



**#1648A PLUMBING SCHEMATIC**Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
	<b>4800602</b>		<b>ASSEMBLY</b>
1	MFD00036	1	1-1/2"NPT ELBOW CAD
2	MFD00037	1	1-1/2"NPT STREET ELBOW
3	MF100016	2	3/8"NPT X CLOSE XHS NIPPLE
4	MF100015	2	3/8"NPT X 1-1/2"LG XHS NIPPLE
5	MF100030	1	1/2"NPT X 3-1/2"LG XHS NIPPLE
6	MF100028	1	1/2"NPS X 2" XHS NIPPLE
7	MF100027	1	1/2"NPT X CLOSE XHS NIPPLE
8	MFD00021	1	3/4"NPT ELBOW I
9	MF100008	1	1/4"NPT X 1 1/2" XHS NIPPLE
10	MFC00071	1	1-1/2",SAE 4 BOLT 'O'RING FLANGE KIT

## DRAWING REVISION HISTORY LISTING

**PART NO:** 4800602  
**DESCRIPTION:** #1648A PLUMBING SCHEMATIC

<u>APPR.</u>	<u>REV</u>	<u>DATE</u>	<u>BY</u>	<u>DESCRIPTION OF REVISION</u>
B	D	4/25/96	TLW	IGES FROM BRAVO TO AUTOCAD. REDUCED TO 'A' SIZE FORMAT. CREATED TYPED PARTS LIST. UPDATED TO CURRENT CHANGES. CREATED PRODUCT STRUCTURE.
SWB	E	9/27/96	SS	ADDED ITEM #55
SWB	F	9/2/97	TLW	MOVED BALL VALVE ON MOVABLE JAW PIVOT CYLINDERS TO RETURN SIDE, WAS ON PRESSURE SIDE.
TLW	G	03/06/98	JPS	ADDED DATALOGGER FITTING TX TO PORT.
TLW	H	4/20/98	DJL	REVISED TO AS BUILT CONDITION. REMOVED ITEM 43 (MFA00022) 8MPT/8FPT ELBOW.
SWB	J	12/8/98	DJL	CORRECTED SCHEMATIC BY ADDING ITEM 56 TO INDEXING CARRIAGE CYLINDER CIRCUIT. THIS ITEM HAS ALWAYS BEEN INSTALLED BUT HAS NEVER BEEN DOCUMENTED ON SCHEMATIC. REVISED ITEM 20 QTY FROM 27 TO 26.
SWB	K	6/7/99	MLM	REVISED CARRIAGE MANIFOLD TO CLOSER REPRESENT THE PHYSICAL LAYOUT FOR CLARIFICATION. ADDED ITEM #57 (ADL1402)1-QTY. CORRECTED A/B PORTS ON INDEX CYLINDERS TO AS BUILT CONDITION.
SPA	L	06/23/05	JAB	SEPARATED ITEMS 1-2, 4-6, 14, 8, 10-17, 19-23, 25-26, 28-31, 34-38, 41-42, 44-49, 51, 53-54 AND 56-57 FROM BOM TO CREATE #1648 FITTING KIT. RESEQUENCED ITEM NUMBERS ACCORDINGLY. REVISED TO ELIMINATE ITEM 9 (MFB00076) AND REPLACE W/ ITEM 28 (MFC00024), CHANGED ITEM 28 QTY FROM (1) TO (3). ALSO, CHANGED ITEM 55 (MFB00012) QTY FROM (4) TO (3) DUE TO CHANGE IN HYDRAULIC COOLER.
BLM	M	08/22/05	JAB	REVISED TO REFLECT CHANGES MADE IN FITTING KIT A4800602 REV A.
SWB	N	12/16/05	JAB	MOVED NOTES TO FACE OF DRAWING. ADDED NOTE 3 FOR CLARITY.
BLM	P	02/02/06	JAB	REVISED TO REFLECT CHANGES MADE IN HOSE KIT A4800601 REV C.

