



PRIMETALS TECHNOLOGIES JAPAN
PLANT CONTROLLER
AFTER-SALES SERVICE
INFORMATION



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OVERVIEW

Primetals Technologies Japan had adopted several types of controllers of ex-MHI, ex-Hitachi, and ex-IHI, for its metallurgical plants, until it started the supply of its own model of controller. The production of these former types of controllers started in 1980s. Since then, with the remarkable development of electric and automation technologies, IC chips and other electrical components have been improved in performance and integration (compactness). As a result, and due to corresponding specification changes or phase-out of sub components, upgrades of some plant controllers may be necessary.

LIFECYCLE OF PTJ CONTROLLER

Primetals Technologies Japan offers after-sales service for metallurgical plant controllers from ex-MHI, ex-Hitachi and ex-IHI, as well as upgrades to the latest Primetals Technologies Japan controller. The former controllers are classified into the following five types.

- ex-MHI controller
- ex-IHI controller
- HYROP controller
- HYROP (R900 type) controller
- AFC controller

The lifecycle of each type of controller is shown in Fig.1- Fig.5. Blue-color bar indicates discontinued controllers and orange-color bar indicates the latest controller supplied by Primetals Technologies Japan.

MHI	Mitsubishi Heavy Industries, Ltd.
IHI	IHI Corporation
HYROP	Hydraulic Roll Positioning Device
AFC	Automatic Flatness Control
PTJ	Primetals Technologies Japan, Ltd.



AFTER-SALES SERVICE INFORMATION OF EX-MHI CONTROLLER

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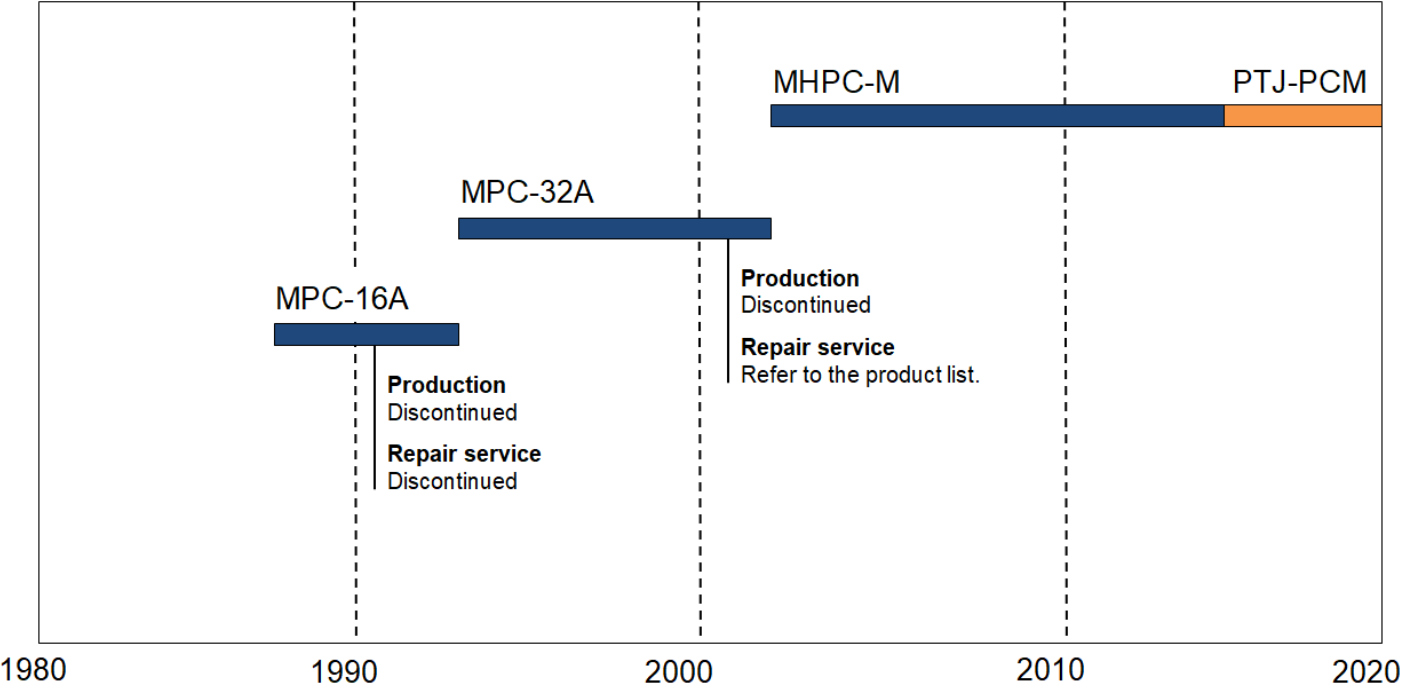


Fig. 1: Lifecycle of ex-MHI controller

AFTER-SALES SERVICE INFORMATION OF EX-MHI CONTROLLER PRODUCTS

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	MPC-16A CPU board	MPC-CPU	Discontinued	Discontinued	
2	MPC-16A DIO board	MPC-DIO	Discontinued	Discontinued	
3	MPC-16A inductosyn board	MPC-IND	Discontinued	Discontinued	
4	MPC-16A servo AC fail board	AC FAIL	Discontinued	Discontinued	
5	MPC-16A servo DC fail board	DC FAIL	Discontinued	Discontinued	
6	MPC-16A servo analog filter	ITF 173-34356	Discontinued	Discontinued	
7	MPC-16A servo output switching board	S/V REF-O2-MMXX	Discontinued	Discontinued	
8	MPC-16A servo output switching board	S/V REF-O4-MMMM	Discontinued	Discontinued	
9	MPC-16A tracking board	MPC-TRK	Discontinued	Discontinued	
10	MPC-16A buffer board	MPC-BUF	Discontinued	Discontinued	
11	MPC-16A monitor board	MPC-MNT	Discontinued	Discontinued	
12	MPC-16A signal rectifier board	MPC-ISR	Discontinued	Discontinued	
13	MPC-32A 386CPU board	M32-CPU386	Discontinued	Discontinued	
14	MPC-32A 486CPU board	M32-CPU486	Discontinued	Discontinued	
15	MPC-32A high speed DI board	M32-DI2-24	Discontinued	Discontinued	
16	MPC-32A high speed DO board	M32-DO2	Discontinued	Discontinued	
17	MPC-32A DIO board	M32-DIO	Discontinued	Discontinued	
18	MPC-32A high speed AI board	M32-AI16	Discontinued	Discontinued	
19	MPC-32A high speed AO board	M32-AO8	Discontinued	Discontinued	
20	MPC-32A AIO16A board	M32-AIO16A	Discontinued	Discontinued	
21	MPC-32A OPM AMP unit	MPC-32A OPM AMP unit	Discontinued	Discontinued	
22	MPC-32A OPM communication board	MPC32A-OPM communication CPU	Discontinued	Discontinued	
23	MPC-32A camera interface board (Slave)	M32-CAMIF-M	Discontinued	Discontinued	
24	MPC-32A camera interface board (Master)	M32-CAMIF-M	Discontinued	Discontinued	
25	MPC-32A MP scale processing board	M32-MPSP	Discontinued	Discontinued	

