



**TYPE APPROVAL CERTIFICATE**  
No. MAC581624WS

**This is to certify that the product identified below satisfies the requirements of the standard quoted under "Reference standard"**

<i>Description</i>	<b>Non metallic flexible hoses</b>
<i>Type</i>	<b>Hose Series (BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)</b>
<i>Applicant</i>	<b>Outer Cover Type (DIEHARD™, SLIDER™, Other) Manuli RYCO Hydraulics Sdn Bhd Plot 207, Kuala Ketil Industrial Estate Kuala Ketil, Kedah Darulman, 09300 Malaysia</b>
<i>Manufacturer</i>	<b>Manuli RYCO Hydraulics Sdn Bhd</b>
<i>Place of manufacture</i>	<b>Plot 207, Kuala Ketil Industrial Estate Kuala Ketil, Kedah Darulman, 09300 Malaysia</b>
<i>Reference standards</i>	<b>RINA Rules for the Type Approval of Flexible Hoses and Expansion Joints</b>
<i>Reference documents</i>	<b>RINA TYPE APPROVAL SYSTEM</b>

*Issued in* **Genoa** on **November 5, 2024.** *This Certificate is valid until* **June 18, 2027**

**Qiang Sun**

**RINA Services S.p.A.**

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No. **MAC581624WS**

Enclosure - Page 1 of 1

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™, SLIDER™, Other)

**Reference Documents/Manufacturer's Documents**

- Technical principle drawings have been reviewed with RINA No.:SHMC-11632/21609/21610/21615/21619 on 12/07/2017, 04/07/2022.
- Test reports have been reviewed with RINA No.:SHMC-11633/22055~22073 on 12/07/2017, 26/07/2022.

**Product Description:**

**1. General list**

Hose Series	Outer Cover Type		
	DIEHARD™	SLIDER™	Other
BT1	-	-	-
D2B	-	-	-
T3000	T3000D	T3000S	-
T3600	T3600D	T3600S	-
T4000	T4000D	T4000S	-
T5000	T5000D	T5000S	-
T6000	T6000D	T6000S	-
H3000	H3000D	H3000S	-
H4000	H4000D	H4000S	-
H5000	H5000D	H5000S	H5000C
H6000	H6000D	H6000S	-
T1	T1D	T1S	T1F
SRF/SRX	-	-	-
M2	-	-	-
H12	H12D	H12S	-
H13	H13D	H13S	-
H15	H15D	-	-

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 2 of 38

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™,SLIDER™, Other)

Hose Series	Outer Cover Type		
	DIEHARD™	SLIDER™	Other
T2	T2D/TXA2D	T2S	T2C
DF1	-	-	-
DF2	-	-	-
RQP1	-	-	-
RQP2	-	-	-
RQP5	-	-	-
T5	-	-	-
RTH1	-	-	-
R4SP	R4SPD	-	-
R4SH	R4SHD	-	-
DK1	DK1D	DK1S	DK1E
DK2	DK2D	DK2S	DK2E
TXA2	TXA2D	-	-

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 3 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)****2. Product information**

H3000	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp
H3020	31	1 ¼	-20	215	3100	T7000
H3024	38	1 ½	-24	215	3100	T7000
H3032	51	2	-32	215	3100	T7000
Tube: Black, oil resistant synthetic rubber						
Reinforcement: One or two braids of high tensile steel wire						
Temperature range: -40°C to +121°C						

H4000	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp
H4006	10	3/8	-06	280	4100	T7000
H4008	12	½	-08	280	4100	T7000
H4010	16	5/8	-10	280	4100	T7000
H4012	19	¾	-12	280	4100	T7000
H4016	25	1	-16	280	4100	T7000
H4020	31	1 ¼	-20	280	4100	T7000
H4024	38	1 ½	-24	280	4100	T7000
H4032	51	2	-32	280	4100	T7000
Tube: Black, oil resistant synthetic rubber						
Reinforcement: Multiple alternating layers of spiralled high tensile steel wire						
Temperature range: -40°C to +121°C						

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 4 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2,H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

H5000	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp
H5006	10	3/8	-06	350	5100	T7000
H5008	12	½	-08	350	5100	T7000
H5010	16	5/8	-10	350	5100	T7000
H5012	19	¾	-12	350	5100	T7000
H5016	25	1	-16	350	5100	T7000
H5020	31	1 ¼	-20	350	5100	T7000
H5024	38	1 ½	-24	350	5100	T6000/T7000
H5032	51	2	-32	350	5100	T7000/T9000

Tube: Black, oil resistant synthetic rubber

Reinforcement: Multiple alternating layers of spiralled high tensile steel wire

Temperature range: -40°C to +121°C

H6000	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp	Bitelok skive two-piece crimp
H6006	10	3/8	-06	420	6100	T7000	-
H6008	12	½	-08	420	6100	T7000	-
H6010	16	5/8	-10	420	6100	T7000	-
H6012	19	¾	-12	420	6100	T6000/T7000	-
H6016	25	1	-16	420	6100	T6000/T7000	-
H6020	31	1 ¼	-20	420	6100	T6000/T7000	66000N
H6024	38	1 ½	-24	420	6100	T6000	66000N
H6032	51	2	-32	420	6100	T6000	66000N

