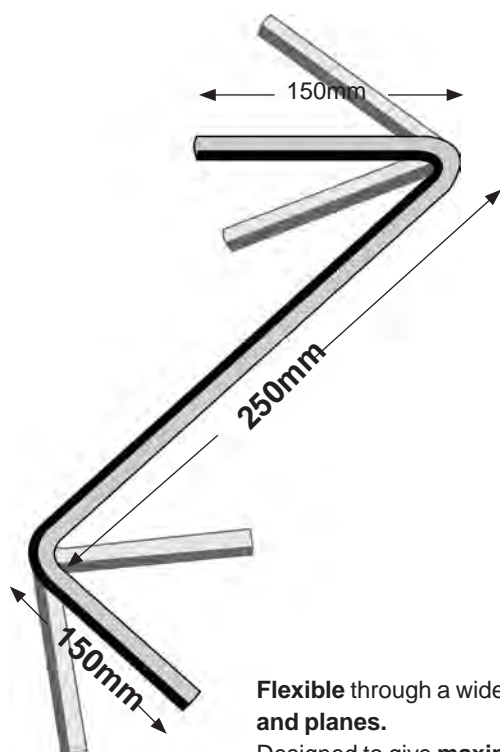


## UNIVERSAL SMALL BORE “Z” HOSE™ BENDS



### Universal Application

Covers majority of small bore market

### Reduced Inventory

Mackay Universal Small Bore “Z” hose™ bends, the only hose specially designed to provide the largest small bore application coverage from a few part numbers.

Unlike Radiator hoses, demand for small bore hoses can be relatively inconsistent, requiring an unjustifiably large range to cater for the varied shapes and sizes in the market.

Mackay Universal Small Bore “Z” hose™ bends now solves this problem giving you the versatility to meet the majority of applications without high inventory costs. Combined with our application specific small bore range Mackay Hoses provide a superior and cost effective solution.

**Flexible** through a wide **range of angles and planes.**  
 Designed to give **maximum application coverage**

ID	PART No	APPLICATION
6mm (7/32")	ZHB6	<b>Universal Water Applications Only</b>
8mm (5/16")	ZHB8	
10mm (3/8")	ZHB10	
12mm (1/2")	ZHB12	
15-16 mm (5/8")	ZHB15	
19mm (3/4")	ZHB19	<b>Universal Emission Control, Fuel Vapour/ Vacuum/ Vent hose Only (Low Pressure)</b>
25mm (1")	ZHB25	
6mm (7/32")	ZHB6EFV	
8mm (5/16")	ZHB8EFV	
10mm (3/8")	ZHB10EFV	<b>Suitable for fuel applications (non E.F.I)</b>
12mm (1/2")	ZHB12EFV	
6mm (7/32")	ZHB6F	
8mm (5/16")	ZHB8F	
10mm (3/8")	ZHB10F	
12mm (1/2")	ZHB12F	

## “Z” HOSE™ TRADE PACKS

The revolutionary Mackay “Z” hoses™ are now available in a two popular TRADE PACKS, Part Number **ZBAG1** and **ZBAG2**..

The **ZBAG1** consists of one each of the top 5 “Z” water hoses and is especially suited as an introductory or replenishment stock pack for workshops. The **ZBAG2** contains the additional larger ID 19mm and 25mm hoses.

### Contents

The “Z” hose™ trade pack (**P/No ZBAG1**) contains one each of the following hoses

ID	PART No	APPLICATION
6mm (7/32”)	ZHB6	Universal Water Applications Only
8mm (5/16”)	ZHB8	
10mm (3/8”)	ZHB10	
12mm (1/2”)	ZHB12	
15-16 mm (5/8”)	ZHB15	

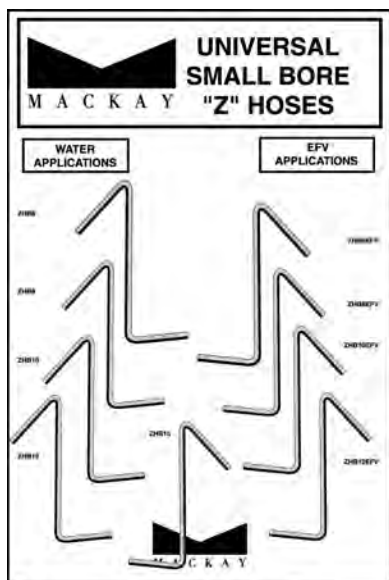


The “Z” hose™ trade pack (**P/No ZBAG2**) contains one each of the following hoses

ID	PART No	APPLICATION
6mm (7/32”)	ZHB6	Universal Water Applications Only
8mm (5/16”)	ZHB8	
10mm (3/8”)	ZHB10	
12mm (1/2”)	ZHB12	
15-16 mm (5/8”)	ZHB15	
19mm (3/4”)	ZHB19	
25mm (1”)	ZHB25	



## SMALL BORE “Z” HOSE™ MERCHANDISER Part No ZHBM2



The Mackay “Z” hose™ merchandiser is specially designed to improve your sales, by keeping the product in front of your customers. **Ideal for showroom or workshops.**

### CONTENTS

3 of each Part Number ZHB6, ZHB8, ZHB10, ZHB12, ZHB15, ZHB6EFV, ZHB8EFV, ZHB10EFV, ZHB12EFV.