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
26	MPC-32A analog signal filter board	ITF 173-34356	Discontinued	Discontinued	
27	MPC-32A DC fail board	DC FAIL	Discontinued	Discontinued	
28	MPC-16A servo output switching board	S/V REF	Discontinued	Discontinued	
29	MPC-32A MP scale unit (Master)	MSU-M32	Discontinued	Discontinued	
30	MPC-32A MP scale unit (Slave)	MSU-S32	Discontinued	Discontinued	
31	MPC-32A MP scale unit (Master)	MSUA-M32	Available until Mar 2022	Available until Mar 2027	(Note 1)
32	MPC-32A MP scale unit (Slave)	MSUA-S32	Available until Mar 2022	Available until Mar 2027	(Note 1)
33	MPC-32A MP scale unit (AVST)	MSUA-AVST	Available until Mar 2022	Available until Mar 2027	(Note 1)
34	MPC-32A MP scale preamplifier	AMP1	Available until Mar 2022	Available until Mar 2027	(Note 1)
35	MPC-32A MP scale unit2	PSB20-UNIT	Discontinued	Discontinued	
36	MPC-32A MP scale preamplifier2	AMP2	Discontinued	Discontinued	
37	PTJ-PCM analog signal filter board	ITFBOX-AC-I	Available	Available	
38	PTJ-PCM analog signal filter board	ITFBOX-DC-I	Available	Available	
39	FTD Image processing equipment (In-product panel type)		Discontinued	Discontinued	
40	FTD Image processing equipment (FA-PC type)		Discontinued	Discontinued	
41	Strip tip detector for Down Coiler (sensor)	ASC552	Available until Mar 2023	Available until Mar 2028	(Note 1)
42	Strip tip detector for Down Coiler (controller)	CTL200	Available until Mar 2023	Available until Mar 2028	(Note 1)
43	Strip tip detector for Down Coiler (AMP)	ASP100	Available until Mar 2023	Available until Mar 2028	(Note 1)
44	Data gathering device (Analog Input Type)		Discontinued	Discontinued	
45	Data gathering device (CC-Link IE Type)		Discontinued	Discontinued	
46	Response measuring device (card bus type)		Discontinued	Discontinued	
47	Response measuring device (CONTEC USB type)		Available	Available	
48	DSP systems for strip stabilizer (all types)		Discontinued	Discontinued	
49	Electromagnet for strip stabilizer (all types)		Discontinued	Discontinued	
50	Electromagnet driver for strip stabilizer (all types)		Discontinued	Discontinued	
51	Data gathering device for strip stabilizer (all types)		Discontinued	Discontinued	

(Note 1) Depending on the supply status of spare parts and repair parts, manufacture and repair may not be possible.



AFTER-SALES SERVICE INFORMATION OF EX-IHI CONTROLLER

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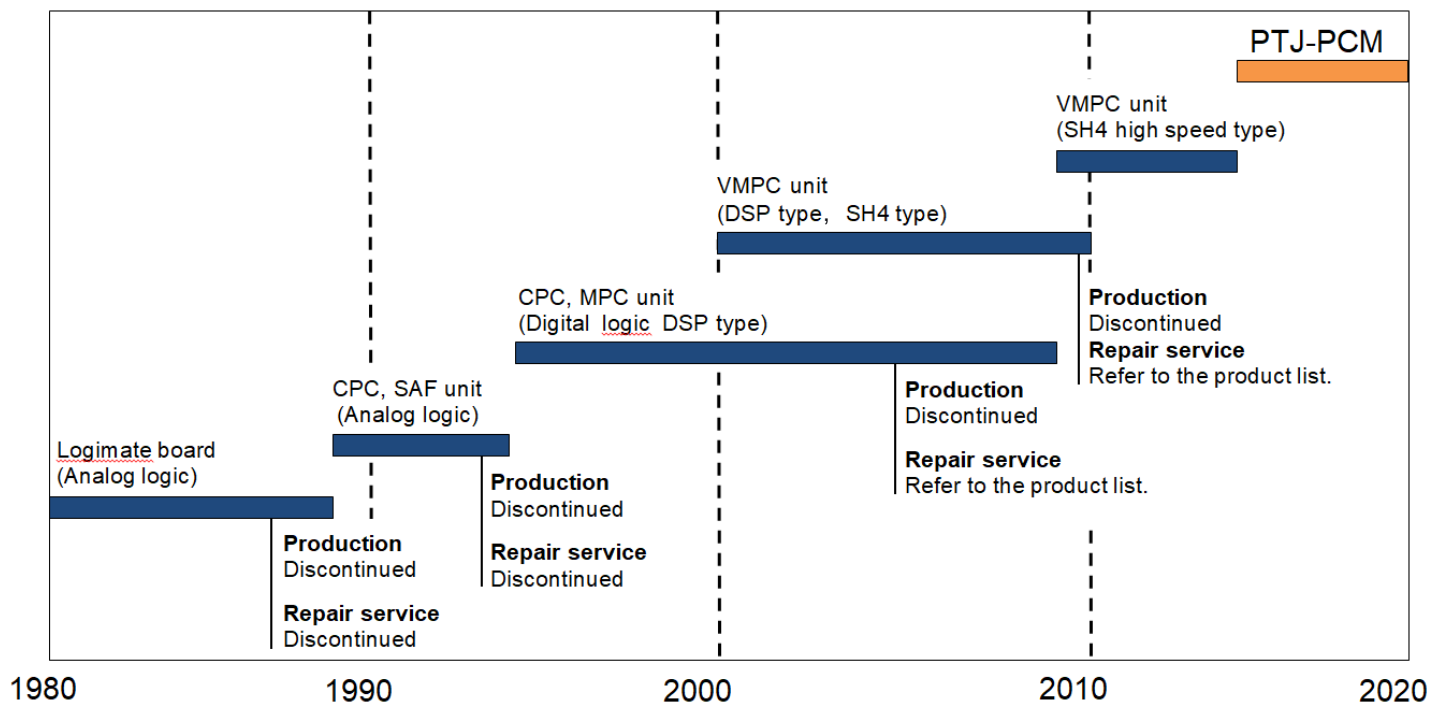


