ONLY		
		21	1	848-2	CONNECTOR, SQUEEZE TYPE 3/8" X 45°	FM ONLY		
		22	1	848-16	CONNECTOR, SQUEEZE TYPE 3/8" X 90°	MODEL 100		
		23	1	827-6	GREENFIELD - 3/8" (CUT TO FIT)	MODEL 100		
		24	3	2	848-3	CONNECTOR - 2 SCREW, 3/8" STRT.		-
		25	1	847-419	BUSHING, RED., 1/2" X 1/4"	HAWK ONLY		
		26	2	845-9	ELBOW, 1/4" ODC X 1/4" NPT	MODEL 100 (L.O. ONLY)		
		⑳	1	507-A-1616	TUBING - OIL TO PILOT	60" MODEL 100	A4	
		㉑	2	861-438	FLEXIBLE HOSE	125-150 H.P.	A4	
			2	861-439	FLEXIBLE HOSE	200 H.P.		
		㉒	1	817-2098	SENSOR - PRESSURE	HAWK ONLY	C3	
		⑳	1	817-1264	LOPS		D3	
		31	1	847-420	BUSHING, RED., 1/2" X 3/8"	FUEL 100, 125-150 HP ONLY		
		㉔	1	836-418	PRESSURE SWITCH	60" ONLY	A4	
		33	2	869-140	LOCKNUT, HEX, 1/2" NPT	60" ONLY		
		34	1	853-434	GASKET, 13/16"	60" ONLY		
		35	1	952-292	WASHER, 15/16"	60" ONLY		
		㉖	1	47-A-13	NIPPLE, TANK AIR LINE THRU HEAD	60" ONLY	A4	
		37	1	845-9	ELBOW, 1/4" ODC X 1/4" NPT, 90°	60" ONLY FUEL 100		
			1	847-545	ELBOW, RED., 1/2" X 3/8" NPT, 90°	60" ONLY FUEL 200, 125-150 HP		
			1	859-80	ELBOW, 1/2" NPT X 90°	60" ONLY FUEL 200, 200 HP		
		㉗	1	507-A-715	TUBING - AIR TO PILOT	60" MODEL 100	A4	

Light Oil/Air Piping-Front Head

CB-125	CB-150	CB-200			
QTY	QTY	QTY	ITEM	CB Part #	Description
1	1	1	1	850-109	Pressure Gauge, 0-20 PSI. 0-35"WC
1	1	1	2	507-1348	Gas Pilot Tube
1	1	1	3	817-1935	High Gas Pressure Switch 5-35"WC
1	1	1	4	817-774	Low Gas Pressure Switch 3-21"WC
1	1	1	5	948-197	Solenoid Valve, 1/2" NPT
1	1	1	6	948-54	Vent Valve, 1-1/4" NPT
1	1	1	7	825-30	Gas Cock, 1/2" NPT
1	1	1	8	945-139	Actuator, STD
1	1	1	9	945-143	Actuator, PC
1	1	1	10	940-4540	Gas Valve, Motorized 2-1/2" NPT, STD
1	1	1	11	940-4545	Gas Valve, Motorized 2-1/2" NPT, PC
2	2	2	12	941-129	Lubricated Plug Valve, 2-1/2" NPT
1	1	1	13	918-93	Regulator, Gas Pressure, 1/2", Pilot
1	1	1	14	918-703	Regulator, Gas Pressure, 2-1/2", NPT
1	-	-	-	940-133	Gas Butterfly Valve, Linkage, 2-1/2"
1	1	1	-	476-14	Gas Valve Linkage