**#1648A FITTING KIT**Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
	<b>A4800602</b>		<b>ASSEMBLY</b>
20	MFB00031	18	8MPT/6MJIC ELBOW
21	MFB00040	2	8MPT/8MJIC ELBOW
22	MFD00019	2	HOSE CLAMP
23	MFA00021	4	8MPT PLUG
24	MFA00036	2	16MPT PLUG
25	MFB00055	3	12MPT/12MJIC ADAPTER
26	MFB00027	2	6MPT/6MJIC ELBOW
27	MFA00016	10	6MPT/6FPT ELBOW
28	MFC00024	3	8MSAE/6MJIC ELBOW
29	MFC00014	1	FLANGE KIT
30	MFB00056	1	12MPT/12MJIC ELBOW
31	MFB00019	1	4MPT/6MJIC ADAPTER
32	MFB00018	8	6MJIC/6MJIC/6FSJIC TEE
33	MFA00025	13	8MPT/6FPT REDUCER
34	MFB00028	2	6FPT/6MJIC ELBOW
35	MFB00026	27	6MPT/6MJIC ADAPTER
36	MFB00165	2	4MJIC/4MJIC/4MJIC TEE
37	MFB00149	6	4MPT/4MJIC ELBOW 45
38	MFB00127	4	4MPT/6MJIC ADAPTER
39	MFB00014	10	6MJIC/6MJIC ADAPTER
40	MFB00017	2	6MJIC/6MJIC/6MJIC TEE
41	MFA00020	2	6MPT/4FPT ADAPTER
42	MFB00015	6	6MJIC/6MJIC ELBOW
43	MFB00030	5	8MPT/6MJIC ADAPTER
44	MFA00024	2	8FPT/8FPT/8FPT TEE
45	MFC00006	4	8MSAE/8MJIC ADAPTER
46	MFB00077	2	8MJIC/8MJIC/8FSJIC TEE
47	MFB00081	4	12MPT/8MJIC ELBOW
48	MFB00045	6	8MPT/10MJIC ADAPTER
49	MFB00085	1	8MPT/10MJIC ELBOW
50	MFC00062	1	8MSAE/8MPT ADAPTER
51	MFB00086	2	10MJIC/10MJIC UNION ELBOW
52	MFC00009	2	8FPT/10MSAE ELBOW
53	MFB00129	2	6MJIC/6MJIC/6MJIC TEE
54	MFD00027	2	HOSE END
55	MFB00012	3	6MJIC/6FSJIC ELBOW
56	MHA00033	8	1/2" HOSE CLAMP
57	MHA00032	3	5/8" HOSE CLAMP
58	MFB00138	2	6MPT/4MJIC ADAPTER
59	MFC00066	2	8MSAE/6MPT ADAPTER
60	MFC00033	3	8MSAE/10MJIC ADAPTER

## #1648A FITTING KIT

Parts List

---

ITEM	PART NO.	QTY.	DESCRIPTION
61			
62			
63	MFB00207	1	6FJIC/6MJIC W/.062" ORIFICE
64	MFC00113	1	6MSAE/6FSAE ELBOW
65	MFH00048	1	3/8SAE QUICK DISCONNECT NIPPLE
66	MFA00204	1	4MPT/6FSAE ADAPTER

---

## DRAWING REVISION HISTORY LISTING

**PART NO:** A4800602

**DESCRIPTION:** #1648A FITTING KIT

<u>APPR.</u>	<u>REV</u>	<u>DATE</u>	<u>BY</u>	<u>DESCRIPTION OF REVISION</u>
BLM	A	08/22/05	JAB	REVISED TO CHANGE ITEM 61 FROM 4828101 TO MFB00026, COMBINED ITEM 61 WITH ITEM 35 AND ADD QTY 1 ITEM 63 MFB00207. CHANGES MADE TO ELIMINATE MACHINING REQUIRED IN 4828101 FITTING.
SWB	B	12/16/05	JAB	REMOVED ITEM 62 (ADL1402). ADDED ITEMS 64 (MFC00113), 65 (MFH00048) AND ITEM 66 (MFA00204) FOR NEW DATALOGGER. REMOVED NOTE 1.