Fig. 2: Lifecycle of ex-IHI controller

AFTER-SALES SERVICE INFORMATION OF EX-IHI CONTROLLER PRODUCTS

A) EX-IHI LOGIMATE BOARD

Ex-IHI logimate board are the end of all spare parts and after-sales service.

NO	TYPE	NO	TYPE	NO	TYPE	NO	TYPE
1	AA700	26	AD620	51	ARF4000	76	BD623
2	AA701	27	AF700	52	ART4000	77	BF600
3	AA702	28	AF700Y	53	AS700Y	78	BR500
4	AA704	29	AF703	54	AS710	79	BR616
5	AA705	30	AGC100Y	55	AS710Y	80	CA700
6	AA706	31	AGC101Y	56	AS720(Y)	81	CC500
7	AA720	32	AGC3000Y	57	AT400	82	CD690
8	AA721	33	AGC3001Y	58	BA400Y	83	CDR4000
9	AA721Y	34	AGC3010	59	BA600	84	CE700Y
10	AA721YA	35	AGC3010Y	60	BA690Y	85	CES3000
11	AA722	36	AGC3011Y	61	BA700	86	CES3007
12	AA722DA	37	AI400	62	BA700Y	87	CES3020
13	AA722DB	38	AI700	63	BA790Y	88	CHK4000
14	AA722Y	39	AI710	64	BC600	89	CM600Y
15	AA722YA	40	AI710Y	65	BC600Y	90	CNT4000
16	AA723	41	AI720	66	BC601	91	CP601
17	AC700	42	AI720Y	67	BC690	92	CP602Y
18	AC701	43	AL700	68	BC690Y	93	CP690Y
19	AC720	44	AL701	69	BD600	94	CTF3000Y
20	AC720Y	45	ALU3000	70	BD612	95	CTF3001Y
21	AC721	46	ALU3100Y	71	BD614Y	96	DA600
22	AC721Y	47	ALU3100YA	72	BD615Y	97	DA602
23	ACH4000	48	AM700	73	BD616	98	DA610
24	AD600	49	AP400	74	BD616Y	99	DA612
25	AD610	50	APUC200Y	75	BD622	100	DA620

NO	TYPE	NO	TYPE	NO	TYPE	NO	TYPE
101	DA660	131	DII3201Y	161	DT700Y	191	FF601
102	DA670	132	DII3210Y	162	DT710	192	FF602
103	DA690	133	DII3211Y	163	DTA3000Y	193	FF611Y
104	DB614Y	134	DII400Y	164	DUB4005	194	FF612Y
105	DB615	135	DII401	165	DUB4010	195	FF650Y
106	DB616	136	DII401Y	166	DWA3000Y	196	FGC3000Y
107	DC600	137	DIO3000	167	DWB3000Y	197	FRAC200Y
108	DC601	138	DIO3000Y	168	DWK3000Y	198	FLK200Y
109	DDF3000	139	DIO3001Y	169	DWL3000Y	199	FOG200Y
110	DDF3100Y	140	DIO3100Y	170	DWM3000Y	200	FRD3000
111	DI700Y	141	DIO3101Y	171	DWS3000Y	201	FRD3100Y
112	DIF3000Y	142	DIO3200Y	172	DWT3000Y	202	FTG200Y
113	DIF3001Y	143	DIO3201Y	173	DWT3100	203	FV700
114	DIF3010	144	DIO3211Y	174	EC600	204	GD400
115	DII3000	145	DIO400Y	175	EN600Y	205	HC6681
116	DII3000Y	146	DIV610	176	EX600	206	HD600
117	DII3001	147	DM501	177	FA600	207	HL660
118	DII3002Y	148	DPC3000Y	178	FA612	208	HL661
119	DII3010Y	149	DPI3000	179	FAD3000Y	209	HL662
120	DII3011	150	DPI3001	180	FAD3100Y	210	HL663
121	DII3011Y	151	DPI3001Y	181	FC400Y	211	HL664
122	DII3012	152	DPO3001	182	FC410	212	HL665
123	DII3012Y	153	DPO3001Y	183	FC410Y	213	HL666
124	DII3100Y	154	DPR3000Y	184	FC600	214	HL667
125	DII3101Y	155	DR400	185	FCC200Y	215	HL668
126	DII3102Y	156	DR410Y	186	FCO200Y	216	HL669
127	DII3110Y	157	DR420Y	187	FD700	217	HL670
128	DII3111Y	158	DR490Y	188	FDB4000	218	HL671
129	DII3112Y	159	DR550	189	FDR200Y	219	HL672
130	DII3200Y	160	DS600	190	FF600	220	HL673