Tube: Black, oil resistant synthetic rubber

Reinforcement: Multiple alternating layers of spiralled high tensile steel wire

Temperature range: -40°C to +121°C

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 5 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T3000	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
T3004	6	¼	-04	245	3500	T1000/T2000
T3005	8	5/16	-05	245	3500	T1000/T2000
T3006	10	3/8	-06	215	3100	T1000/T2000
T3008	12	½	-08	215	3100	T1000/T2000
T3010	16	5/8	-10	215	3100	T1000/T2000
T3012	19	¾	-12	215	3100	T1000/T2000
T3016	25	1	-16	215	3100	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One or two braids of high tensile steel wire

Temperature range: -40°C to +100°C

T3600	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
T3604	6	¼	-04	250	3625	T1000/T2000
T3605	8	5/16	-05	250	3625	T1000/T2000
T3606	10	3/8	-06	250	3625	T1000/T2000
T3608	12	½	-08	250	3625	T1000/T2000
T3610	16	5/8	-10	250	3625	T1000/T2000
T3612	19	¾	-12	250	3625	T1000/T2000
T3616	25	1	-16	250	3625	T1000/T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire(Size-04&amp;06 );Two braids of high tensile steel wire(Size-08, 10, 12&amp;16 )

Temperature range: -40°C to +100°C

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 6 of 38

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™,SLIDER™, Other)

T4000	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp
T4004	6	¼	-04	280	4100	T2000
T4005	8	5/16	-05	280	4100	T2000
T4006	10	3/8	-06	280	4100	T2000
T4008	12	½	-08	280	4100	T2000
T4010	16	5/8	-10	280	4100	T2000
T4012	19	¾	-12	280	4100	T2000
T4016	25	1	-16	280	4100	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One or two braids of high tensile steel wire

Temperature range: -40°C to +100°C

T5000	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp
T5004	6	¼	-04	350	5100	T2000
T5005	8	5/16	-05	350	5100	T2000
T5006	10	3/8	-06	350	5100	T2000
T5008	12	½	-08	350	5100	T2000
T5010	16	5/8	-10	350	5100	T2000
T5012	19	¾	-12	350	5100	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: Two braids of high tensile steel wire

Temperature range: -40°C to +100°C

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 7 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2,H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T6000	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp	
T6004	6	¼	-04	420	6100	T2000	
T6005	8	5/16	-05	420	6100	T2000	
T6006	10	3/8	-06	420	6100	T2000	
T6008	12	½	-08	420	6100	T2000	
Tube: Black, oil resistant synthetic rubber							
Reinforcement: Two braids of high tensile steel wire							
Temperature range: -40°C to +100°C							

H12D	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp	Bitelok skive one-piece crimp
H1206D	10	3/8	-06	350	5100	T7000	-
H1208D	12	½	-08	350	5100	T7000	-
H1210D	16	5/8	-10	350	5100	T7000	-
H1212D	19	¾	-12	350	5100	T7000	-
H1216D	25	1	-16	350	5100	T7000	-
H1220D	31	1 ¼	-20	275	4000	T7000	-
H1224D	38	1 ½	-24	255	3700	T7000	-
H1232D	51	2	-32	210	3050	T7000	-
Tube: Black, oil resistant synthetic rubber							
Reinforcement: Four alternating layers of spiralled high tensile steel wire							
Temperature range: -40°C to +121°C							



**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 8 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2,H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

H12S	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp	Bitelok skive one-piece crimp
H1206S	10	3/8	-06	350	5100	T7000	-
H1208S	12	1/2	-08	350	5100	T7000	-
H1210S	16	5/8	-10	350	5100	T7000	-
H1212S	19	3/4	-12	350	5100	T7000	-
H1216S	25	1	-16	350	5100	T7000	-
H1220S	31	1 1/4	-20	275	4000	T7000	-
H1224S	38	1 1/2	-24	255	3700	T7000	-
H1232S	51	2	-32	210	3050	T7000	-
Tube: Black, oil resistant synthetic rubber							
Reinforcement: Four alternating layers of spiralled high tensile steel wire							
Temperature range: -40°C to +121°C							

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 9 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

R4SHD	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp	
R4SH12 D	19	¾	-12	420	6100	-	T9000
R4SH16 D	25	1	-16	380	5500	-	T9000
R4SH20 D	31	1 ¼	-20	350	5100	T7000	-
R4SH24 D	38	1 ½	-24	300	4350	T7000	-
R4SH32 D	51	2	-32	250	3625	T7000	-