1 Merchandiser board, 9 Hooks.

## Mackay Vehicle Hose Packs

### HOLDEN

#### CHVP6 - VL Commodore 3.0 Litre RB30 EFI 1986-88

Part #	QTY	Application
CH1545	1	Top Hose
CH1546	1	Bottom Hose
CH1964	1	Thermostat to Heater Inlet
CH1977	2	Heater Hose
CH3258	1	Bypass Hose Pipe 2 to Pipe 3
CH3256	1	Bypass Hose Pipe 3 To Inlet Manifold



#### CHVP15- VP- VR Commodore 3.8 Litre V6 1991-94

Part #	QTY	Application
CH1759	1	Top Hose
CH1643	1	Bottom Hose
CH1779	1	Heater Hose Valve to Heater
CH1780	1	Heater Hose Heater to Engine
CH1781	1	Water Valve to Engine
CH1782	1	ByPass Hose

#### CHVP50- VP- VR Commodore 3.8 Litre V6 1991-94 With ABS

Part #	QTY	Application
CH1848	1	Top Hose
CH1643	1	Bottom Hose
CH1779	1	Heater Hose Valve to Heater
CH2155	1	Heater Hose Heater to Engine
CH1781	1	Water Valve to Engine
CH1782	1	ByPass Hose

#### CHVP7 - VN Commodore 3.8 Litre V6 1988-91

Part #	QTY	Application
CH1644	1	Top Hose
CH1643	1	Bottom Hose
CH1646	1	Engine To Water Valve
CH1647	1	Water Valve to Heater Inlet
CH1648	1	Heater Outlet to Water Valve
CH1649	1	Water Valve To Engine

#### CHVP8 - VS Commodore 3.8 Litre V6 1995-97

Part #	QTY	Application
CH1979	1	Top Hose
CH1980	1	Bottom Hose
CH2040	1	Water Valve To Inlet
CH2041	1	Water Valve to Engine Outlet
CH2042	1	Heater To Water Valve
CH3269	1	Throttle Body Hose

#### CHVP3 - VT -VX Commodore 3.8 Litre V6 1997-2007 Non Supercharged

Part #	QTY	Application
CH2256	1	Top Hose
CH2257	1	Bottom Hose
CH2279	1	Water Valve To Heater Upper
CH2282	1	Water Valve To Heater Lower
CH2280	1	Heater Hose
CH2277	1	Inlet Hose To Heater Tap
CH3061	1	Bypass Lower Engine To Water Outlet

#### CHVP5 - VY Commodore V6 Non Supercharged 2002-04

Part #	QTY	Application
CH3318	1	Top Hose
CH2257	1	Bottom Hose
CH2279	1	Water Valve To Heater Upper
CH2282	1	Water Valve To Heater Lower
CH2280	1	Heater Hose
CH2277	1	Inlet Hose To Heater Tap

#### CHVP42 - Jackaroo 98-3/99 3.0 Litre T/Diesel

Part #	QTY	Application
CH2459	1	Top Hose
CH2999	1	Bottom Hose
CH2458	1	Heater Hose Outlet
CH2460	1	Heater Hose Inlet

#### CHVP43 - Jackaroo 4/99-ON 3.0 Litre T/Diesel

CH2459	1	Top Hose
CH3000	1	Bottom Hose
CH2458	1	Heater Hose Outlet
CH2460	1	Heater Hose Inlet

<b>CHVP44 - Jackaroo 88-92 2.8 Litre T/Diesel</b>		
CH2819	1	Top Hose
CH2841	1	Bottom Hose
CH2766	1	ByPass Hose Pipe to Thermostat
CH2843	1	Heater Hose Pipe to water manifold
CH2844	1	Heater Hose to engine
CH2766	1	Heater hose Engine to Heater
CH2842	1	Heater Hose to pipe

