



Tender for the cooling

- Marked survey out by the end of October.
- Call for tender out by February.
- The potential Contractor will have to the detailed design based on PI&D's and general layout drawings delivered from CERN.



Systems included in the MS

YB 0:

- HB-RBX (Decoder boxes)
- HO-RBX (Decoder boxes)
- Yoke and vaccum tank
- Muon Cooling
- Tracker

YB+- 1:

- HO-RBX (Decoder boxes)
- Yoke cooling
- Muon cooling

YB+- 2:

- HO-RBX (Decoder boxes)
- Yoke cooling
- Muon cooling

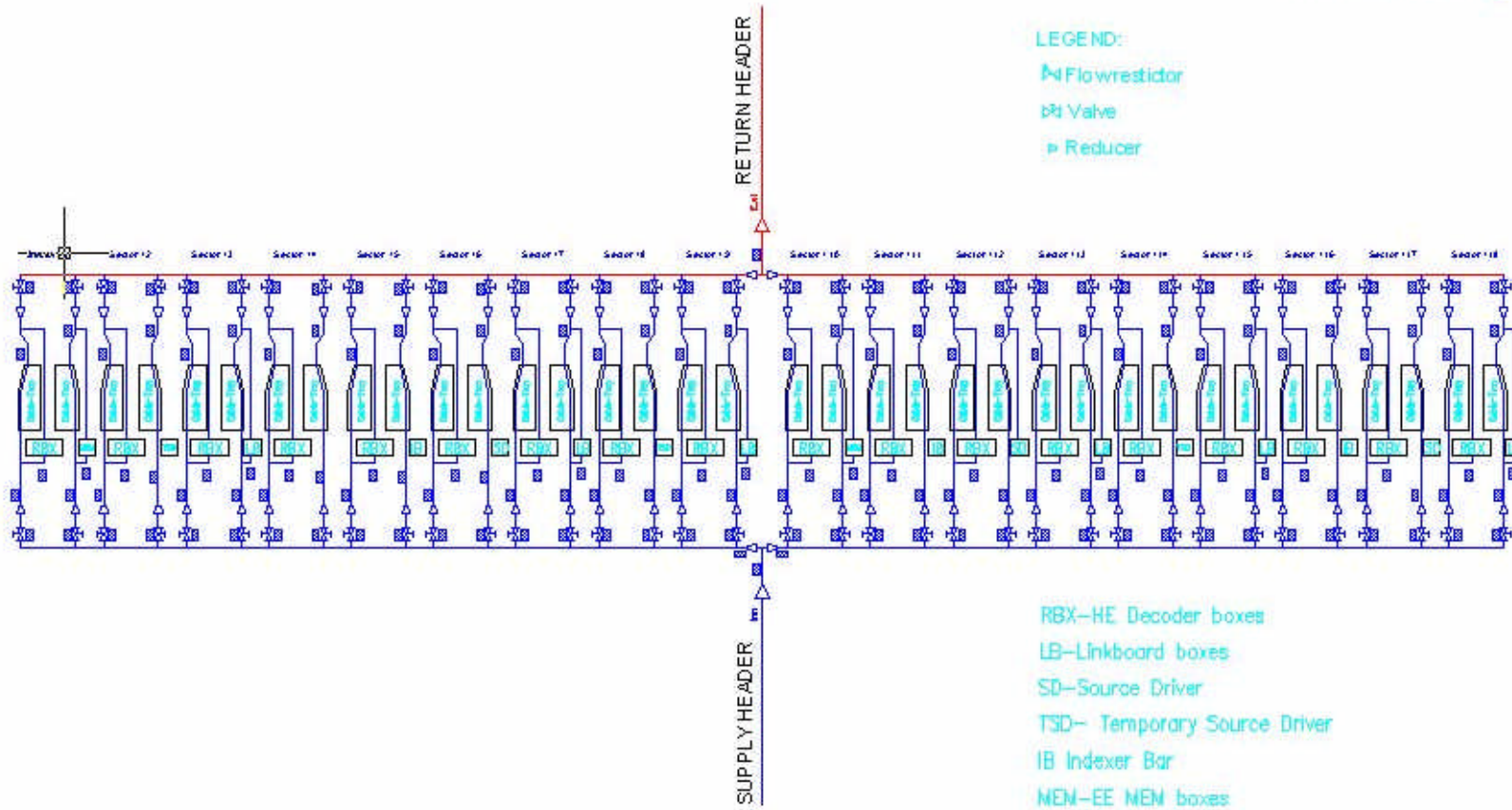
YE+-1:

- HE-RBX (Decoder boxes)
 - SD (source driver)
 - LB (Linkboard boxes)
 - MEM (EE MEM boxes)
 - TSD (Temporary source driver)
 - Cable tray
 - IB (Indexer bar)
- SE



HE cooling system

Provisional only



Cooling circuits for HE(+)

Wednesday, 17 October, 2001

Lasse Isaksen EP-CMI, SPES-Meeting



Cost estimation Muon cooling

- An independent cost estimation for the muon cooling has been done.
- All prices are just material cost collected from the companies: Bachofin, Swagelock and Avintos.