Tube: Black, oil resistant synthetic rubber

Reinforcement: Four alternating layers of spiralled high tensile steel wire

Temperature range: -40°C to +100°C

R4SPD	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Bitelok skive one-piece crimp	
R4SP06D	10	3/8	-06	445	6450	T7000	
R4SP08D	12	½	-08	420	6100	T7000	
R4SP10D	16	5/8	-10	380	5500	T7000	
R4SP12D	19	3/4	-12	380	5500	T7000	
R4SP16D	25	1	-16	350	5100	T7000	

Tube: Black, oil resistant synthetic rubber

Reinforcement: Four alternating layers of spiralled high tensile steel wire

Temperature range: -40°C to +100°C

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 10 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

RQP1	Hose size			Max.working pressure		Coupling		
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive K series		Bitelok non-skive one-piece crimp
						Insert	Ferrule	
RQP14	6	¼	-04	225	3250	6000 series	K000-04	T2000
RQP15	8	5/16	-05	215	3210	-	-	T2000
RQP16	10	3/8	-06	180	2600	6000 series	K000-06	T2000/T7000
RQP18	12	½	-08	160	2300	6000 series	K000-08	T2000/T7000
RQP110	16	5/8	-10	130	1900	6000 series	K000-10	T2000/T7000
RQP112	19	3/4	-12	120	1740	6000 series	K000-12	T2000/T7000
RQP116	25	1	-16	90	1300	6000 series	K000-16	T2000/T7000
Tube: Black, synthetic rubber, specifically compounded for temperature resistance and multi fluid resistance								
Reinforcement: One braid of high tensile steel wire								
Temperature range: -40°C to +150°C								
Note: Field attachable couplings should not be used on RQP1 hose at Max. working pressure when temperature exceeds 121°C. Field attachable couplings may be used on RQP1 hose at over 121°C but at reduced working pressure.								

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 11 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

RQP2	Hose size			Max.working pressure		Coupling		
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive/skive L/B series		Bitelok non-skive one-piece crimp
						Insert	Ferrule	
RQP24	6	¼	-04	400	5800	6000 series	L000-04	T2000
RQP25	8	5/16	-05	350	5100	-	-	T2000
RQP26	10	3/8	-06	350	5100	6000 series	L000-06	T2000/T7000
RQP28	12	½	-08	300	4350	6000 series	L000-08	T2000/T7000
RQP210	16	5/8	-10	250	3600	6000 series	L000-10	T2000/T7000
RQP212	19	3/4	-12	215	3100	6000 series	L000-12	T2000/T7000
RQP216	25	1	-16	167	2400	6000 series	L000-16	T2000/T7000
RQP220	31	1 ¼	-20	150	2175	6000 series	L000-20	T2000/T7000
RQP224	38	1 ½	-24	100	1450	6000 series	B000-24	T2000/T7000
RQP232	51	2	-32	90	1300	6000 series	B000-32	T2000/T7000
Tube: Black, synthetic rubber, specifically compounded for temperature resistance and multi fluid resistance								
Reinforcement: Two braids of high tensile steel wire								
Temperature range: -40°C to +150°C								
Note: Field attachable couplings should not be used on RQP2 hose at Max. working pressure when temperature exceeds 121°C. Field attachable couplings may be used on RQP2 hose at over 121°C but at reduced working pressure. When using B series field attachable couplings on RQP2 series hose, cover of hose must be skived at ends.								

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 12 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

RQP5	Hose size			Max.working pressure		Coupling			
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive V series			Bitelok non-skive one-piece crimp
						Insert	Ferrule	Coupling	
RQP54	5	3/16	-04	210	3050	6xx-03	V000-04	Vxx-03	T400-3
RQP55	6	¼	-05	210	3050	6xx-04	V000-05	Vxx-04	T400-4
RQP56	8	5/16	-06	155	2250	6xx-05	V000-06	Vxx-05	T400-5
RQP58	10	13/32	-08	138	2000	6xx-06	V000-08	Vxx-06	T400-6
RQP51 0	12	½	-10	121	1750	6xx-08	V000-10	Vxx-08	T400-8
RQP51 2	16	5/8	-12	103	1500	6xx-10	V000-12	Vxx-10	T400-10
RQP51 6	22	7/8	-16	55	800	6xx-14	V000-16	Vxx-14	T400-14
RQP52 0	28	1 1/8	-20	43	625	6xx-18	V000-20	Vxx-18	T400-18
RQP52 4	35	1 3/8	-24	35	500	6xx-22	V000-24	Vxx-22	T400-24
RQP53 2	46	1 13/16	-32	24	350	6xx-29	V000-32	Vxx-29	T400-29
Tube: Black, synthetic rubber, specifically compounded for temperature resistance and multi fluid resistance									
Reinforcement: Polyester inner braid covered with one braid of high tensile steel wire									
Temperature range: -40°C to +150°C									

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 13 of 38

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™,SLIDER™, Other)

