

High Pressure Hoses & Pigtails

NGP offers a range of high pressure gas hoses and pigtails with inlet and outlet connections to suit most Australian Standard industrial and medical cylinder and manifold connections.

- **Smart-Hose™** Assemblies
- Standard *ARMA-FLEX* Flexible Hose
- Copper and Stainless Steel FLEXI-Coils (pigtails)

Smart-Hose™ Assemblies

Smart-Hose™ is a patented US hose safety system. It is strongly associated to the LPG transportation sector in the USA due to its unique shut-off system. The internal anti-whip cable offers significant safety benefits over conventional standard flexible high pressure hose and therefore has gained significant support for use in high pressure gas transfer. NGP supplies Smart-Hose™ in Australia in 800mm and 1800mm length versions however other lengths can be catered for. Smart-Hose is also available in EHP (31,000 kPa) versions.

Standard ARMA-Flex Flexible Hose

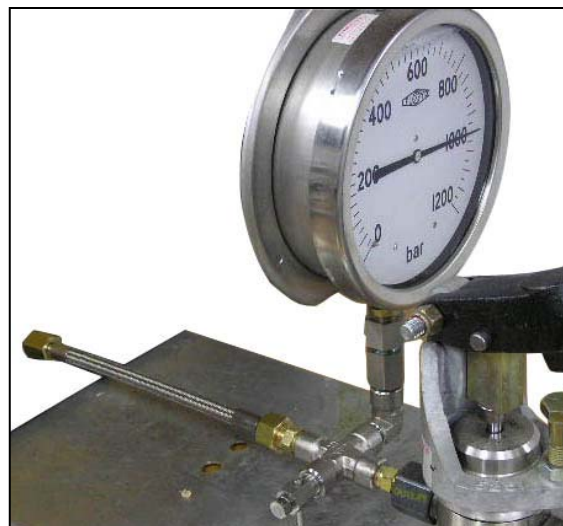
In most cases, NGP manufactures Standard Flexible Hoses from imported bulk stainless steel braided hose. Testing is carried out on each new batch of hose to ensure specifications are met for hose, ferrules and connections. NGP hydrostatically batch tests hose assemblies to 1000 Bar on a special in-house, hydrostatic testing unit (see photo below). Stainless steel cylinder end connection adaptors are standard on all hose assemblies to improve strength and to resist corrosion. All hose assemblies (including Smart-Hose™) are pressure tested at 240 Bar underwater for a minimum of 5 minutes. Where applicable, hose assemblies are labelled or stamped with gas identification and Maximum Working Pressure (MWP).

NGP only assembles high pressure hose for gas applications. We are **NOT** a hydraulic hose company that also supplies high pressure gas hose!

Copper and Stainless Steel FLEXI-Coils (pigtails)

NGP manufactures all FLEXI-Coils from either seamless, thick wall copper tube or stainless steel (depending on gas). All FLEXI-Coils are pressure tested and leak tested prior to leaving the factory. FLEXI-Coils can be manufactured to accommodate any required length.

Photo showing sample ARMA-Flex high pressure hose on hydrostatic test at 1,000 bar. Hose and fittings must maintain integrity.



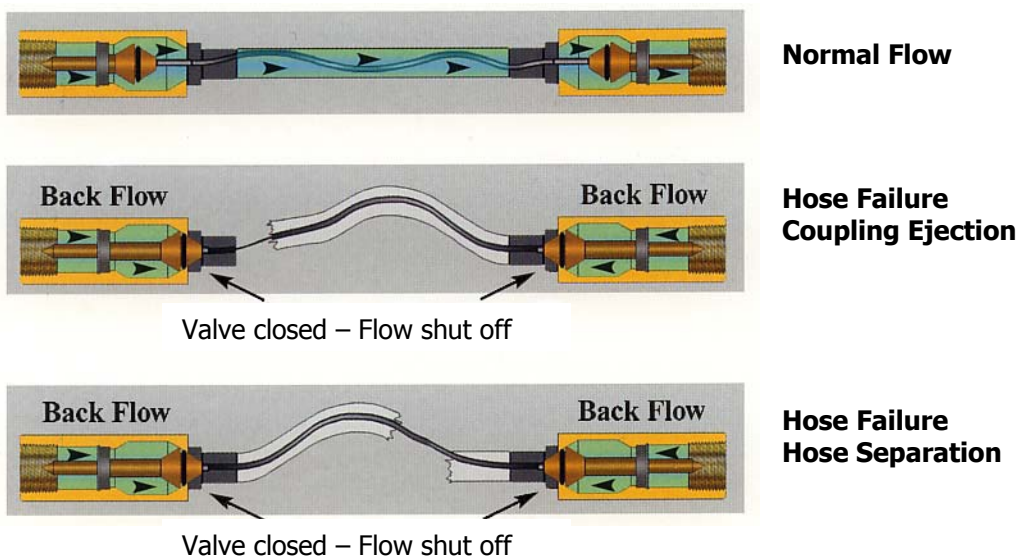
Smart-Hose™

NGP is the supplier of this unique product in Australia.

Problem: Conventional stainless steel braided hoses can be severed or become detached from end fittings leading to "whipping" of the hose and loss of cylinder contents. Hose whipping" can cause serious injury or death. The loss of gas is expensive and in severe situations can lead to asphyxiation or explosions.