Cost estimation muon cooling

PART:	DIMENSION:	MATERIAL:	NR OF UNITS:	UNIT:	PRICE IN CHF: Pr unit	COMMENT:	TOTAL PRICE PR WHEEL CHF
Internal loop:						From manifold to chambers and back to manifold	
Seamless tube	1/4"	AISI 316L	249.6	Meter	13.8	Fixed piping inside detector from manifold(12x1 mm) pr wh	3444
Seamless tube	3/8"	AISI 316L		Meter	17.1	sst6-s-035-6me	0
Seamless tube	1/2"	AISI 316L		Meter	20		0
Seamless tube	3/4"	AISI 316L		Meter	41.75		0
Seamless tube	1"	AISI 316L		Meter	57.3		0
Parker 39282-4-4C	1/4"	Stainless steel	48	Unit	71.1	For connecting to fixed tubing	3413
Parker 39282-4-4C	1/4"	Stainless steel	48	Unit	71.1	For connecting to RPC	3413
Parker 39182-4-4C	1/4"	Stainless steel	48	Unit	35.5	18 and 19 should fit together	1704
Parker 39282-4-4C	1/4"	Stainless steel	48	Unit	71.1	18 and 19 should fit together	3413
Parker hose 831-4-RL	1/4"	Synthetic rubber	36	Meter	14.3	For connecting to the muon chambers after fixed piping st	515
Manifold:							
Seamless tube	3/4"	AISI 316L		Meter	41.75		0
Seamless tube	1"	AISI 316L		Meter	57.3		0
Seamless tube	44.5 x 2 mm	304L	180	Meter	25.5	acc. to DIN 17458 PK1, tolerance D3/T3	4590
							0
Air vessel	1"	Stainless steel	12	Unit	978	Total for all wheels 2 on central wheel	11736
Distributor valve		Stainless steel	12	Unit	479	Also known as block valve	5748
Ball valve	1/4"	Stainless steel	12	Unit	123.6	ARBOR V&F Typ SS-43s4	1483
Ball valve	3/8"	Stainless steel	8	Unit	128.1	ARBOR V&F Typ SS-43S6	1025
Ball valve	3/4"	Stainless steel	16	Unit	300.35	ARBOR V&F Typ SS-45S12 +2 (for central)	4806
Fine metering valve	3/8"	Stainless steel	4	Unit	167.15	ARBOR V&F Typ SS-6L	669
Differential pressure regulator	DN 15	Stainless steel	12	Unit		Not able to obtain price in time	0
Pressure regulator	1/2"	Stainless steel	4	Unit		Not able to obtain price in time	0
Flange	DN 15	Stainless steel	24	Unit	25	price on DN 25 welding neck flange from cern catalog.	600
							0
							0
						Material cost pr wheel	46558
						Total material cost for all 5 wheels	232789
TOTAL 5 WHEELS PLUS 20% MARGIN							279347

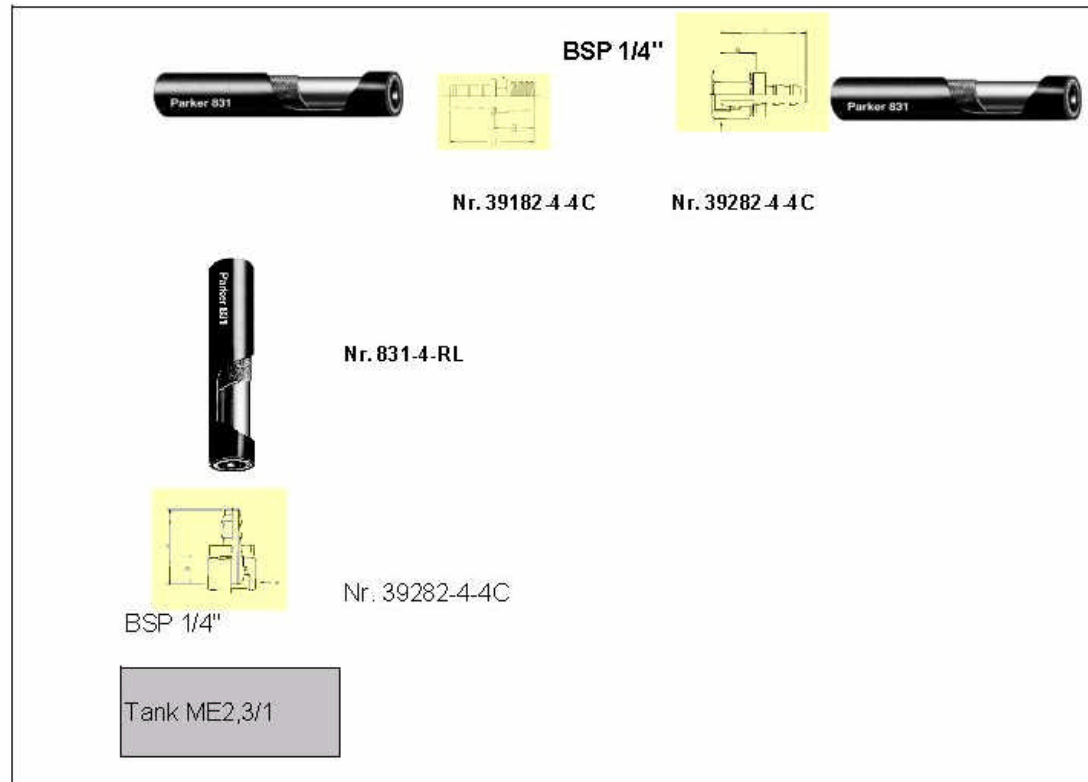
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Parker Hose and fittings