DF2D	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	Bitelok non-skive one-piece crimp
DF24D	6	¼	-04	420	6000	T2000
DF26D	10	3/8	-06	350	5100	T2000/T7000
DF28D	12	½	-08	295	4250	T2000
DF210D	16	5/8	-10	250	3600	T2000
DF212D	19	¾	-12	215	3100	T2000/T7000
DF216D	25	1	-16	167	2400	T2000
Tube: Black, oil resistant synthetic rubber(Nitrile)						
Reinforcement: Two braids of high tensile steel wire						
Temperature range: -40°C to +100°C						

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 14 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T1D	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive	Bitelok non-skive one-piece crimp
T13D	5	3/16	-03	250	3600	6000(K000)	T2000
T14D	6	¼	-04	225	3250	6000(K000)	T2000
T15D	8	5/16	-05	215	3100	6000(K000)	T2000
T16D	10	3/8	-06	180	2600	6000(K000)	T2000/T7000
T18D	12	½	-08	160	2300	6000(K000)	T2000/T7000
T110D	16	5/8	-10	130	1900	6000(K000)	T2000/T7000
T112D	19	¾	-12	105	1500	6000(K000)	T2000/T7000
T116D	25	1	-16	90	1300	6000(K000)	T2000/T7000
T120D	31	1 ¼	-20	65	945	-	T2000/T7000
T124D	38	1 ½	-24	50	725	-	T2000/T7000
T132D	51	2	-32	40	580	-	T2000/T7000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire

Temperature range: -40°C to +100°C

Note: When using A000 series field attachable couplings on T1D series hose, cover of hose must be skived at ends.

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 15 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

TIS	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
T13S	5	3/16	-03	250	3600	T2000
T14S	6	¼	-04	225	3250	T2000
T15S	8	5/16	-05	215	3100	T2000
T16S	10	3/8	-06	180	2600	T2000/T7000
T18S	12	½	-08	160	2300	T2000/T7000
T110S	16	5/8	-10	130	1900	T2000/T7000
T112S	19	¾	-12	105	1500	T2000/T7000
T116S	25	1	-16	90	1300	T2000/T7000
T120S	31	1 ¼	-20	65	945	T2000/T7000
T124S	38	1 ½	-24	50	725	T2000/T7000
T132S	51	2	-32	40	580	T2000/T7000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire

Temperature range: -40°C to +100°C



**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 16 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T1F	Hose size			Max.working pressure		Coupling		
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive K series		Bitelok non-skive one-piece crimp
						Insert	Ferrule	
T13F	5	3/16	-03	250	3600	-	-	T2000
T14F	6	¼	-04	225	3250	6000 series	K000-04	T2000
T16F	10	3/8	-06	180	2600	6000 series	K000-06	T2000/T7000
T18F	12	½	-08	160	2300	6000 series	K000-08	T2000/T7000
T112F	19	¾	-12	105	1500	6000 series	K000-12	T2000/T7000
Tube: Black, synthetic rubber(Nitrile). Resistant to aqueous film forming foam, dry chemical powder, carbon dioxide and water based fire extinguishing agents.								
Reinforcement: One braid of high tensile steel wire								
Temperature range: -40°C to +100°C								

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 17 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T2D	Hose size			Max.working pressure		Coupling		
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive/skive L/B series		Bitelok non-skive one-piece crimp
						Insert	Ferrule	
T24D	6	¼	-04	420	6000	6000 series	L00-04	T2000
T25D	8	5/16	-05	350	5100	-	-	T2000
T26D	10	3/8	-06	350	5100	6000 series	L000-06	T2000/T7000
T28D	12	½	-08	350	5100	6000 series	L000-08	T2000/T7000
T210D	16	5/8	-10	250	3600	6000 series	L000-10	T2000/T7000
T212D	19	¾	-12	215	3100	6000 series	L000-12	T2000/T7000
T216D	25	1	-16	175	2500	6000 series	L000-16	T2000/T7000
T220D	31	1 ¼	-20	140	2000	6000 series	L000-20	T2000/T7000
T224D	38	1 ½	-24	100	1450	6000 series	B000-24	T2000/T7000
T232D	51	2	-32	90	1305	6000 series	B000-32	T2000/T7000
T240D	63	2 ½	-40	70	1000	-	-	12000-40

Tube: Black, oil resistant synthetic rubber(Nitrile)

Reinforcement: Two braids of high tensile steel wire

Temperature range: -40°C to +100°C

Note: When using B series field attachable couplings on T2D series hose, cover of hose must be skived at ends.