Solution: Smart-Hose™ provides protection against hose whipping and gas loss with an internal anti-whip cable and flow shut-off valves fitted into each of the end fittings. The anti-whip cable is securely connected to the flow shut-off valves. In the event of the hose stretching or breakage, the cable becomes taut and closes off both of the valves. No gas loss!! No hose whip!! No other hose offers this type of protection!! Smart-Hose is ***the World's Safest Hose Assembly System!***



Smart-Hose™ - Don't settle for only partial protection

In time all hoses will fail in service! The uncontrolled release of gas as a result of a hose failure is industry's worst nightmare! The resulting consequences of hose failures can produce lead to:

- Human Injury
- Property Loss
- Product Loss
- Clean Up
- Short/Long Term Environmental Impact

It makes sense to incorporate the added safety of the Smart-Hose™ to all your gas transfer hose applications.

TEFLON vs TEFZEL

Due to the smaller size of HYDROGEN and HELIUM molecules, these two gases are more likely to leak through the TEFLON lining of a stainless steel braided hose. To overcome this problem, NGP offers flexible hoses with TEFZEL liners. TEFZEL has an emissivity (ie. Leak rate per unit length of hose) which is approximately ten times lower than that for TEFLON.

FOR HYDROGEN & HELIUM high pressure applications, choose TEFZEL!!

Smart-Hose™ Assemblies

Smart-Hose™ is suitable for most gas types except oxygen (NGP does not recommend the use of TEFLON or TEFZEL lined hoses with oxygen. See page 6 for copper pigtails). Each hose is fitted with 1/4" NPT female connections enabling fast fit up to the required gas connection. This also future proofs the hose assembly for when gas suppliers upgrade cylinders to new valve connections will be the case with Nitrogen and Air in 2003 and 2004 (shown in the table with an "*" next to the gas name). The existing connections can simply be changed by an authorised person to the new connection.

The standard **Smart-Hose™** lengths are 800mm, 1200mm and 1800mm. Other sizes can be ordered.

ARMA-FLEX Flexible Hose

NGP is a supplier of *ARMA-FLEX* stainless steel braided flexible hoses that are available for most gas types except oxygen. NGP recommends the use of stainless steel lined hoses for oxygen (see table) or copper pigtails (page 6). Each hose is fitted with a 1/4" NPT female connection enabling fast fit up to the required gas connection. This also future proofs the hose assembly for when gas suppliers upgrade cylinders to new valve connections or a repair is necessary. The existing connections can simply be changed or repaired by an authorised person. The main hose lengths are 800mm, and 1800mm however other lengths can be ordered.

For our testing procedure, please refer to page 2.

To accommodate this flexibility of sizing, NGP has developed a system that allows you to order any length and specification. Follow the steps below;

Step 1: Choose the Part No. from the table below that matches the gas



LINED STAINLESS STEEL BRAIDED LEADS

Part No.	Gas	Lead Length	Liner Material	Inlet Fitting	Outlet Fitting
G0008	Inert Gases	800mm	Teflon	Type 10	3/8" BSP RH
G0009	Inert Gases	1800mm	Teflon	Type 10	3/8" BSP RH
G0206	Helium	800mm	Tefzel	Type 10	3/8" BSP RH
G0244	Helium	1800mm	Tefzel	Type 10	3/8" BSP RH
G0010	Acetylene	800mm	Teflon	Type 20	3/8" BSP LH
G0011	Acetylene	1800mm	Teflon	Type 20	3/8" BSP LH
G0446	Other Fuel Gases	800mm	Teflon	Type 20	3/8" BSP LH
G0447	Other Fuel Gases	1800mm	Teflon	Type 20	3/8" BSP LH
G0207	Hydrogen	800mm	Tefzel	Type 20	3/8" BSP LH
G0245	Hydrogen	1800mm	Tefzel	Type 20	3/8" BSP LH
G0012	Carbon Dioxide	800mm	Teflon	Type 30	3/8" BSP RH
G0013	Carbon Dioxide	1800mm	Teflon	Type 30	3/8" BSP RH
G0333	Nitrogen	800mm	Teflon	Type 50	3/8" BSP RH
G0337	Nitrogen	1800mm	Teflon	Type 50	3/8" BSP RH
G0335	Air	800mm	Teflon	Type 60	3/8" BSP RH
G0336	Air	1800mm	Teflon	Type 60	3/8" BSP RH

To order hoses in a SmartHose design add a "SM" suffix to the standard hose part number, (eg. G0008-SH for an 800mm inert gas flexible SmartHose lead).

STAINLESS STEEL CONVOLUTED LEADS

Part No.	Gas	Lead Length	Inlet Fitting	Outlet Fitting
G0124	Oxygen	800mm	Type 10	3/8" BSP RH
G0123	Oxygen	1800mm	Type 10	3/8" BSP RH
G0126	Medical Air	800mm	Pin Indexed Yoke	1/2" BSP RH
G0125	Medical Air	1800mm	Pin Indexed Yoke	1/2" BSP RH
G0502	Medical Nitrous Oxide	800mm	Pin Indexed Yoke	Type 30
G0503	Medical Nitrous Oxide	1800mm	Pin Indexed Yoke	Type 30
G0504	Oxygen	1800mm	Type 10	M18x1.5
G0505	Medical Oxygen	1800mm	Pin Indexed Yoke	M18x1.5
G0506	Medical Air	1800mm	Pin Indexed Yoke	M20x1.5
G0507	Medical Nitrous Oxide	1800mm	Pin Indexed Yoke	M16x1.5