NO	TYPE	NO	TYPE	NO	TYPE	NO	TYPE
221	HL674	251	LDR4000	281	NA630Y	311	PRC3000Y
222	HL676	252	LE600	282	NA640	312	RBD3000
223	HL677	253	LE601	283	NA640Y	313	RBD30001Y
224	HL677Y	254	LE620	284	NAC100Y	314	RBD3100YA
225	HL679	255	LED3000Y	285	NAC101Y	315	RC700
226	HL681	256	LED3001Y	286	NB551	316	RC700Y
227	HL682	257	LED600M	287	NB601	317	RC720
228	HR600	258	LGC3000Y	288	NB602	318	RC721
229	IND3000	259	LR500	289	NB602Y	319	RC722
230	IND3001Y	260	LR600Y	290	ND600	320	REF4000
231	IND3010Y	261	LUP3000	291	ND600R	321	REY2000
232	IND3010YA	262	LUP3000Y	292	ND601	322	REY2001
233	IND3011Y	263	LUP3001	293	NE500	323	RM600
234	IS610	264	LUP3001Y	294	PA551	324	RM600Y
235	IS610Y	265	LV711Y	295	PA700Y	325	RV401
236	IS612	266	LV713Y	296	PC610	326	RV402
237	IS613	267	MAG3000	297	PD700Y	327	RV410Y
238	IS614	268	MAG3000Y	298	PD710Y	328	RV490Y
239	IS690	269	MAO3000Y	299	PG3000	329	RV550
240	ISO4000	270	MC600	300	PH660	330	RY500
241	IV600	271	MC600Y	301	PH700Y	331	RY510
242	IV610	272	MDI3000Y	302	PI619	332	RY600
243	IV610Y	273	MDO3000Y	303	PI620	333	RY610
244	IV620	274	MF701	304	PI701	334	RY700
245	IV620Y	275	MI700	305	PIC3000	335	RY702
246	LD500	276	MOT4000	306	PIC3000Y	336	RY712
247	LD600	277	NA540	307	PM600	337	RY2001
248	LD660	278	NA620	308	PM620Y	338	SA700
249	LD661	279	NA620Y	309	PR400Y	339	SA720
250	LD661Y	280	NA630	310	PRA4000	340	SA730

NO	TYPE	NO	TYPE	NO	TYPE	NO	TYPE
341	SA730(A)	361	SL670	381	SS693Y	401	TD690Y
342	SA730Y	362	SL680	382	SR600	402	TM700
343	SA750Y	363	SML3000Y	383	SUM4000	403	TM700Y
344	SBC3085Y	364	SNT3000Y	384	SV500	404	TM701
345	SC600	365	SPC3000	385	SVA4000	405	TM701A
346	SD371Y	366	SPC3001	386	SVG4000	406	TS600
347	SD500	367	SQB4000	387	SW600	407	TS601
348	SD550	368	SQB4100	388	SW600M	408	UC600Y
349	SD600	369	SQB4200	389	SW601	409	UL700Y
350	SD616	370	SQB4300	390	SW601Y	410	UV600M
351	SD616A	371	SR600	391	SW602	411	VF700
352	SD660	372	SRF3001	392	SYR3000Y	412	VF700Y
353	SD661	373	SS600	393	SYR3000YA	413	VF701
354	SD671Y	374	SS601	394	SYR3001	414	VFC100Y
355	SD672Y	375	SS602	395	SYR3101Y	415	VI700
356	SDC100Y	376	SS603	396	TD600	416	VI700Y
357	SET3000	377	SS690Y	397	TD610	417	VI790Y
358	SG600	378	SS691Y	398	TD610Y	418	VR720Y
359	SL600	379	SS692	399	TD611		
360	SL660	380	SS692Y	400	TD612		

AFTER-SALES SERVICE INFORMATION OF EX-IHI CONTROLLER PRODUCTS

B) EX-IHI CPC, SAF, MPC UNIT

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	Servo valve AMP unit	SAU-001-1000A	Discontinued (Alternative solution)	Discontinued	Alternative unit No.11
2	Servo valve AMP unit	SAU-002-140	Discontinued (Alternative solution)	Discontinued	Alternative unit No.7
3	Servo valve AMP unit	SAU-002-250	Discontinued (Alternative solution)	Discontinued	Alternative unit No.8
4	Servo valve AMP unit	SAU-002-350	Discontinued (Alternative solution)	Discontinued	Alternative unit No.9
5	Servo valve AMP unit	SAU-002-500	Discontinued (Alternative solution)	Discontinued	Alternative unit No.10
6	Servo valve AMP unit	SAU-002-1000	Discontinued (Alternative solution)	Discontinued	Alternative unit No.11
7	Servo valve AMP unit	SAU-012-140	Available	Available	
8	Servo valve AMP unit	SAU-012-250	Available	Available	
9	Servo valve AMP unit	SAU-012-350	Available	Available	
10	Servo valve AMP unit	SAU-012-500	Available	Available	
11	Servo valve AMP unit	SAU-012-1000	Available	Available	
12	Servo valve AMP unit	SAM2000H	Available	Available	
13	2CH V/I converter	VIC-40-2	Available	Available	
14	2CH V/V converter	VVC-40-2	Available	Available	
15	RAS unit	RAS unit	Available until 2026	Available until 2031	(Note 1)
16	Buffer AMP unit	BAC16	Available until 2026	Available until 2031	(Note 1)
17	Active filter unit	AFU001	Available until 2026	Available until 2031	(Note 1)
18	Servo valve switching board	SVOC01	Available until 2026	Available until 2031	(Note 1)
19	Analog CPC unit	CPC001	Discontinued	Discontinued	
20	Analog CPC unit	CPC002	Discontinued	Discontinued	
21	Digital CPC unit	CPC-D01	Discontinued	Discontinued	
22	Digital CPC unit	CPC-D02— * *	Discontinued	Discontinued	
23	Digital CPC unit	CPC-D03— * *	Discontinued	Discontinued	
24	Digital CPC unit	CPC-D04	Discontinued	Discontinued	

