

# Hyperline FX

Hyperline FX hose consists of a smooth internal bore to eliminate turbulent flow and external convolutions to provide excellent flexibility.

- Excellent flow rates
- Non-stick internal surface
- Resistant to temperatures from -150 °C to 260 °C
- Usable at vacuum up to -0.9bar
- Thermally formed liner reduces diffusion rates



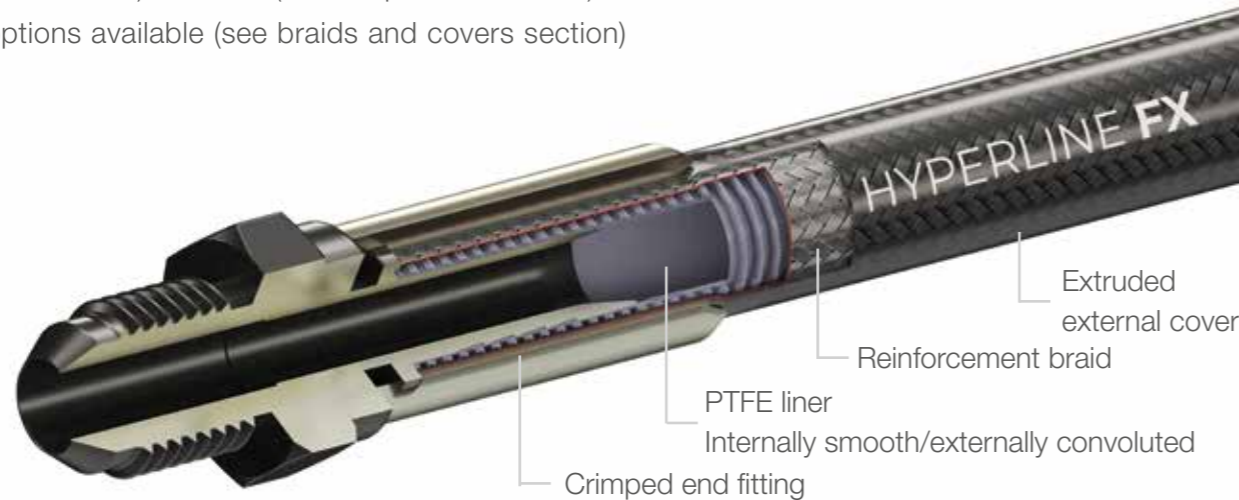
## Hyperline FX construction

### Design variations

Liner: AS or natural (ASTM D4895)

Braids: SS (304 or 316) / aramid (tracer options available) / PPS

Covers: All options available (see braids and covers section)



## The Hyperline range - PTFE lined hose engineered for efficiency

### Smooth bore for fluid system efficiency

All liners within the Hyperline range have a smooth internal bore. PTFE possesses low friction properties and creates the perfect conditions to maximise media flow rates and efficiency within a variety of systems.

### Unique liner design to maximise routing efficiency

With increased flexibility, much tighter minimum bend radius (MBR) and kink resistance, Hyperline KR and FX have allowed automotive design engineers to reduce their application footprint by routing pipework through the most efficient path without compromising on performance.

The length of flexible section (live length) can be shortened to achieve the same degree of flexibility, further reducing the overall cost of the assembly.