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 18 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T2S	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
T24S	6	¼	-04	420	6000	T2000
T26S	10	3/8	-06	350	5100	T2000/T7000
T28S	12	½	-08	350	5100	T2000/T7000
T210S	16	5/8	-10	250	3600	T2000/T7000
T212S	19	¾	-12	215	3100	T2000/T7000
T216S	25	1	-16	175	2500	T2000/T7000
T220S	31	1 ¼	-20	140	2000	T2000/T7000
T224S	38	1 ½	-24	100	1450	T2000/T7000
T232S	51	2	-32	90	1300	T2000/T7000
Tube: Black, oil resistant synthetic rubber(Nitrile)						
Reinforcement: Two braids of high tensile steel wire						
Temperature range: -40°C to +100°C						

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 19 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T2C	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
T24C	6	¼	-04	420	6000	T2000
T25C	8	5/16	-05	350	5100	T2000
T26C	10	3/8	-06	350	5100	T2000/T7000
T28C	12	½	-08	350	5100	T2000/T7000
T210C	16	5/8	-10	250	3600	T2000/T7000
T212C	19	¾	-12	215	3100	T2000/T7000
T216C	25	1	-16	175	2500	T2000/T7000
T220C	31	1 ¼	-20	140	2000	T2000/T7000
T224C	38	1 ½	-24	100	1450	T2000/T7000
T232C	51	2	-32	90	1300	T2000/T7000

Tube: Black, specially formulated oil resistant synthetic rubber

Reinforcement: Two braids of high tensile steel wire

Temperature range: -50°C to +100°C

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 20 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

T5	Hose size			Max.working pressure		Coupling			
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive V series			Bitelok non-skive one-piece crimp
						Insert	Ferrule	Coupling	
T54	5	3/16	-04	210	3050	6xx-03	V000-04	Vxx-03	T4000-3
T55	6	¼	-05	210	3050	6xx-04	V000-05	Vxx-04	T4000-4
T56	8	5/16	-06	155	2250	6xx-05	V000-06	Vxx-05	T4000-5
T58	10	13/32	-08	138	2000	6xx-06	V000-08	Vxx-06	T4000-6
T510	12	½	-10	121	1750	6xx-08	V000-10	Vxx-08	T4000-8
T512	16	5/8	-12	103	1500	6xx-10	V000-12	Vxx-10	T4000-10
T516	22	7/8	-16	55	800	6xx-14	V000-16	Vxx-14	T4000-14
T520	28	1 1/8	-20	43	625	6xx-18	V000-20	Vxx-18	T4000-18
T524	35	1 3/8	-24	35	500	6xx-22	V000-24	Vxx-22	T4000-22
T532	46	1 13/16	-32	24	350	6xx-29	V000-32	Vxx-29	T4000-29
Tube: Black, oil resistant synthetic rubber(Nitrile)									
Reinforcement: Polyester inner braid covered with one braid of high tensile steel wire									
Temperature range: -40°C to +100°C									

D2B	Hose size			Max.working pressure		Coupling
	DN	INCH	DASH	BAR	PSI	
D224B	38	1 ½	-24	100	1450	T2000/T7000
D232B	51	2	-32	90	1300	T2000/T7000
Tube: Black, oil resistant synthetic rubber						
Reinforcement: Two braids of high tensile steel wire						
Temperature range: -40°C to +121°C(for Air) -40°C to +135°C(for Oil)						

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 21 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

BT1	Hose size			Max.working pressure		Coupling		
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive K series		Bitelok non-skive one-piece crimp
						Insert	Ferrule	
BT14	6	¼	-04	50	725	6000	K000	T2000
BT15	8	5/16	-05	50	725	6000	K000	T2000
BT16	10	3/8	-06	50	725	6000	K000	T2000
BT18	12	½	-08	50	725	6000	K000	T2000
BT110	16	5/8	-10	50	725	6000	K000	T2000
BT112	20	¾	-12	50	725	6000	K000	T2000
BT116	25	1	-16	50	725	6000	K000	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire

Temperature range: -40°C to +100°C(for Ethanol blends, Biodiesel, Diesel fuel)  
 -40°C to +80°C(for Water, Water Emulsions)  
 -40°C to +135°C(for Petroleum base hydraulic fluids, Lubricating oils)  
 -40°C to +120°C(for Engine oils)  
 -20°C to +100°C(for Unleaded petrol/Gasoline, Jet fuel JP8, Kerosene)  
 -40°C to +121°C(for Air)

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 22 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

M2	Hose size			Max.working pressure		Coupling		
	DN	INCH	DASH	BAR	PSI	Field attachable non-skive K series		Bitelok non-skive one-piece crimp
						Insert	Ferrule	
M24	6	¼	-04	88	1250	6000 series	M000-04	T4000
M26	10	3/8	-06	79	1125	6000 series	M000-06	T4000
M28	12	½	-08	70	1000	6000 series	M000-08	T4000
M212	19	¾	-12	52	750	6000 series	M000-12	T4000
Tube: Black, oil resistant synthetic rubber(Nitrile)								
Reinforcement: Two textile braids								
Temperature range: -40°C to +100°C								

RTH1	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	one-piece crimp	Bitelok two-piece crimp
RTH14	6	¼	-04	170	2450	TT000	1100 series
RTH16	10	3/8	-06	165	2375	TT000	1100 series
RTH18	12	½	-08	120	1750	TT000	1100 series
RTH110	16	5/8	-10	105	1500	TT000	1100 series
RTH112	19	¾	-12	85	1250	TT000	1100 series
RTH116	25	1	-16	55	800	TT000	1100 series
Tube: TEFLON(PTFE)							
Reinforcement: One braid of high tensile 304 stainless steel wire							
Temperature range: -60°C to +260°C							