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
25	Digital CPC unit	CPC-D12— * *	Discontinued	Discontinued	
26	Digital CPC unit	CPC-D21	Discontinued	Discontinued	
27	Digital CPC unit	CPC-D31	Discontinued	Discontinued	
28	Safety logic unit (old)	SAF-002	Discontinued	Discontinued	
29	Safety logic unit (new)	SAF-012	Discontinued	Discontinued	
30	Analog DCPC unit	DCPC	Discontinued	Discontinued	
31	Tracking unit (old)	DTR	Discontinued	Discontinued	
32	Digital DCPC unit	DCPC-N	Discontinued	Discontinued	
33	Tracking unit (new)	DTR-N	Discontinued	Available until 2026	(Note 1)
34	New tracking unit	TRACKING UNIT	Discontinued	Discontinued	
35	MPC unit	MPC-A(script type)	Discontinued	Discontinued	
36	MPC unit	MPC-A(VMD type)	Discontinued	Discontinued	
37	Healthy unit	HRY900	Discontinued	Discontinued	
38	Buffer AMP unit	BA unit	Discontinued	Discontinued	
39	Digital filter unit	REMORA	Discontinued	Discontinued	
40	Photo coupler unit	PHOTO ISO unit	Discontinued	Discontinued	
41	Summing AMP unit	DAMP-U001	Discontinued	Discontinued	
42	Summing AMP unit	DAMP-U002(vibration proof removed)	Discontinued	Discontinued	
43	Mandrel tracking unit		Discontinued	Discontinued	
44	Coil touch detecting board		Discontinued	Discontinued	
45	Bending unit	RBD001	Discontinued	Discontinued	
46	Bending unit	RBD002	Discontinued	Discontinued	
47	FARE unit	FARE unit Ver.3 series	Discontinued	Discontinued	
48	FARE unit	FARE unit Ver.4.0	Discontinued	Discontinued	
49	FARE unit	FARE unit Ver.4.0R	Discontinued	Discontinued	
50	Pulse isolation	06G08-009	Discontinued	Discontinued	
51	Analog AMP unit		Discontinued	Discontinued	
52	PR unit	PR unit	Discontinued	Discontinued	
53	Hard unit		Discontinued	Discontinued	
54	BC-BCD conversion board	BC-BCD board	Discontinued	Discontinued	

(Note 1) Depending on the supply status of spare parts and repair parts, manufacture and repair may not be possible.

AFTER-SALES SERVICE INFORMATION OF EX-IHI CONTROLLER PRODUCTS

C) EX-IHI VMPC UNIT

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	VMPC DSP board	VMPC-DSP	Discontinued	Discontinued	
2	VMPC counter board	VMPC-CT	Discontinued	Discontinued	
3	VMPC analog board	VMPC-AIO	Discontinued	Discontinued	
4	VMPC DI board	VMPC-64DI	Discontinued	Discontinued	
5	VMPC DO board	VMPC-64DO	Discontinued	Discontinued	
6	VMPC SH4 control board	VMPC-SH4-240	Discontinued	Available until Mar 2026	(Note 1)
7	VMPC SH4 diagnosis board	VMPC-SH4-DM	Discontinued	Available until Mar 2026	(Note 1)
8	VMPC 20 slot rack	VMPC-L20	Discontinued	Available until Mar 2026	(Note 1)
9	VMPC 5 slot rack	VMPC-L05	Discontinued	Available until Mar 2026	(Note 1)
10	VMPC SH4 control board (high speed type)	VMPC-SH4-240-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
11	VMPC SH4 diagnosis board (high speed type)	VMPC-SH4-DM-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
12	VMPC 20 slot rack	VMPC-L20-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
13	VMPC 5 slot rack	VMPC-L05-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
14	VMPC analog board (high speed type)	VMPC-AI/O-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
15	VMPC DI board (high speed type)	VMPC-64DO-HS- * *	Available until Mar 2026	Available until Mar 2031	(Note 1)
16	VMPC DO board (high speed type)	VMPC-64DI-HS- * *	Available until Mar 2026	Available until Mar 2031	(Note 1)
17	VMPC counter board (high speed type)	VMPC-CT-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
18	VMPC AJC counter board	VMPC-CTJ-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
19	VMPC PIO board	VMPC-PI-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
20	VMPC Ethernet board	VMPC-EN-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
21	VMPC FARE board	VMPC-FARE-HS	Available until Mar 2026	Available until Mar 2031	(Note 1)
22	VMPC analog filter module	CRF	Available until Mar 2026	Available until Mar 2031	(Note 1)

(Note 1) Depending on the supply status of spare parts and repair parts, manufacture and repair may not be possible.

AFTER-SALES SERVICE INFORMATION OF HYROP CONTROLLER

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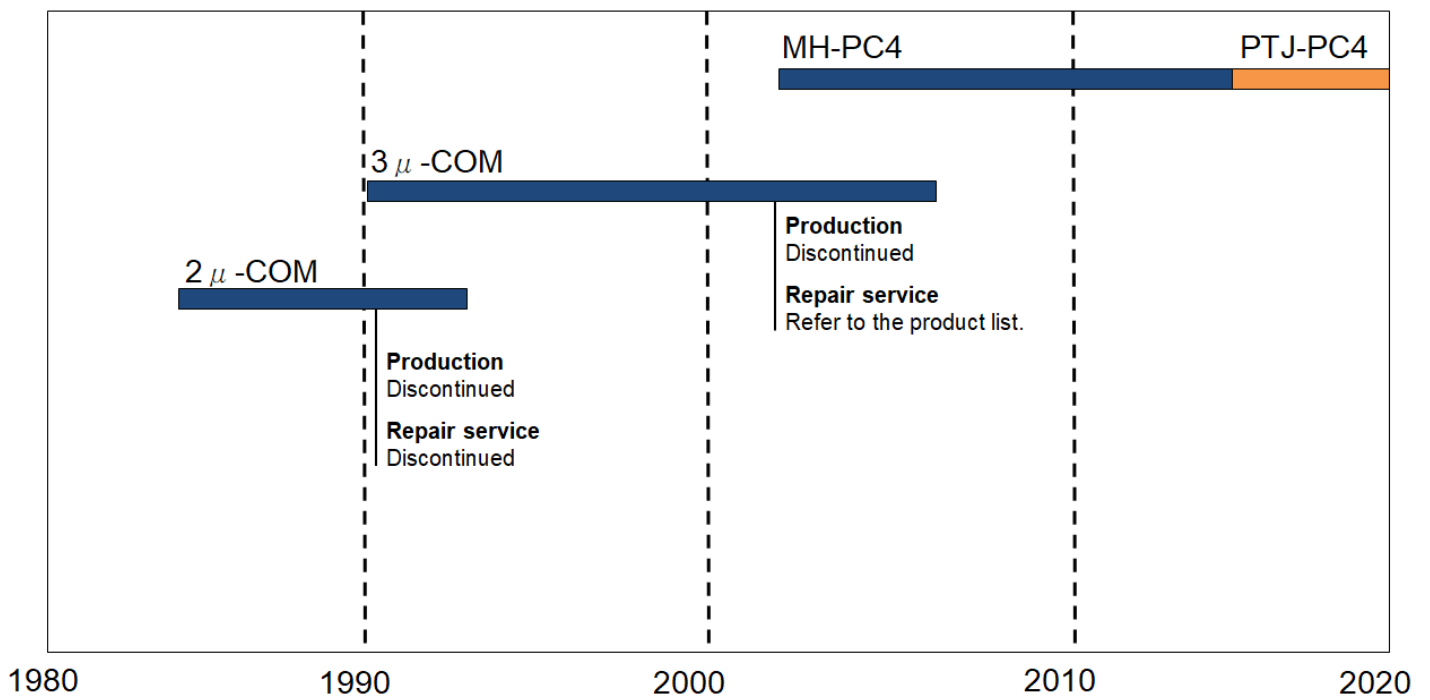