## FORD

<b>CHVP9- XF Falcon 3.3 &amp; 4.1 Litre EFI Only 1984-88</b>			<b>CHVP10 - AU Falcon 4 Litre 6 Cyl 1998-2002</b>		
Part #	QTY	Application	Part #	QTY	Application
CH1385	1	Top Hose (With A/C)	CH2473	1	Top Hose
CH968	1	Bottom Hose	CH2475	1	Bottom Hose
CH1671	1	Heater Hose (Heater to T Piece) to 1/88	CH2476	1	Radiator Supply Tank
CH1672	1	Heater Hose (Water Pump to H Piece)	CH2456	1	Crankcase Vent Hose
CH1665	1	Heater Hose (Cyl Head to Adaptor)	CH2471	1	Heater hose Tap To Pipe
CH1663	1	Heater Hose (H Piece to Stop Valve)	CH1627	1	Heater Hose valve to heater (MPFI)
CH1664	1	Heater Hose (Stop Valve to Heater)	SHW9.5x2	1	Straight Hose 8.5mm x 2 metres
CH1673	1	Heater Hose (Heater To Adaptor)	CH1946	1	Heater Hose with Fitting
<b>CHVP14 - EA-EB Falcon 3.9 Litre 6 Cyl 1988-92</b>			<b>CHVP2 - EA-EB Falcon 3.9 Litre 6 Cyl 1988-92</b>		
Part #	QTY	Application	Part #	QTY	Application
CH1605	1	Top Hose	CH1605	1	Top Hose
CH1606	1	Bottom Hose	CH1606	1	Bottom Hose
CH1626	1	Hose- Heater to Pipe <b>(Multi Point E.F.I.)</b>	CH1624		Hose-Water Valve to Heater Core <b>(Single Point E.F.I.)</b>
CH1627	1	Hose - Water Valve to heater <b>(Multi Point E.F.I.)</b>	CH1623	1	Hose-Manifold to Water Valve <b>(Single Point E.F.I.)</b>
			CH1625	1	Hose- Heater to Water Pump <b>(Single point E.F.I.)</b>
<b>CHVP11 - EF-EL Falcon 4.0 Litre 6 Cyl 1994-98</b>			<b>CHVP18 - EBII-ED Falcon 4 Litre 6 Cyl 2/92-1994</b>		
Part #	QTY	Application	Part #	QTY	Application
CH1944	1	Top Hose	CH1771	1	Top Hose
CH1945	1	Bottom Hose	CH1788	1	Bottom Hose
CH1946	1	Heater Hose with end fitting	CH1626	1	Hose- Heater to Pipe <b>(Multi Point E.F.I.)</b>
CH1627	1	Heater Hose	CH1627	1	Hose - Water Valve to heater <b>(Multi Point E.F.I.)</b>
CH2471	1	Heater Hose Tap To Pipe	CH2248	1	Hose- Radiator to Header Tank
CH2160	1	Recovery Tank to Radiator Hose			
<b>CHVP30 - BA/BF Falcon 4.0 Litre 6 Cyl 9/2002 With T Piece</b>			<b>CHVP31 - BA/BF Falcon 4.0 Litre 6 Cyl 9/2002 with out T Piece</b>		
Part #	QTY	Application	Part #	QTY	Application
CH3304	1	Supply Tank Hose	CH3304	1	Supply Tank Hose
CH3300	1	Bottom Hose	CH3300	1	Bottom Hose
CH3312	1	Crankcase Vent Hose	CH3312	1	Crankcase Vent Hose
CH3299	1	Top Hose	CH3299	1	Top Hose

CH3386	1	Heater Hose with T Piece	CH3330	1	Heater Hose without T Piece
CH3329	1	Heater Hose	CH3329	1	Heater Hose
CH4534	1	Oil Cooler Hose Inlet	CH4534	1	Oil Cooler Hose Inlet
CH4538	1	Oil Cooler Hose Outlet	CH4538	1	Oil Cooler Hose Outlet
CH4536	1	Oil Cooler Hose Inlet	CH4536	1	Oil Cooler Hose Inlet
SHW9.5x2	1	9.5 mm Straight Hose (2Metres)	SHW9.5x2	1	9.5 mm Straight Hose (2Metres)

### CHVP16 - Laser KC/ MAZDA 323 1.6 Litre 1987-90

Part #	QTY	Application
CH1501	1	Top Hose
CH1533	1	Bottom Hose
CH1840	1	ByPass Hose
CH1847	1	Heater Hose Engine to Heater
CH1845	1	Heater Hose Heater to Engine

### CHVP39 - Courier/ Mazda Bravo 99-02 2.5 Litre T/D

Part #	QTY	Application
CH3375	1	Top Hose
CH3372	1	Bottom Hose
CH3369	1	ByPass Hose
CH3383	1	Heater Hose
CH3371	1	Heater Hose
CH3381	1	Heater Hose

### CHVP40 - Courier/ Mazda Bravo 96-98 2.8 Litre Diesel

CH2579	1	Top Hose
CH2561	1	Bottom Hose
CH2572	1	ByPass Hose
CH2255	1	Heater Hose
CH2569	1	Heater Hose