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 23 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

SRF	Hose size			Max.working pressure	
	DN	INCH	DASH	BAR	PSI
SRF12	19	¾	-12	21	300
SRF16	25	1	-16	17	250
SRF20	31	1 ¼	-20	14	200
SRF24	38	1 ½	-24	10	150
SRF32	51	2	-32	7	100

Tube: Black, oil resistant synthetic rubber(Nitrile)

Reinforcement: Textile reinforcement with spiral wire to prevent collapsing

Temperature range: -40°C to +100°C



**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 24 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

DK1D	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
DK14D	6	¼	-04	295	4280	T2000
DK15D	8	5/16	-05	250	3625	T2000
DK16D	10	3/8	-06	230	3340	T2000
DK18D	12	½	-08	200	2900	T2000
DK110D	16	5/8	-10	150	2175	T2000
DK112D	19	¾	-12	125	1815	T2000
DK116D	25	1	-16	110	1600	T2000
DK120D	31	1.¼	-20	100	1450	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire

Temperature range: -40°C to +100°C

DK1E	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
DK14E	6	¼	-04	295	4280	T2000
DK15E	8	5/16	-05	250	3625	T2000
DK16E	10	3/8	-06	230	3340	T2000
DK18E	12	½	-08	200	2900	T2000
DK110E	16	5/8	-10	150	2175	T2000
DK112E	19	¾	-12	125	1815	T2000
DK116E	25	1	-16	110	1600	T2000
DK120E	31	1.¼	-20	100	1450	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire

Temperature range: -40°C to +100°C

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 25 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

DK1S	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
DK14S	6	¼	-04	295	4280	T2000
DK15S	8	5/16	-05	250	3625	T2000
DK16S	10	3/8	-06	230	3340	T2000
DK18S	12	½	-08	200	2900	T2000
DK110S	16	5/8	-10	150	2175	T2000
DK112S	19	¾	-12	125	1815	T2000
DK116S	25	1	-16	110	1600	T2000
DK120S	31	1¼	-20	100	1450	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: One braid of high tensile steel wire

Temperature range: -40°C to +100°C

DK2D	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
DK24D	6	¼	-04	450	6525	T2000
DK25D	8	5/16	-05	420	6100	T2000
DK26D	10	3/8	-06	385	5590	T2000
DK28D	12	½	-08	345	5000	T2000
DK210D	16	5/8	-10	290	4210	T2000
DK212D	19	¾	-12	280	4100	T2000
DK216D	25	1	-16	200	2900	T2000
DK220D	31	1¼	-20	175	2540	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: Two braids of high tensile steel wire

Temperature range: -40°C to +100°C

**TYPE APPROVAL CERTIFICATE**No. **MAC581624WS**

Enclosure - Page 26 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

DK2E	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
DK24E	6	¼	-04	450	6525	T2000
DK25E	8	5/16	-05	420	6100	T2000
DK26E	10	3/8	-06	385	5590	T2000
DK28E	12	½	-08	345	5000	T2000
DK210E	16	5/8	-10	290	4210	T2000
DK212E	19	¾	-12	280	4100	T2000
DK216E	25	1	-16	200	2900	T2000
DK220E	31	1¼	-20	175	2540	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: Two braids of high tensile steel wire

Temperature range: -40°C to +100°C

DK2S	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
DK24S	6	¼	-04	450	6525	T2000
DK25S	8	5/16	-05	420	6100	T2000
DK26S	10	3/8	-06	385	5590	T2000
DK28S	12	½	-08	345	5000	T2000
DK210S	16	5/8	-10	290	4210	T2000
DK212S	19	¾	-12	280	4100	T2000
DK216S	25	1	-16	200	2900	T2000
DK220S	31	1¼	-20	175	2540	T2000

Tube: Black, oil resistant synthetic rubber

Reinforcement: Two braids of high tensile steel wire

Temperature range: -40°C to +100°C

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 27 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

SRX	Hose size			Max.working pressure		Coupling Bitelok non-skive one-piece crimp
	DN	INCH	DASH	BAR	PSI	
SRX12	19	¾	-12	21	305	T4000
SRX16	25	1	-16	17	247	T4000
SRX20	31	1.¼	-20	14	203	T4000
SRX24	38	1.½	-24	11	145	T4000
SRX32	51	2	-32	7	102	T4000
SRX40	63	2.½	-40	4	58	T4000
SRX48	76	3	-48	4	58	T4000

Tube: Black, oil resistant synthetic rubber

Reinforcement: Textile reinforcement with spiral wire to prevent collapsing

Temperature range: -20°C to +82°C

TXA2D	Hose size			Max.working pressure		Coupling	
	DN	INCH	DASH	BAR	PSI	Non-skive one-piece crimp	Field attachable non-skive
TXA28D	12	½	-8	375	5440	T2000/T7000	6000(L000)
TXA210 D	16	5/8	-10	350	5100	T2000/T7000	6000(L000)
TXA212 D	19	¾	-12	313	4530	T2000/T7000	6000(L000)
TXA216 D	25	1	-16	225	3250	T2000/T7000	6000(L000)