Fig. 3: Lifecycle of HYROP controller

AFTER-SALES SERVICE INFORMATION OF HYROP CONTROLLER

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	2μ-com CPU board	FVME-110-1	Discontinued	Discontinued	
2	2μ-com memory board	FVME-SRAM/ROM	Discontinued	Discontinued	
3	2μ-com D/A board	FVME-8DA	Discontinued	Discontinued	
4	2μ-com A/D board	FVME-16AD	Discontinued	Discontinued	
5	2μ-com DI board	FVME-DIN	Discontinued	Discontinued	
6	2μ-com DO board	FVME-DOUT	Discontinued	Discontinued	
7	2μ-com counter board	FVME-CNT	Discontinued	Discontinued	
8	3μ-com power supply unit	AVR-11B	Discontinued	Discontinued	
9	3μ-com control unit	CTU-02	Discontinued	Discontinued	
10	3μ-com serial communication unit	SIU-03	Discontinued	Discontinued	
11	Power AMP	PAW-4010B	Available	Available	
12	PC4-power supply	PC4-PWR	Available until Jan 2024	Available until Jan 2028	(Note 1)
13	PC4-CPU board	PC4-CPU	Available until Jan 2024	Available until Jan 2028	(Note 1)
14	PC4-DA board	PC4-DA	Available until Jan 2024	Available until Jan 2028	(Note 1)
15	PC4-AD board	PC4-AD	Available until Jan 2024	Available until Jan 2028	(Note 1)
16	PC4-LINK board	PC4-LNK	Available until Jan 2024	Available until Jan 2028	(Note 1)
17	PC4-CLOOP board	PC4-CLOOP	Available until Jan 2024	Available until Jan 2028	(Note 1)
18	PC4-DIO board	PC4-DIO	Available until Jan 2024	Available until Jan 2028	(Note 1)

(Note 1) Depending on the supply status of spare parts and repair parts, manufacture and repair may not be possible.