## TOYOTA

### CHVP1 HiLux LN86-106 2.8 Litre Diesel 8/88-8/94 (w/out p/stg)

Part #	QTY	Application
CH2014	1	Top Hose
CH2006	1	Bottom Hose
CH3528	1	Heater Hose
CH3071	1	ByPass Hose
CH3530	1	Heater Hose
CH3527	1	heater Hose
CH3526	1	Heater Hose
CH3529	1	Heater Hose

### CHVP17 HiLux LN86-106 2.8 Litre Diesel 8/88-8/94 (with p/stg)

Part #	QTY	Application
CH2014	1	Top Hose
CH2010	1	Bottom Hose <b>Pipe to Engine No 2</b>
CH2011	1	Bottom Hose <b>Radiator To Pipe No 1</b>
CH3528	1	Heater Hose
CH3071	1	ByPass Hose
CH3530	1	Heater Hose
CH3527	1	heater Hose
CH3526	1	Heater Hose
CH3529	1	Heater Hose
CH3531	1	Heater Hose No 3

### CHVP12 - VDV10 Camry 3.0 Litre V6 2/93-95

Part #	QTY	Application
CH1816	1	Top Hose
CH1817	1	Bottom Hose
CH1973	1	Heater Hose Inlet To Valve
CH1974	1	Heater Hose Outlet
CH1976	1	Heater Hose Tap to Heater

### CHVP25 - Landcruiser HZJ105R 4.2 Litre Diesel w/out rear Heater 1/98-ON

Part #	QTY	Application
CH3079	1	ByPass Hose 1
CH2001	1	Top Hose
CH3046	1	Heater Hose Inlet A
CH3075	1	ByPass Hose 2
CH2526	1	Bottom Hose
CH2875	1	Heater Hose Inlet B

<b>CHVP26</b> - Landcruiser HZJ105R 4.2 Litre Diesel with rear Heater 1/98-ON			<b>CHVP32</b> - Prado 120 Series 3.0 Litre 1KZ-TE T/Diesel 2003-2007		
<b>Part #</b>	<b>QTY</b>	<b>Application</b>	<b>Part #</b>	<b>QTY</b>	<b>Application</b>
CH3079	1	ByPass Hose 1	CH3728	1	Bottom Hose
CH2001	1	Top Hose	CH3740	1	Heater Hose A
CH3046	1	Heater Hose Inlet A	CH3738	1	Heater Hose B
CH3075	1	ByPass Hose 2	CH3739	1	Heater Hose C
CH2526	1	Bottom Hose	CH3729	1	Top Hose
CH3045	1	Heater Hose Inlet B			
<b>CHVP34</b> - Prado 90 Series 3.4 Litre V6 5VZ-FE 2003-2007			<b>CHVP33</b> - Prado 120 Series 4.0 Litre V6 DOHC 1GR-FE 2003-2007		
<b>Part #</b>	<b>QTY</b>	<b>Application</b>	<b>Part #</b>	<b>QTY</b>	<b>Application</b>
CH4198	1	Heater Hose Inlet C	CH3753	1	Heater Hose A
CH4200	1	Heater Hose Outlet B	CH3757	1	ByPass Hose B
CH4199	1	Heater Hose Outlet A	CH3754	1	ByPass Hose
CH2213	1	Top Hose	CH3756	1	Heater Hose C
CH4216	1	Bottom Hose	CH3758	1	Heater Hose B
<b>CHVP35</b> - HiLux LN147R 3.0 Litre 5L			CH3752	1	ByPass Hose B Sub Assembly
CH2680	1	Bottom Hose pipe to block	CH3750	1	ByPass Hose A Sub Assembly
CH2697	1	Bottom Hose radiator to pipe	CH3755	1	Bottom Hose
CH2690	1	Heater Hose Inlet B	CH3759	1	Top Hose
CH2689	1	Heater Hose Inlet A	CH3751	1	ByPass Hose A
CH2997	1	Heater Hose outlet A			
CH2691	1	Heater Hose outlet B	<b>CHVP36</b> - HiLux LN172 3.0 Litre 5L Engine 1997-03		
CH2679	1	Top Hose	CH2680	1	Bottom Hose pipe to block
<b>CHVP37</b> - HiLux KZN165R 1999-05 3.0 Litre T/Diesel			CH2998	1	Bottom Hose radiator to pipe
CH4181	1	Top Hose	CH2690	1	Heater Hose Inlet B
CH4182	1	Bottom Hose	CH2689	1	Heater Hose Inlet A
CH4184	1	Heater Hose Outlet	CH2997	1	Heater Hose outlet A
CH4183	1	Heater Hose A	CH2691	1	Heater Hose outlet B
<b>CHVP45</b> - HiLux LN130 1989-96 2.8 Litre Diesel			CH2679	1	Top Hose
CH2014	1	Top Hose	<b>CHVP38</b> - HiLux LN167R 1997-2003 3 Litre 5L Engine		
CH2011	1	Bottom Hose	CH2679	1	Top Hose
CH2010	1	Bottom Hose	CH2680	1	Bottom Hose Pipe to Engine
CH3529	1	Heater Hose Outlet B	CH2998	1	Bottom Hose Radiator to Pipe
CH3526	1	Heater Hose Inlet B	CH4618	1	Bottom Hose Radiator to pipe 10/00-03
CH3527	1	Heater Hose Outlet E	CH4731	1	Heater Hose
CH3530	1	Heater Hose Inlet C	CH4729	1	Heater Hose
CH3528	1	Heater Hose Outlet A	CH2691	1	Heater Hose Outlet B
CH3071	1	Heater Hose Inlet E	CH2690	1	Heater Hose Inlet B
CH3531	1	Heater Hose Inlet A	CH2997	1	Heater Hose Outlet A
			CH2689	1	Heater Hose Inlet