# Hyperline FX

Hose bore size	dash size	Actual bore size		**Hose construction	Outside diameter of tube or braid		Minimum bend radius		Maximum working pressure		Burst pressure		Weight per unit length		*Part number
		in	mm		in	mm	in	mm	bar	psi	bar	psi	kg/m	lb/ft	
¼	4	0.252 - 0.278	6.39 - 7.06	TO	0.326 - 0.368	8.28 - 9.35	1 ½	38	6	87	18	261	0.041	0.027	92-100-04
		0.250 - 0.280	6.34 - 7.12	SS	0.355 - 0.395	9.02 - 10.04	¾	19	110	1595	330	4786	0.092	0.062	92-100-04-01-02
		0.250 - 0.280	6.35 - 7.12	AM	0.360 - 0.400	9.14 - 10.16	1 ½	38	77	1116	231	3350	0.056	0.038	92-100-04-01-55-01
⅜	5	0.308 - 0.333	7.84 - 8.46	TO	0.382 - 0.424	9.72 - 10.77	1 ½	38	6	87	18	261	0.056	0.037	92-100-05
		0.302 - 0.328	7.66 - 8.33	SS	0.424 - 0.458	10.77 - 11.63	¾	19	105	1522	315	4569	0.126	0.084	92-100-05-01-02
		0.290 - 0.320	7.36 - 8.13	AM	0.440 - 0.480	11.17 - 12.19	1 ½	38	74	1073	222	3220	0.075	0.050	92-100-05-01-55-01
½	6	0.381 - 0.407	9.69 - 10.34	TO	0.475 - 0.511	12.06 - 12.98	2	50	6	87	18	261	0.070	0.047	92-100-06
		0.376 - 0.406	9.54 - 10.32	SS	0.502 - 0.542	12.75 - 13.64	1	25	100	1450	300	4351	0.160	0.151	92-100-06-01-02
		0.376 - 0.406	9.55 - 10.32	AM	0.515 - 0.555	13.08 - 14.10	2	50	70	1015	210	3046	0.100	0.094	92-100-06-01-55-01
¾	8	0.525 - 0.550	13.33 - 13.97	TO	0.620 - 0.668	15.77 - 16.97	3	76	6	87	18	261	0.110	0.074	92-100-08
		0.515 - 0.545	13.07 - 13.85	SS	0.655 - 0.695	16.64 - 17.66	1 ½	38	75	1087	225	3263	0.225	0.151	92-100-08-01-02
		0.515 - 0.545	13.08 - 13.85	AM	0.655 - 0.695	16.64 - 17.66	3	76	52	754	156	2263	0.140	0.094	92-100-08-01-55-01
1	10	0.639 - 0.665	16.25 - 16.89	TO	0.770 - 0.811	19.55 - 20.60	4	100	6	87	18	261	0.161	0.108	92-100-10
		0.635 - 0.665	16.12 - 16.89	SS	0.810 - 0.850	20.57 - 21.59	2	50	62	899	186	2698	0.336	0.226	92-100-10-01-02
		0.635 - 0.665	16.13 - 16.89	AM	0.815 - 0.855	20.70 - 21.72	4	100	44	638	132	1915	0.204	0.137	92-100-10-01-55-01
1 ¼	12	0.765 - 0.795	19.42 - 20.20	TO	0.895 - 0.941	22.73 - 23.90	5	126	6	87	18	261	0.179	0.120	92-100-12
		0.760 - 0.790	19.30 - 20.07	SS	0.950 - 0.990	24.13 - 25.15	2 ½	63	52	754	156	2263	0.383	0.257	92-100-12-01-02
		0.760 - 0.790	19.30 - 20.07	AM	0.946 - 0.986	24.03 - 25.05	5	126	36	522	108	1566	0.236	0.158	92-100-12-01-55-01
1 ½	16	1.015 - 1.045	25.77 - 26.55	TO	1.165 - 1.215	29.58 - 30.86	6	150	6	87	18	261	0.268	0.180	92-100-16
		1.005 - 1.035	25.52 - 26.29	SS	1.227 - 1.269	31.15 - 32.23	3	75	50	725	150	2176	0.540	0.362	92-100-16-01-02
		1.005 - 1.035	25.52 - 26.29	AM	1.233 - 1.273	31.32 - 32.34	6	150	35	507	105	1523	0.354	0.237	92-100-16-01-55-01

\*For anti-static grade, add 10 to the 3-digit part number e.g. 92-100- becomes 92-110.

\*\*Hose construction - (TO) tube only, (SS) stainless steel, (AM) aramid.

The performance testing results stated in the above table have been carried out at ambient temperature, in a controlled laboratory environment, using water as the media. We recommend that the customer carries out stringent application performance testing on the hose, using the actual working conditions over a set period of time to validate the hose.

### Temperatures and pressures

Hyperline FX, SS grades - The MWP listed above should be reduced by 1% for each 1 °C above 160 °C (1% for each 1.8 °F above 320 °F) up to a maximum of 260 °C (500 °F).

Hyperline FX, AM Grades - The MWP listed above should be reduced by 1% for each 1 °C above 130 °C (1% for each 1.8 °F above 266 °F) up to a maximum of 180 °C (356 °F).

MWP listed are calculated on the basis of a 3:1 safety factor relative to the burst pressure, so burst pressure = 3 x MWP. If MWP is required based on a 4:1 safety factor (e.g. EN 16643 requirement), multiply the listed value by 0.75.

### Vacuum resistance

Hyperline FX, SS grades are usable at vacuum up to -0.9bar up to 150 °C (300 °F).

### Excellent flow rates

Compared with conventional convoluted hose designs, Hyperline FX has excellent flow rates due to the smooth bore, which prevents the turbulent fluid flow which occurs in convoluted hose products.

### Reduced diffusion rates

Hyperline FX is much more resistant to diffusion of liquids or gases than other PTFE hose products, due to its highly compressed, non-porous PTFE matrix. Hyperline FX has been successfully tested to SAE J1737 for resistance to automotive fuel diffusion.

### Non-stick internal surface

Hyperline FX hose has a smooth bore, non-stick liner which is effectively self-cleaning, and which resists material build-up inside the hose which may cause bore constriction.