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER

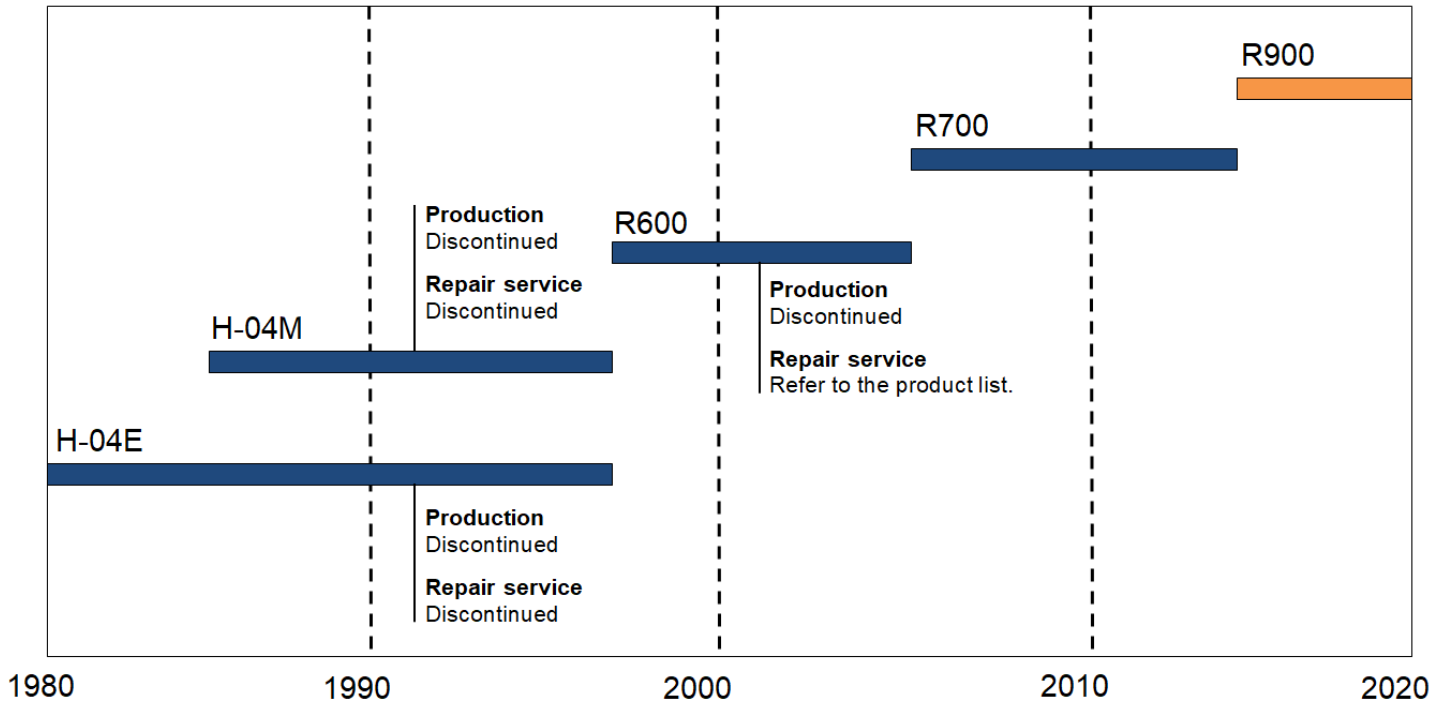


Fig. 4: Lifecycle of HYROP (R900 type) controller

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER PRODUCTS

A) 04E

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	CPU Unit	HSC-4000	Discontinued	Discontinued	
2	CPU board/B.P.U	LCP001A	Discontinued	Discontinued	
3	CPU board/E.P.U	LCP010A	Discontinued	Discontinued	
4	CPU board/P.I.F	LCP088A	Discontinued	Discontinued	
5	CPU board/B.C	LCP090A	Discontinued	Discontinued	
6	CPU board/MEM.	LMM020A	Discontinued	Discontinued	
7	CPU board/C.T.M	LMM008A	Discontinued	Discontinued	
8	CPU board/PRG	LIO000A	Discontinued	Discontinued	
9	PIO board/DIO	HLT275A	Discontinued	Discontinued	
10	PIO board/RI/OW	LLG020A	Discontinued	Discontinued	
11	PIO board/CNT	LPT030A	Discontinued	Discontinued	
12	PIO board/AI	LPA008A	Discontinued	Discontinued	
13	PIO board/AO	LPA120A	Discontinued	Discontinued	
14	PIO board/AO	LPA100A	Available	Available	
15	A-PACK board/OPE.AMP	AOA-01	Discontinued	Discontinued	
16	A-PACK board/OPE.AMP	AOA-03B	Discontinued	Discontinued	
17	A-PACK board/OPE.AMP	AOA090A	Discontinued	Discontinued	
18	A-PACK board/INPECANCE PACK	AIP-02	Discontinued	Discontinued	
19	A-PACK board/INPECANCE PACK	AIP-06	Discontinued	Discontinued	
20	A-PACK board/MULTI-PLTER	ASE091A	Discontinued	Discontinued	
21	A-PACK board/MICRO REED RELAY	MRY-21A	Discontinued	Discontinued	

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER PRODUCTS

B) 04M

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	CPU board/D-BPU-1	LCP100A	Discontinued	Discontinued	
2	CPU board/D-BPU-2	LCP110A	Discontinued	Discontinued	
3	CPU board/P-MEM	LMM100A	Discontinued	Discontinued	
4	CPU board/D-MEM	LMM120A	Discontinued	Discontinued	
5	CPU board/D-PIF	LCP170A	Discontinued	Discontinued	
6	CPU board/PI/O-CE	LCE230A	Discontinued	Discontinued	
7	CPU board/PADT-CE	LIO200A	Discontinued	Discontinued	
8	CPU board/PADT-CE	LIO210A	Discontinued	Discontinued	
9	PIO board/UD	LUD001A	Discontinued	Discontinued	
10	PIO board/AI	LPA008A	Discontinued	Discontinued	
11	PIO board/AO	LPA100A	Available	Available	
12	PIO board/CNT	LPT030A	Discontinued	Discontinued	
13	PIO board/AO	LPA120A	Discontinued	Discontinued	
14	PIO board/RI/OW	LLG020A	Discontinued	Discontinued	
15	PIO board/RIW	LLG040A	Discontinued	Discontinued	
16	PIO board/OPT ROW	LLG100A	Discontinued	Discontinued	
17	PIO board/OPT ROW	LLG110A	Discontinued	Discontinued	
18	PIO board/DI	LPD000A	Discontinued	Discontinued	
19	PIO board/DO	LPD110A	Discontinued	Discontinued	
20	A-PACK board/OPE.AMP	AOA-01	Discontinued	Discontinued	
21	A-PACK board/OPE.AMP	AOA-03B	Discontinued	Discontinued	
22	A-PACK board/OPE.AMP	AOA090A	Discontinued	Discontinued	
23	A-PACK board/IMP PI	AIP-02	Discontinued	Discontinued	
24	A-PACK board/IMP PI	AIP-06	Discontinued	Discontinued	
25	A-PACK board/	ASE091A	Discontinued	Discontinued	

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
26	A-PACK board/	AFA060A	Discontinued	Discontinued	
27	A-PACK board/RV PI	MRY-21A	Discontinued	Discontinued	

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER PRODUCTS

C) R600

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	R600 UNIT	HSC4500	Discontinued	Discontinued	
2	R600 PS	LPE001	Discontinued	Discontinued	
3	R600 CPU	LPU004	Discontinued	Discontinued	
4	R600 HPU	LPU014	Discontinued	Discontinued	
5	R600 NCP	LNC000	Discontinued	Discontinued	
6	R600 DIF	LFI000	Discontinued	Discontinued	
7	R600 RIF-D	LFI140	Discontinued	Discontinued	
8	R600 PIFA	LSU010	Discontinued	Discontinued	
10	R600 PIF-CON	HSC6800	Discontinued	Discontinued	Alternative solution is available
12	PI/O DI	LPD200A	Discontinued	Discontinued	
13	PI/O DO	LPD300A	Discontinued	Discontinued	
14	PI/O AI	LPA008A	Discontinued	Discontinued	
15	PI/O AO	LPA100A	Available	Available	
16	PI/O CNT	HCN000A,B	Discontinued	Discontinued	Alternative solution is available
17	PI/O UD	LUD070A	Discontinued	Discontinued	

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER PRODUCTS

D) R700

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	R700 UNIT	HSC4500	Discontinued	Available until Mar.2027	
2	R700 PS	LPE500	Discontinued	Available until Mar.2027	
3	R700 CPU	LPU508	Discontinued	Available until Mar.2027	
4	R700 HPU	LPU550	Discontinued	Available until Mar.2027	
5	R700 NCP	LNC600	Available	Available	
6	R700 DIF	LFI500	Available	Available	
7	R700 D.NET	LQE570-Z	Available	Available	
8	R600 PIFA	LFI521	Discontinued	Available until Mar.2027	
9	PI/O DI	LYD005A	Discontinued	Available until Mar.2027	
10	PI/O AI	LYA202A	Available	Available	
11	PI/O AO	LPA100A	Available	Available	
12	PI/O CNT	HCN000B	Discontinued	Available until Mar.2027	Alternative solution is available
13	PI/O UD	LUD070A	Available	Available	
14	AVR PS	MPE010A	Available	Available	
15	AVR 5V	MPE111A	Available	Available	
16	AVR 15V	MPE310A	Available	Available	
17	AVR 24-48V	MPE411A	Available	Available	