<b>CHVP13 - TR-TS Magna 3.0 Litre V6 1991-96</b>			<b>CHVP20 Pajero NJ 3.5 Litre V6 1996-97</b>		
<b>Part #</b>	<b>QTY</b>	<b>Application</b>	<b>Part #</b>	<b>QTY</b>	<b>Application</b>
CH1820	1	Top Hose	CH2501	1	Top Hose
CH1822	1	Bottom Hose (Auto)	CH2454	1	Bottom Hose
CH2779	1	Heater Hose No. 1	CH3505	1	Throttle Body Hose D
CH2723	1	Heater Hose No. 2	CH3502	1	Heater Hose A
CH2777	1	Thermostat Bypass	CH3501	1	Heater Hose B
HH82	1	Water Intake Pipe To Connector	CH3583	1	Water Line Hose 3
<b>CHVP19 Pajero NJ 3.5 Litre V6 6G74 1995-96</b>			CH3507	1	Throttle Body Hose C
<b>Part #</b>	<b>QTY</b>	<b>Application</b>	CH3506	1	Throttle Body Hose B
CH2455	1	Top Hose	CH3509	1	ByPass Hose
CH2454	1	Bottom Hose	CH3504	1	ByPass Hose
CH3505	1	Throttle Body Hose D	CH3577	1	Water Line Hose 1
CH3502	1	Heater Hose A	CH3508	1	Throttle Body Hose A
CH3501	1	Heater Hose B	<b>CHVP21 Pajero NJ 3.0 Litre V6 1993-96</b>		
CH3583	1	Water Line Hose 3	<b>Part #</b>	<b>QTY</b>	<b>Application</b>
CH3507	1	Throttle Body Hose C	CH3947	1	Heater Hose
CH3506	1	Throttle Body Hose B	CH3948	1	Heater Hose
CH3509	1	ByPass Hose	CH1711	1	Top Hose
CH3504	1	ByPass Hose	CH3581	1	ByPass Hose
CH3577	1	Water Line Hose 1	CH3584	1	ByPass Hose Throttle Body inlet
CH3508	1	Throttle Body Hose A	CH1712	1	Bottom Hose
<b>CHVP23 Pajero NP 3.5 Litre V6 6G74 2002-04</b>			<b>CHVP22 Pajero NM 3.5 Litre V6 6G74 2000-2002</b>		
<b>Part #</b>	<b>QTY</b>	<b>Application</b>	<b>Part #</b>	<b>QTY</b>	<b>Application</b>
CH4194	1	Heater Hose D	CH4194	1	Heater Hose D
CH4191	1	Heater Hose A	CH4191	1	Heater Hose A
CH4193	1	Heater Hose C	CH4193	1	Heater Hose C
CH4192	1	Heater Hose B	CH4192	1	Heater Hose B
CH3714	1	Top Hose	CH3714	1	Top Hose
CH3654	1	Bottom Hose	CH3654	1	Bottom Hose
<b>CHVP24 Pajero NP 3.2 Litre Turbo Diesel 2005-ON</b>					
<b>Part #</b>	<b>QTY</b>	<b>Application</b>			
CH3762	1	Top Hose			
CH3767	1	Bottom Hose			
CH3765	1	Heater Hose A			
CH3766	1	Heater Hose B			
CH3764	1	Heater Hose C			
CH3763	1	Heater Hose D			
CH3770	1	Heater Hose E			

## NISSAN

### CHVP27 Patrol GU (Y61) 4.5 Litre TB45 1997-2000

Part #	QTY	Application
CH2743	1	Heater Hose Outlet
CH2744	1	Heater Hose Front No1
CH2895	1	Heater Hose Front No3
CH2745	1	ByPass Hose
CH2748	1	ByPass Hose
CH2747	1	ByPass Hose
CH2742	1	Heater Hose B
HH1272	1	ByPass Hose (Cut to Length)
CH2746	1	ByPass Hose
CH2740	1	Bottom Hose
CH2739	1	Top Hose
ZHB8	1	ByPass Hose
CH2741	1	heater Hose A