Tube: Black, oil resistant synthetic rubber

Reinforcement: Two braids of high tensile steel wire

Temperature range: -40°C to +100°C

**3. Coupling material**

- Carbon steel AISI/SAE 12L14, 1010, 1020, 1040, 1045(Standard)
- Electroplated Fe/Zn12c acc. to AS1789
- Stainless Steel 316 ASTM A276 or equivalent(Option)

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 28 of 38

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™,SLIDER™, Other)

**Test Reports:**

**1.General**

- Test carried out: fire resistance, dimensional control and physical, impulse, burst tests and low temperature flexibility, vacuum resistance, fluid resistance and ozone resistance tests.

**2.Reports in details**

- Fire resistance test:

Test Specimen	Test Certificate No.	Date
SLIDER H12S	RH-FT-33	29/11/2005
DIEHARD H12D	RH-FT-11	21/07/2005
SURVIVOR RQP1	RH-FT-22	17/11/2005
	RH-FT-23	16/11/2005
	RH-FT-24	16/11/2005
SURVIVOR RQP2	RH-FT-35	29/11/2005
	RH-FT-25	16/11/2005
	RH-FT-40	30/11/2005
SURVIVOR RQP5	RH-FT-47	09/02/2006
	RH-FT-21	15/11/2005
	RH-FT-20	16/11/2005
TEFLON RTH14	RH-FT-18	16/11/2005
TEFLON RTH18	RH-FT-17	15/11/2005
TEFLON RTH16	RH-FT-19	15/11/2005
FIRE SUPPRESSION T1F	RH-FT-29	17/11/2005
	RH-FT-31	29/11/2005
	RH-FT-32	29/11/2005

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 29 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

Test Specimen	Test Certificate No.	Date
SLIDER T2S	RH-FT-43	09/02/2006
	RH-FT-42	09/02/2006
	RH-FT-44	09/02/2006
TEFLON RTH18	RH-FT-17	15/11/2005
TEFLON RTH14	RH-FT-18	16/11/2005
TEFLON RTH16	RH-FT-19	16/11/2005
M2	RH-FT-27	16/11/2005
	RH-FT-27	16/11/2005
D224B	IRH-FT-003/13	17/03/13

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 30 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

- Dimensional control and physical test:

Test Specimen	Test Certificate No.	Date
SRF20	-	08/10/2012
SRF24	-	08/10/2012
SRF32	-	08/10/2012

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 31 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

Test Specimen	Test Certificate No.	Date
DIEHARD H3024D	-	27/08/2012
SLIDER H3024S	-	27/08/2012
DIEHARD H4010D	-	27/08/2012
SLIDER H4010S	-	27/08/2012
DIEHARD H4012D	-	27/08/2012
SLIDER H4012S	-	27/08/2012
DIEHARD H4016D	-	27/08/2012
SLIDER H4016S	-	27/08/2012
DIEHARD H5012D	-	27/08/2012
SLIDER H5012S	-	27/08/2012
DIEHARD H5020D	-	27/08/2012
SLIDER H5020S	-	27/08/2012
DIEHARD H6012D	-	27/08/2012
SLIDER H6012S	-	27/08/2012
DIEHARD H6032D	-	27/08/2012
SLIDER H6032S	-	27/08/2012



**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 32 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

Test Specimen	Test Certificate No.	Date
DRILLER D224B	-	31/08/2012
BIOTRANS BT14	-	30/08/2012
BIOTRANS BT16	-	30/08/2012
BIOTRANS BT18	-	30/08/2012
BIOTRANS BT112	-	30/08/2012
DIEHARD T3004D	-	27/08/2012
SLIDER T3004S	-	27/08/2012
DIEHARD T3005D	-	27/08/2012
SLIDER T3005S	-	27/08/2012
DIEHARD T3010D	-	27/08/2012
SLIDER T3010S	-	27/08/2012
DIEHARD T3012D	-	27/08/2012
SLIDER T3012S	-	27/08/2012
DIEHARD T4004D	-	27/08/2012
SLIDER T4004S	-	27/08/2012
DIEHARD T4006D	-	27/08/2012
SLIDER T4006S	-	27/08/2012
DIEHARD T4012D	-	27/08/2012
SLIDER T4012S	-	27/08/2012
DIEHARD T5006D	-	27/08/2012
SLIDER T5006S	-	27/08/2012
DIEHARD T6006D	-	27/08/2012
SLIDER T6006S	-	27/08/2012
T14F	-	30/03/2012
T18F	-	06/09/2012
T116F	-	06/09/2012
T24S	-	30/12/2011
T28S	-	23/06/2012

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 33 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

- Impulse test:

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 34 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2,H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