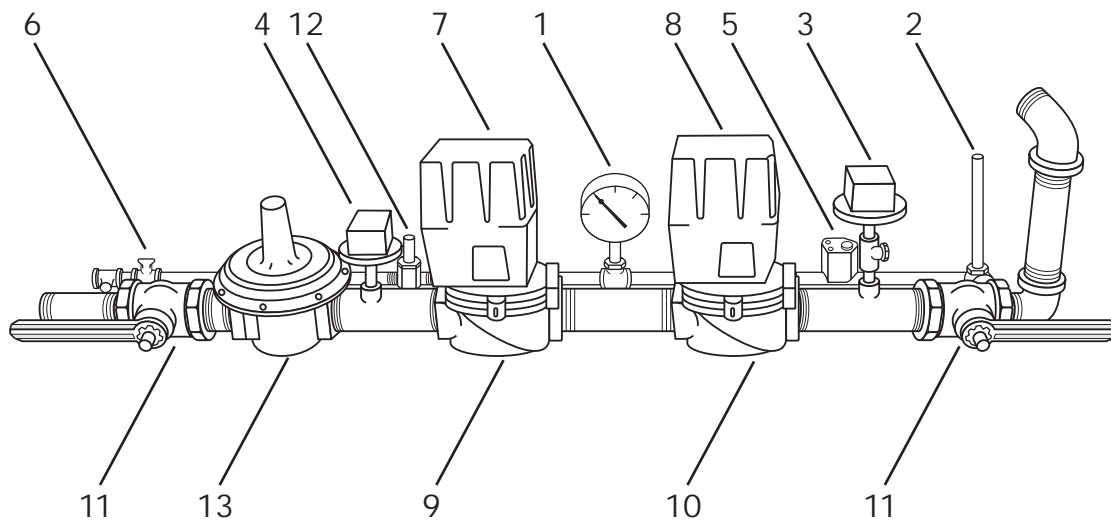


I.R.I. Approved Gas Train Assembly CB 125-200

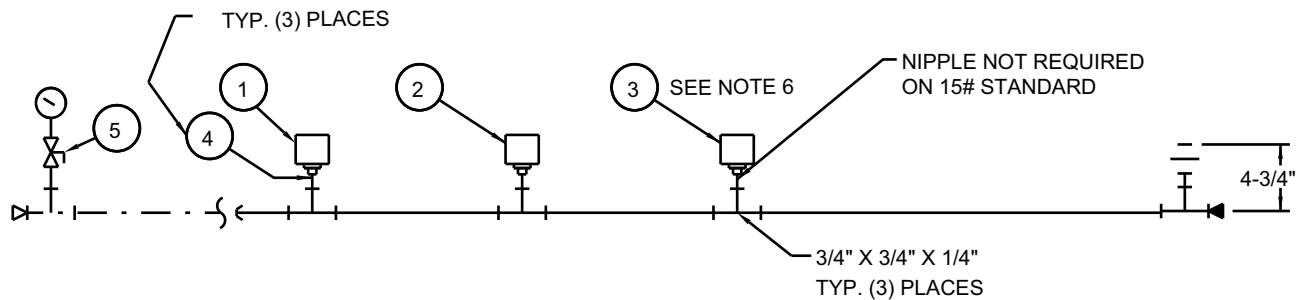
CB-125	CB-150	CB-200			
QTY	QTY	QTY	ITEM	CB Part #	Description
1	1	1	1	850-109	Pressure Gauge, 0-20 PSI. 0-35"WC
1	1	1	2	507-1348	Gas Pilot Tube
1	1	1	3	817-1935	High Gas Pressure Switch 5-35"WC
1	1	1	4	817-774	Low Gas Pressure Switch 3-21"WC
1	1	1	5	948-197	Solenoid Valve, 1/2" NPT
1	1	1	6	825-30	Gas Cock, 1/2" NPT
1	1	1	7	945-139	Actuator, STD
1	1	1	8	945-143	Actuator, PC
1	1	1	9	940-4540	Gas Valve, Motorized 2-1/2" NPT, STD
1	1	1	10	940-4545	Gas Valve, Motorized 2-1/2" NPT, PC
2	2	2	11	941-129	Lubricated Plug Valve, 2-1/2" NPT
1	1	1	12	918-93	Regulator, Gas Pressure, 1/2", Pilot
1	1	1	13	918-703	Regulator, Gas Pressure, 2-1/2", NPT
1	-	-	-	940-133	Gas Butterfly Valve, Linkage, 2-1/2"
-	1	1	-	940-134	Gas Butterfly Valve, Linkage, 3"
1	1	1	-	476-14	Gas Valve Linkage

* THE ACTUATORS ARE INCLUDED W/ ITEMS #1 & 3 GAS VALVES.