### CHVP46 Nissan Patrol GU Y61 3.0ltr ZD30 Diesel 02/2000- 08/200

CH3103	1	Top Hose
CH3104	1	Bottom Hose
CH3105	1	Turbo Hose Short
CH3106	1	Turbo Hose
CH3107	1	Turbo Hose Cold Side
CH4866	1	Heater Hose
CH4862	1	ByPass Hose
CH4936	1	Expansion Tank Hose

### CHVP48 Nissan Patrol GU Y61 3.0ltr ZD30 Diesel 12/2009-ON

CH4854	1	Top Hose
CH4856	1	Bottom Hose
CH3216	1	Heater Hose
CH3212	1	Heater Hose
CH4865	1	ByPass Hose
CH4852	1	ByPass Hose
CH4857	1	ByPass Hose
CH4936	1	Expansion Tank Hose

### CHVP28 Patrol GQ (Y60) 4.2 Litre TB42 (Carby only) 1988-97

Part #	QTY	Application
CH4262	1	Heater Hose Engine to Heater
CH1694	1	Bottom Hose
CH3411	1	ByPass Hose Thermostat to Engine
CH3410	1	ByPass Hose Intake to Engine
CH3661	1	Heater Hose Heater to Engine
CH1693	1	Top Hose

### CHVP29 Patrol GQ (Y60) 4.2 Litre TB42 (EFI only) 1988-97

Part #	QTY	Application
CH3119	1	ByPass Hose 2 (Engine to pipe)
CH1694	1	Bottom Hose
CH3117	1	ByPass Hose 3 to Engine
CH3671	1	Heater Hose (engine to Heater)
CH3120	1	Heater Hose ( Heater to Engine)
CH1693	1	Top Hose

### CHVP47 Nissan Patrol GU Y61 3.0ltr ZD30 Diesel 08/2006-ON

CH4854	1	Top Hose
CH4856	1	Bottom Hose
CH4863	1	Heater Hose
CH4855	1	Heater Hose
CH4865	1	ByPass Hose
CH4852	1	ByPass Hose
CH4857	1	ByPass Hose
CH4936	1	Expansion Tank Hose

### CHVP49 Nissan Patrol 2/2000-8/06 3.0 Litre Diesel

CH3103	1	Top Hose
CH3104	1	Bottom Hose
CH4866	1	Heater Hose
CH4862	1	By Pass Hose
CH4936	1	Expansion Tank Hose

## MackayFlex™

MackayFlex™ is a flexible water hose (**Not suitable for oil, fuel applications**) designed to suit universal Automotive and Industrial applications.

MackayFlex™ hoses can bend and flex in almost any direction and is an ideal replacement for unusual / emergency applications or permanent use. Made from quality EPDM rubber, with textile reinforcement and rubber encapsulated steel inner spring construction.

### Suitable for Water Applications

Working Temperature: -40 degrees C To +125 degrees C.

Burst Pressure: According to SAEJ20R5 standards

### Part Number Identification system:

eg. **Single ID**

25254F = 25mm ID X 254mm Length

**Dual ID**

3844558F = 38mm ID on one end, 44mm ID other end x 558mm Length.



### MACKAYFLEX™ Single ID

MackayFlex #	ID (mm)	Length (mm) (+20 /-0 mm)
25254F	25	254
25406F*	25	406
25508F	25	508
25609F	25	609
32304F*	32	304
32406F*	32	406
32508F*	32	508
32609F	32	609
35406F	35	406
38355F*	38	355
38406F*	38	406
38457F*	38	457
38508F*	38	508
44355F*	44	355
44406F*	44	406
44457F*	44	457
44609F	44	609
51203F	51	203
51355F*	51	355
51406F*	51	406
51609F	51	609
57254F	57	254
57355F*	57	355
57457F*	57	457
57558F	57	558
57660F	57	660
63254F	63	254
63355F*	63	355
63457F	63	457
70254F	70	254
70355F*	70	355
70457F	70	457
70558F	70	558
76254F	76	254
76355F*	76	355
76457F	76	457
76558F	76	558

### MACKAYFLEX™ Dual ID

MackayFlex #	ID 1 (mm)	ID 2 (mm)	Length (mm) (+20 /-0 mm)
3238304F	32	38	304
3238406F	32	38	406
3538304F	35	38	304
3538406F	35	38	406
3844355F	38	44	355
3844457F	38	44	457
3844558F	38	44	558
4451304F	44	51	304
4451406F	44	51	406
5157304F	51	57	304
5157406F	51	57	406
5763304F	57	63	304
5763406F	57	63	406
6370304F	63	70	304
6370406F	63	70	406
7076304F	70	76	304
7076406F	70	76	406

### MACKAYFLEX™ Merchandiser MFM2

The MackayFlex™ Hose Merchandiser helps you easily display the top 18 MackayFlex™ Hoses.