AFTER-SALES SERVICE INFORMATION OF HYROP (R900 TYPE) CONTROLLER PRODUCTS

E) OTHER

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	AVR	PD502011	Discontinued	Discontinued	
2	P-AMP	MA-501DA	Discontinued	Discontinued	Alternative solution is available
3	P-AMP	MA-600	Discontinued	Discontinued	Alternative solution is available



AFTER-SALES SERVICE INFORMATION OF AFC CONTROLLER

AFTER-SALES SERVICE INFORMATION OF AFC CONTROLLER

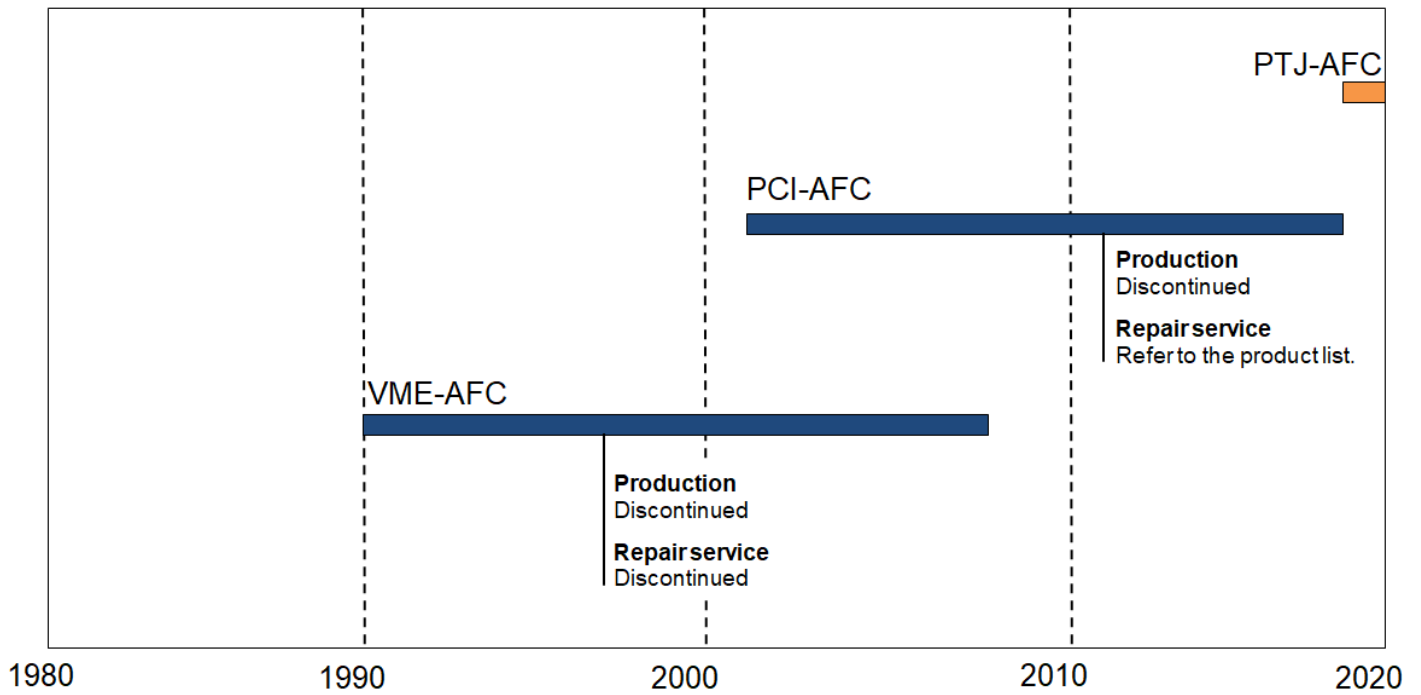


Fig. 5: Lifecycle of AFC controller

AFTER-SALES SERVICE INFORMATION OF AFC CONTROLLER PRODUCTS

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
1	VME bus CPU board	MVME147S-1	Discontinued	Discontinued	
2	VME bus CPU board	PVME301	Discontinued	Discontinued	
3	VME bus CPU board	SVA012-30	Discontinued	Discontinued	
4	VME bus CPU board	SVA012-30	Discontinued	Discontinued	
5	VME bus CPU board	SVA031-30	Discontinued	Discontinued	
6	VME bus CPU board	SVA041-11	Discontinued	Discontinued	
7	VME bus CPU board	XVME674	Discontinued	Discontinued	
8	VME bus CPU board	XVME675	Discontinued	Discontinued	
9	VME bus analog input board	PVME301	Discontinued	Discontinued	
10	VME bus analog input board	PVME323	Discontinued	Discontinued	
11	VME bus analog output board	PVME321	Discontinued	Discontinued	
12	VME bus digital input output board	VME DIO-32	Discontinued	Discontinued	
13	PCI bus CPU board	ROBO-638	Discontinued	Discontinued	
14	PCI bus CPU board	PCPU-ROBO678NJ	Discontinued	Discontinued	
15	PCI bus CPU board	PCPU-ROBO679	Discontinued	Discontinued	
16	PCI bus CPU board	PCPU-ROBO-8712VLA	Discontinued	Discontinued	
17	PCI bus CPU board	ROBO-8110VG2AR-Q67	Discontinued	Discontinued	
18	PCI bus CPU board	ROBO-8913VG2AR-S	Discontinued	Discontinued	
19	PCI bus analog input board	PCI9114DG	Available	Available	
20	PCI bus analog output board	PCI-6308V	Available	Available	
21	PCI bus digital input output board	PCI-7432	Available	Available	
22	PCI bus digital input output board	PCI-7442	Available	Available	
23	Sensor drive unit	ASD900A	Discontinued (Alternative solution)	Discontinued	Alternative unit No.24
24	Sensor drive unit	ASD900B	Available	Available	

NO	TYPE	MODEL	SPARE PARTS	REPAIR SERVICE	REMARKS
25	DC/DC regulator	DC-DC900	Available	Available	
26	Sensor receiver unit	ASU900A	Discontinued	Discontinued	

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