** FOR ALL HAWK, ITEM #7 IS NOT USED AND
REPLACE ITEM #8 WITH STANDARD PIPE NIPPLE.

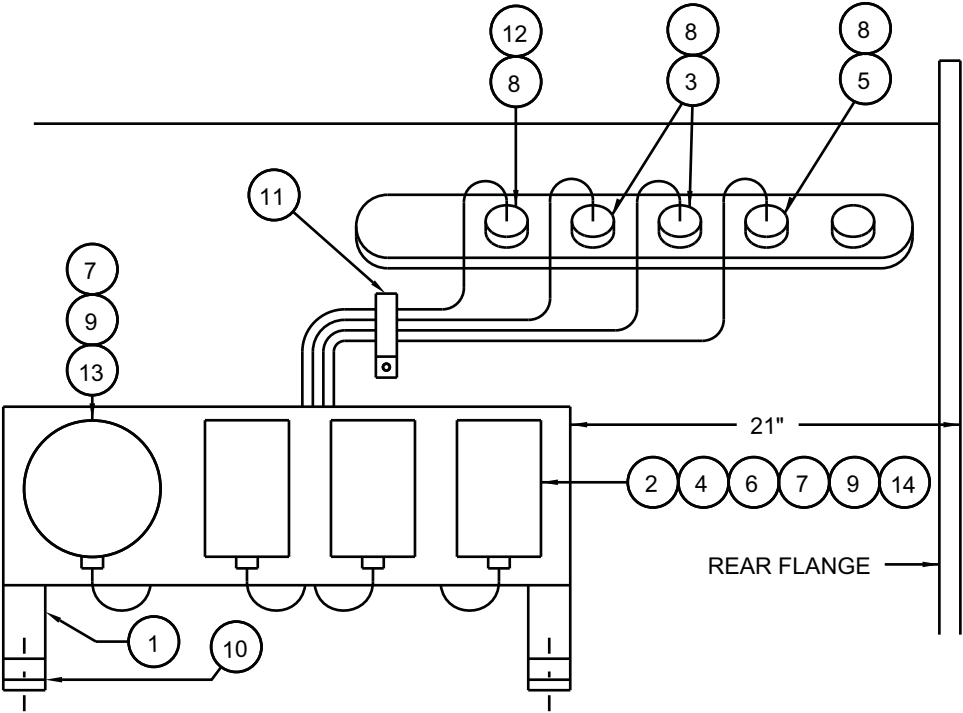


Standard and FM Approved Gas Train Assembly CB 125-200



300 #	150#- 250 #	16# 150 #	15#	BILL OF MATERIAL				
PART NO.	PART NO.	PART NO.	PART NO.	ITEM	QTY	PART NO.	DESCRIPTION	USED ON
817-111	817-111	817-110	817-16	①	1	SEE TABLE	CONTROL PRESSURE (OLC)	
817-900	817-900	817-109	817-415	②	1	SEE TABLE	CONTROL PRESSURE (HLC)	-
817-234	817-234	817-204	817-251	③	1	SEE TABLE	CONTROL PRESSURE (MC)	
857-726	857-448	857-448	857-448	④	3	SEE TABLE	NIPPLE - 1/4" x 1-1/2"	-
941-318	825-31	825-31	825-31	⑤	1	SEE TABLE	GAUGE COCK - 1/4"	