The Merchandiser includes a 18 hook rack (HR1), Header board and the 18 most popular MackayFlex hoses.



**\* Hoses included with Merchandiser (1 of each)**

All Dimensions Nominal

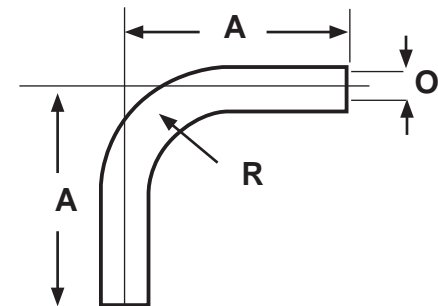
## UNIVERSAL 90° HOSE BENDS

Mackay Universal Hose bends are available in two separate specifications, one for water and the other for fuel applications. It is important to select the correct specification for your application.

Hose Bends UHB8 - UHB57 are manufactured from heat and ozone resistant EPDM to Spec. SAE J20R4 Class D-1 and are not suitable for the conveyance of petroleum products.

For Fuel applications use part numbers UHB8N to UHB57N which are manufactured from Fuel resistant Nitrile.

Please note that fuel application UHB's are made to customer order only with MOQ;s as below.



Outer cover formulated to provide good resistance to oil, heat abrasion and the effects of ozone



High grade tube compound to withstand the effects of coolant additives and fuels (nitrile version) Also offers better resistance to electrochemical degradation.

Tough Rayon or Kevlar lock-stitch knitting for maximum burst pressure

### WATER APPLICATIONS *Only*

INTERNAL DIAMETER	PART No.	LENGTH	
		A	R
8	UHB8-300	300	50
10	UHB10-300	300	50
13	UHB13	105	50
13	UHB13-300	300	50
16	UHB16	105	50
16	UHB16-300	300	50
19	UHB19	105	50
19	UHB19-300	300	50
25	UHB25	105	50
25	UHB25-300	300	50
31	UHB31	120	60
31	UHB31-300	300	60
38	UHB38	120	60
38	UHB38-300	300	60
44	UHB44	140	70
44	UHB44-300	300	70
50	UHB50	140	70
50	UHB50-300	300	70
57	UHB57	170	85
57	UHB57-300	300	85
63	UHB63	170	95
63	UHB63-300	300	95

### FUEL APPLICATIONS *Only* *Non Stocked Product*

Made to customer order, MOQ Applies

INTERNAL DIAMETER	PART No.	LENGTH		MOQ
		A	R	
8	UHB8-300N	300	50	300
10	UHB10-300N	300	50	300
13	UHB13N	105	50	850
13	UHB13-300N	300	50	300
16	UHB16N	105	50	850
16	UHB16-300N	300	50	300
19	UHB19N	105	50	400
19	UHB19-300N	300	50	150
25	UHB25N	105	50	100
25	UHB25-300N	300	50	300
31	UHB31N	120	60	850
31	UHB31-300N	300	60	300
38	UHB38N	120	60	100
38	UHB38-300N	300	60	300
44	UHB44N	140	70	100
44	UHB44-300N	300	70	300
50	UHB50N	140	70	nil
50	UHB50-300N	300	70	nil
57	UHB57N	170	85	100
57	UHB57-300N	300	85	300

ALL DIMENSIONS IN MILLIMETRES

## UHB Universal Trade Pack - Part Number UBAG1

Pack contains:

Part Number	I.D.	QTY
UHB31	31mm (1 1/4")	1
UHB31-300/45	31mm (1 1/4")	1
UHB38	38mm (1 1/2")	1
UHB38-300/45	38mm (1 1/2")	1
UHB44	44mm (1 3/4")	1
UHB44-300/45	44mm (1 3/4")	1
UHB50	50mm (2")	1
UHB50-300/45	50mm (2")	1