Parker-Push-Lok System





Parker Hose

831 - Heavy Duty



Construction: Synthetic rubber liner, one fibre braid reinforcement, black, green, blue and red synthetic rubber cover.

Applications: Shop air systems and general industrial, maintenance and automotive applications for air, water, lubricating oils and anti-freeze. Recommended for vacuum, but not for thyristor cooling applications.

Temperature range: -40°C/+100°C
 Exceptions: Airmax. +70°C
 Watermax. +85°C

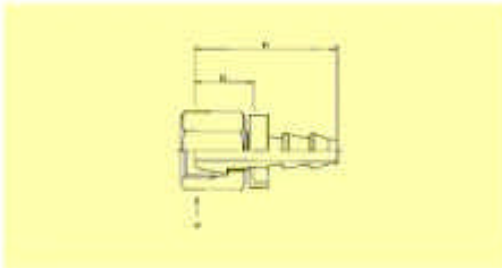
XXXX-XX-XX Part Number	Hose I.D.				Hose O.D.	Pressure rating				Vacuum Kilo Pascal (abs)	Min. bend radius mm	Weight kg/m
	DN	inch	Size	mm	mm	Working pressure max.		Min. burst				
						MPa	psi	MPa	psi			
831-4-RL	6	1/4	-4	6.3	12.7	2.4	350	9.7	1400	6	65	0.13
831-6-RL	10	3/8	-6	9.5	15.9	2.0	300	8.3	1200	6	75	0.16
831-8-RL	12	1/2	-8	12.7	19.8	2.0	300	8.3	1200	6	130	0.27
831-10-RL	16	5/8	-10	15.9	23.0	2.0	300	8.3	1200	50	150	0.28
831-12-RL	20	3/4	-12	19.1	26.2	2.0	300	8.3	1200	50	180	0.36

Note: when ordering, specify Push-Lok® hose part number, followed by size, followed by colour.
 Example: 831-4-RLGRN (green). Colour code: BLK = black; BLU = blue; RED = red; GRN = green; GRA = grey



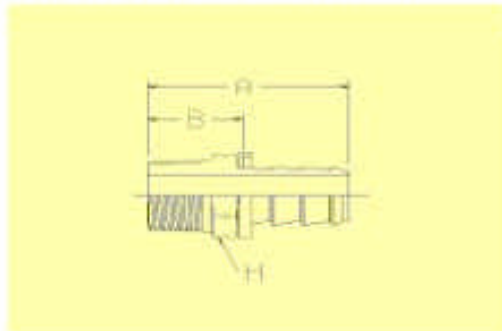
Parker Fittings

92 - BSP swivel female



Hose I.D.				BSP thread	Part number	A mm	B mm	W mm
DN	Inch	Size	mm					
6	1/4	-4	6.4	1/4	39282-4-4	33	14	17
10	3/8	-6	9.5	3/8	39282-6-6	37	14	19
12	1/2	-8	12.7	1/2	39282-8-8	42	15	27
16	5/8	-10	15.9	5/8	39282-10-10	53	16	30
20	3/4	-12	19.0	3/4	39282-12-12	58	21	32

91 - BSP taper Male



Hose I.D.				BSP thread	Part number	A mm	B mm	H mm
DN	Inch	Size	mm					
6	1/4	-4	6.4	1/8	39182-2-4B	37	18	12
6	1/4	-4	6.4	1/4	39182-4-4B	40	21	14
10	3/8	-6	9.5	1/4	39182-4-6B	44	22	14
10	3/8	-6	9.5	3/8	39182-6-6B	45	22	19
12	1/2	-8	12.7	3/8	39182-6-8B	49	22	19
12	1/2	-8	12.7	1/2	39182-8-8B	55	28	22
16	5/8	-10	15.9	1/2	39182-8-10B	65	28	22
16	5/8	-10	15.9	3/4	39182-12-10B	68	31	27
20	3/4	-12	19.1	3/4	39182-12-12B	68	31	27