Steam Pressure Controls

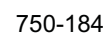


ITEM	CB70/CB100/E100 240-280 DEG F. HTHW		CB70/CB100/E100 281-360 DEG F. HTHW		CB70/CB100/E100 30-125 HW	
	QTY	P/N	QTY	P/N	QTY	P/N
①	1	8-995	1	8-995	1	8-967
	1	8-995	1	8-995	1	8-995
②	1	817-1249	1	817-1249	1	817-1244
③	2	817-699	2	817-699	2	817-399
④	1	817-1281	1	817-1257	1	817-1050
⑤	1	817-1028	1	817-1028	1	817-378
⑥	1	817-698	1	817-700	1	817-400
7	9	860-4	9	860-4	9	860-4
8	2	847-152	2	847-152	4	847-152
9	9	869-9	9	869-9	9	869-9
⑬	1	937-710	1	937-710	1	937-59
	1	937-673	1	937-673	1	937-27
⑭	2	008-01317	2	008-01317	-	-

Hot Water Temperature Controls

BILL OF MATERIAL					
ITEM	QTY	PART NO.	DESCRIPTION	WHERE USED	OPTION STD
①	-	-	BRACKET (8B937)	60"	D3
②	-	-	TEMPERATURE CONTROL (MC)	-	D3
③	-	-	WELL SEPARABLE	-	D3
④	-	-	TEMPERATURE CONTROL (HLC)	-	D3
⑤	-	-	WELL SEPARABLE	-	D3
⑥	-	-	TEMPERATURE CONTROL (OLC)	-	D3
7	-	-	MACH. SCR. #10-32 x 3/4"	-	--
8	-	-	BUSHING RED 3/4" x 1/2"	-	--
9	-	-	NUT MACH. SCR. #10-32	-	--
10	4	841-571	SHT. MTL. SCR. #10-32 x 5/8"	-	--
11	1	928-39	STRAP - PIPE	-	--
⑫	1	817-641	SOCKET SEPARABLE	-	D3
⑬	-	-	THERMOMETER	60"	D3
⑭	-	-	MTG.BRACKET	-	D3

Hot Water Temperature Controls



INTERNAL A.L.W.C.O.
(ABOVE 15# ONLY)

USED ON

WARRICK
WARRICK
M D. M.

20	1	817-740	CONTROL, AUX. L.W.C.O. WARRICK 3E2B	★ 30#-200#
	1	817-1020	CONTROL, AUX. L.W.C.O. WARRICK 3E3B	★ 30#-200#
	1	817-MM	CONTROL, AUX. L.W.C.O. MM 750MT-120	★ 15#-250#
24	2	67-533	ROD, ELECTRODE, 1/4" DIA X 24" LG.	★ 3E2B
	3	67-533	ROD, ELECTRODE, 1/4" DIA X 24" LG.	★ 3E3B

EXTERNAL A.L.W.C.O.

USED ON

M D. M.

20	1	817-98	CONTROL, AUX. L.W.C.O. (AUTO RESET)	15#
	1	817-97	CONTROL, AUX. L.W.C.O. (MANUAL RESET)	150#
	1	817-306	CONTROL, AUX. L.W.C.O. (MANUAL RESET)	200-250#

MAGNETROL

20	1	817-301	CONTROL, AUX. L.W.C.O.	15-250#
	1	817-1251	CONTROL, AUX. L.W.C.O.	300#

WARRICK

20	1	817-2372	CONTROL, AUX. L.W.C.O. WARRICK 3C2A	15-250#
	1	817-820	CONTROL, AUX. L.W.C.O. WARRICK 3C3B	15-250#
	1	817-2259	CONTROL, AUX. L.W.C.O. WARRICK 3K3A	15-250#