## #1648A HOSE KIT

Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
	<b>A4800601</b>	<b>1</b>	<b>ASSEMBLY</b>
100	HBBDCD053	1	HOSE ASSEMBLY OAL 53"
101	HBBDCD055	1	HOSE ASSEMBLY OAL 55"
102	HABBCD097	1	HOSE ASSEMBLY OAL 97"
103	HABBCD096	1	HOSE ASSEMBLY OAL 96"
104	HBBDED052	1	HOSE ASSEMBLY OAL 52"
105	HBBDBD032	1	HOSE ASSEMBLY OAL 32"
106	HABBCB060	2	HOSE ASSEMBLY OAL 60"
107	HDBGBG091	1	HOSE ASSEMBLY OAL 91"
108	HABBBB063	1	HOSE ASSEMBLY OAL 63"
109	HABBBB064	1	HOSE ASSEMBLY OAL 64"
110	HBBDCD065	1	HOSE ASSEMBLY OAL 65"
111	HACDCD021	1	HOSE ASSEMBLY OAL 21"
112	HACDCD022	1	HOSE ASSEMBLY OAL 22"
113	HABDCD080	1	HOSE ASSEMBLY OAL 80"
114	HCBEDE028	1	HOSE ASSEMBLY OAL 28"
115	HCBEEE015	1	HOSE ASSEMBLY OAL 15"
116	HCBEEE104	1	HOSE ASSEMBLY OAL 104"
117	HCBEDE104	1	HOSE ASSEMBLY OAL 104"
118	HABDCD079	2	HOSE ASSEMBLY OAL 79"
119	HABDCD082	1	HOSE ASSEMBLY OAL 82"
120	HABDCB092	1	HOSE ASSEMBLY OAL 92"
121	HABDCB083	1	HOSE ASSEMBLY OAL 83"
122	HBBDCD117	1	HOSE ASSEMBLY OAL 117"
123	HBBDCD115	1	HOSE ASSEMBLY OAL 115"
124	HABDBD022	1	HOSE ASSEMBLY OAL 22"
125	HABDBD019	3	HOSE ASSEMBLY OAL 19"
126	HABDBD036	2	HOSE ASSEMBLY OAL 36"
127	HABDBD032	4	HOSE ASSEMBLY OAL 32"
128	HABDBD035	2	HOSE ASSEMBLY OAL 35"
129	HIBFBF080	2	HOSE ASSEMBLY OAL 80"
130	HDBGBG064	1	HOSE ASSEMBLY OAL 64"
131	HABDBD014	4	HOSE ASSEMBLY OAL 14"
132	HABDBD025	4	HOSE ASSEMBLY OAL 25"
133	HQZZZZ014	1	HOSE ASSEMBLY OAL 14"
134	HABDBD021	4	HOSE ASSEMBLY OAL 21"
135	HABDBD028	2	HOSE ASSEMBLY OAL 28"
136	HABDBD044	2	HOSE ASSEMBLY OAL 44"
137	HABDBD050	2	HOSE ASSEMBLY OAL 50"
138	HABDBD039	2	HOSE ASSEMBLY OAL 39"

## #1648A HOSE KIT

Parts List

ITEM	PART NO.	QTY.	DESCRIPTION
139	HIBFBF042	1	HOSE ASSEMBLY OAL 42"
140	HIBFBF040	1	HOSE ASSEMBLY OAL 40"
141	HIBFBF054	1	HOSE ASSEMBLY OAL 54"
142	HIBFBF053	1	HOSE ASSEMBLY OAL 53"
143	HBBDDD017	1	HOSE ASSEMBLY OAL 17"
144	HABDCD097	1	HOSE ASSEMBLY OAL 97"
145	HABDCD096	1	HOSE ASSEMBLY OAL 96"
146	HACDCB035	1	HOSE ASSEMBLY OAL 35"
147			
148	HBBDBD014	1	HOSE ASSEMBLY OAL 14"
149	HBBDCD014	1	HOSE ASSEMBLY OAL 14"
150	HBBDCD016	1	HOSE ASSEMBLY OAL 16"
151	HBBDDD022	1	HOSE ASSEMBLY OAL 22"
152	HBBDDD023	1	HOSE ASSEMBLY OAL 23"
153	HBBDED016	1	HOSE ASSEMBLY OAL 16"
154			
155	HCBEEE020	1	HOSE ASSEMBLY OAL 20"
156	HCBEEE021	1	HOSE ASSEMBLY OAL 21"
157	HIBFBF028	1	HOSE ASSEMBLY OAL 28"
158	HACDCB036	1	HOSE ASSEMBLY OAL 36"

## DRAWING REVISION HISTORY LISTING

**PART NO:** A4800601  
**DESCRIPTION:** #1648A HOSE KIT

<u>APPR.</u>	<u>REV</u>	<u>DATE</u>	<u>BY</u>	<u>DESCRIPTION OF REVISION</u>
TLW	-	8/10/99	MRP	REVISED ITEM #111 FROM HACDCD019 TO HACDCD021 AND REVISED ITEM 112 FROM HACDCD020 TO HACDCD022.
SPA	A	06/23/05	JAB	REVISED ITEM # 145 FROM HABDCB094 TO HABDCB096 TO EASE INSTALLATION, AND ITEM # 104 FROM HBBDED058 TO HBBDED052 AND ITEM #105 FROM HBBDED027 TO HBBDBD032 DUE TO CHANGE OF HYDRAULIC COOLER.
SWB	B	12/16/05	JAB	REMOVED NOTE 1.
BLM	C	02/02/06	JAB	REVISED TO CHANGE ITEM #102 FROM HABBBD097 TO HABBCD097, ITEM #103 FROM HABBBD096 TO HABBCD096 AND ITEM #147 FROM HBBDBD008 TO HABDBD014. INCREASED QTY OF ITEM #147 FROM 1 TO 2 AND DELETED QTY 1 ITEM #154 HBCDBD006. CHANGED ITEM #145 FROM HABDCB096 TO HABDCD096 TO CORRECT CHANGE MADE AT REV A.