Test Specimen	Test Certificate No.	Date
DIEHARD H1 206D	MP3-0410	30/08/2012
H1212D	KP 047/12	12/08/2012
DIEHARD H1 324D	MP1-1269	06/03/2012
DIEHARD H1 520D	MP3-0393	04/07/2012
RQP112	2671i	22/03/2007
SURVIVOR RQP14	MP4-0020A	06/07/2012
SURVIVOR RQP18	MP4-0023	13/07/2012
RQP24	2775i	17/09/2007
RQP220	2646j	18/03/2007
SURVIVOR RQP216	MP3-397	27/07/2012
SURVIVOR RQP28	MP4-0026A	02/08/2012
TRUCKER T54	MP4-0045A	03/10/2012
SURVIVOR RQP55	MP3-0401	06/08/2012
TRUCKER T58	MP2-1108A	04/10/2012
SURVIVOR RQP510	MP3-0402	09/08/2012
RTH14	MP4-0096A	22/05/2013
RTH18	MP4-0098	22/05/2013
RTH112	MP4-0099	22/05/2013
M24	MP4-0102	03/06/2013
M28	MP4-0103	03/06/2013

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 35 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2,H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

- Burst test:

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 36 of 38

Hose Series

**(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)**

Outer Cover Type

**(DIEHARD™,SLIDER™, Other)**

Test Specimen	Test Certificate No.	Date
T216D	EB001/KK	23/09/2010
TXA220D	EB001/KK	23/09/2010
TXA210D	EB001/KK	23/09/2010
RQP516, T524, M24, H6032D, RQP65, RQP610, BT14, PL15, PL110, TJ24D, H4024D, T4012D,	5378	20/02/2013
T3006D, T3012D, T4004D, T5004S, T5006D, T6006D, H3020D, H4016D, H5008D, H6016D, BT16, BT112, DB224, T14D, T112D, T24S, T212D, RQP14, RQP18, RQP24, RQP28, EC8, T58, T18F, T14F, RQP112, T55, T24S, EC6, RQP55, E26, E212, H1212S, H1312D, H1232D, RQP216, RTH16, RTH112, T510, M28, M212, RQP512, H1206D, H1512D, H1520D, SRF16, SRF24, RQP510,	5158	15/12/2012

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 37 of 38

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12,  
T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™,SLIDER™, Other)

***Application/Limitation:***

- May be used for the following services on board: fuel oil, lubricating oil, hydraulic oil, compressed air, fresh water, sea water and sanitary.
- Ending fittings as per Manufacturer's catalogue. The hoses are to be entirely assembled in the Manufacturer's work shop.
- The installation of hoses assemblies is to be in accordance with the Manufacturer's instructions to take into consideration forces due to vibration. The hoses are not to be used on services when vibration test is required in the RINA Rules.
- The hoses are to be installed in clearly visible and readily accessible locations at all times.
- Taper threaded end connections are not to be used for oil circuits in engine room nor any place containing an ignition source unless to the satisfaction of the RINA Surveyor.

***Remarks:***

- The flexible hoses are to be permanently marked by the Manufacturer with the following details:

1. hose Manufacturer's name or trademark
2. date of manufacture(month/year)
3. designation type reference
4. nominal diameter
5. maximum design pressure
6. maximum and minimum design temperatures

Where a flexible hose assembly is made up of items from different Manufacturers, the components are to be clearly identified and traceable to evidence of prototype testing.

- Verification of marking for identification and proper installation on board are to the satisfaction of the RINA Surveyor.

**TYPE APPROVAL CERTIFICATE**

No. **MAC581624WS**

Enclosure - Page 38 of 38

Hose Series

(BT1,D2B,T3000/3600/4000/5000/6000,H3000/4000/5000/6000, R4SP/R4SH,T1, SRF, M2, H12, T2, DF1/2, RQP1/2/5, T5, RTH1, DK1, DK2, SRX and TXA2D)

Outer Cover Type

(DIEHARD™,SLIDER™, Other)

**Place Of Production:**

Production Site	Location	Hose	Hose Couplings	Hose Assemblies	Adaptors
Fluiconnecto Ryco Australia Pty. Ltd.	99 Calarco Drive Derrimut Victoria 3026 Australia		√	√	√
Manuli Ryco Hydraulics (Dalian) Co., Ltd.	38 Ying Ri Road Ying Cheng Zi Industrial Zone Gan Jing Zi District DALIAN 116036 CHINA		√	√	√
Manuli Ryco Hydraulics Sdn. Bhd.	Plot 207 Kuala Ketil Industrial Estate 09300 Kuala Ketil Kedah Darulaman MALAYSIA	√		√	
Fluiconnecto USA LLC	1207 Rankin Rd, Houston, Texas, 77073. United States			√	
Manuli Hydraulics (Suzhou) Co., Ltd.	No. 85, Xinglin Street, Industrial Park, Suzhou, Jiangsu Province, China	√		√	

**Notes**

- Renewal of Previous Type Approval Certificate No.: MAC160222WS. As declared, the initial conditions at the time of the approval are maintained.
- Add new production site for hose and hose assemblies.

Genoa November 5, 2024