ITEM	QTY	PART NO		DESCRIPTION	USED ON
		M.D. M.	MAGNETROL		
1	1	850-230		PRESSURE GAUGE- 6" DIA	15# ST
	1	850-222		PRESSURE GAUGE- 6" DIA	150-200# ST
	1	850-134		PRESSURE GAUGE- 6" DIA	250# ST CB125S-175S
	1	850-320		PRESSURE GAUGE- 6" DIA	250# ST
	1	850-400		PRESSURE GAUGE- 6" DIA	300# ST
	1	850-223		PRESSURE GAUGE- 6" DIA	30# HW
	1	850-283		PRESSURE GAUGE- 6" DIA	60# HW
	1	850-221		PRESSURE GAUGE- 6" DIA	125# HW
	1	850-222		PRESSURE GAUGE- 6" DIA	150# HW
	1	817-226	817-163	LOW WATER CUT-OFF	15# ST
2	1	817-95	817-163	LOW WATER CUT-OFF	150# ST
	1	817-303	817-163	LOW WATER CUT-OFF	200-250# ST
	1		817-1962	LOW WATER CUT-OFF	300# ST
	1	-	-	-	-
	1	817-2305		CONTROL, WATER LEVEL PROBE TYPE, MDL. 750	ALL HW
3	1	817-2306		REMOTE SENSOR, PROBE HOLDER, MDL. 750	
	1	817-2307		PROBE EXT., 24" LG. FOR REMOTE SENSOR, MDL. 750	
4	1	941-1790		VALVE, BALL 3/4"	15-200# ST
	1	941-401		VALVE, GLOBE 3/4"	250# ST
	2	941-401		VALVE, GLOBE 3/4"	300# ST
5	1	825-31		COCK, UNION, BRASS	15-250# ST
	1		941-318	VALVE, GLOBE 1/4", BRASS	300# ST
	2	847-472		BUSHING 1-1/4" X 1"	200-250# ST
	1		847-432	BUSHING 1-1/4" X 1"	15-150# ST
	1		847-472	BUSHING 1-1/4" X 1"	200-250# ST
6	2		847-472	BUSHING 1-1/4" X 1"	300# ST
	1	851-199	851-38	GAUGE GLASS	15-250# ST
	1		851-321	GAUGE GLASS	300# ST
7	4	912-85		ROD, GAUGE GLASS	15-250# ST
	2		912-38	ROD, GAUGE GLASS	15-250# ST
8	1	825-132		SET, GAUGE GLASS	15-200# ST
	1	825-352		SET, GAUGE GLASS	250# ST
	1		825-357	SET, GAUGE GLASS	300# ST
9	1	059-6628		SIZED PLATE, #14 x 7" x 11"	M.M #750
10	1	941-55		VALVE, BALL 1/4"	15-200# ST
	1	941-318		VALVE, GLOBE, 1/4"	250-300# ST

ITEM	QTY	PART NO			DESCRIPTION	USED ON
		15-150#	200-250#	300#		
11	*		830-28		CHAIN SASH	250-300 ST
12	1	847-424	847-467		BUSHING 1" X 1/4"	ALL ST
13	1			847-612	BUSHING 1/2" X 1/4"	MAGNETROL
14	1	847-426	847-469		BUSHING 1" X 3/4"	MAGNETROL ST ONLY
15	1		928-46		THINWALL CLAMP 1"	HW
	1		928-45		THINWALL CLAMP 3/4"	ST
16	1		868-405		CAPSCREW HEX. HD. 1/4-20 x 3/4" LG.	-
17	2		952-145		WASHER, PLAIN 1/4"	-
18	1		952-92		LOCKWASHER 1/4"	-
19	1		869-21		NUT 1/4"-20	-
20	1	SEE TABLE			CONTROL, AUX. L.W.C.O.	
21	1		941-1790		VALVE, BALL 3/4"	15-200#
	1		941-401		VALVE, BALL 3/4"	250-300#
	1	847-426			BUSHING 1" x 3/4"	15-150#
22	1	847-469			BUSHING 1" x 3/4"	200-250#
23	2	847-472			BUSHING 1-1/4" x 3/4"	200-250#

Notes

NOTES



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