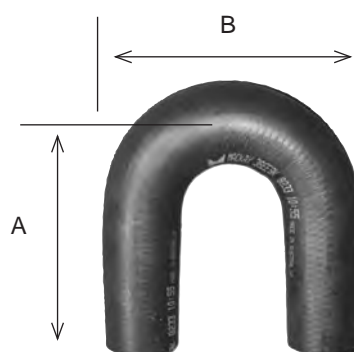
**Water Applications Only**



## U Shaped Universal Hose

ID	Part Number	LENGTH	
		A	B
38mm (1 1/2")	USH38	145	155

**Water Applications Only**



## UNIVERSAL 45° HOSE BENDS

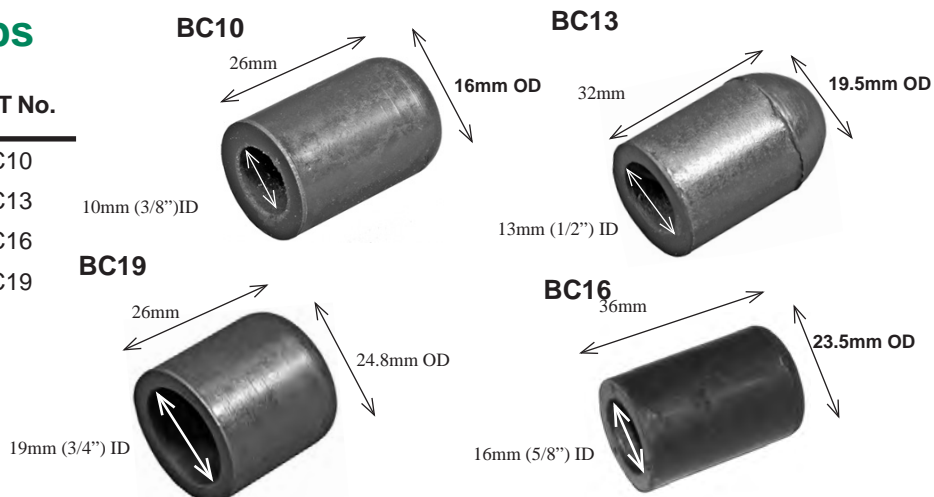
**Water Applications Only**

INTERNAL DIAMETER	PART No.
31mm (1 1/4")	UHB31-300/45
38mm (1 1/2")	UHB38-300/45
44mm (1 3/4")	UHB44-300/45
50mm (2")	UHB50-300/45



## UNIVERSAL Blanking Caps

INTERNAL DIAMETER	PART No.
10mm (3/8")	BC10
13mm (1/2")	BC13
16mm (5/8")	BC16
19mm (3/4")	BC19



## STRAIGHT HOSE

Mackay General Purpose Straight Hose SHW19 to SHW57 is manufactured from good quality heat, water and ozone resistant EPDM with rayon knitted reinforcement, that conforms to Spec. SAE J20R4 Class D-1. Minimum burst pressure range - 0.62 to 1.03 MPa depending on ID size. This hose is **not** suitable for petroleum based fluids.

Sizes SHF51 to SHF57 are manufactured from Nitrile entirely and meet Spec SAE30R6 and will withstand a working temperature of 100 degrees C. and a pressure of 0.11MPa (16PSI). These hoses are suitable for **fuel applications only** and are recommended for fuel filler applications, they are **not** suitable for use as a coolant hose.



I.D.	PART No.	LENGTH	APPLICATION
19mm	SHW19	1000mm	
22mm	SHW22	1000mm	
25mm	SHW25	1000mm	
28mm	SHW28	1000mm	
32mm	SHW32	1000mm	
35mm	SHW35	1000mm	<b>Water Only</b>
38mm	SHW38	1000mm	
41mm	SHW41	1000mm	
44mm	SHW44	1000mm	
48mm	SHW48	1000mm	
51mm	SHW51	1000mm	
54mm	SHW54	1000mm	
57mm	SHW57	1000mm	
63mm	SHW63	1000mm	
38mm	SHF38	1000mm	
51mm	SHF51	1000mm	<b>Fuel Only</b>
54mm	SHF54	1000mm	
57mm	SHF57	1000mm	
63mm	SHF63	1000mm	

## Universal Hose Springs

Galvanised springs for use in non-standard applications where the hose may be more susceptible to vacuum collapse.

To insert spring into hose lubricate with soapy water.

Part Number	Spring OD (Fits Hose ID)	Spring Length
CHS53G	35	287
CHS45G	42	254
CHS55G	42	387
CHS56G	42	304
CHS42G	48	381

## EMISSION CONTROL, FUEL VAPOUR & VACUUM HOSE

Mackay EFV Hose is made from fuel resistant nitrile with HYPALON covering and is heat and ozone resistant.



ID	PART No.	LENGTH	PACK
3mm (7/64")	EFV1003x2	2 metres	Bag
	EFV1003x10	10 metres	Box
	EFV1003x20	20 metres	Box
4mm (5/32")	EFV1004x2	2 metres	Bag
	EFV1004x10	10 metres	Box
	EFV1004x20	20 metres	Box
6mm (1/4")	EFV1006x2	2 metres	Bag
	EFV1006x10	10 metres	Box
	EFV1006x20	20 metres	Box

## HEATER HOSE

Mackay Heater Hose is manufactured from heat and ozone resistant EPDM meeting or exceeding Spec. **SAE 20R3 Class D-1**. It is not suitable for petroleum based liquids. Burst pressure (min) 250 PSI, Working pressure (max) 40PSI, Working Temp to 110°

INSIDE DIAMETER	PART No.	LENGTH	PACK
8mm (5/16")	HH82	2 metres	Plastic Bag
	HH810	10 Metres	Box
	HH820	20 metres	Box
	HH850	50 metres	Coil
9.5mm Thin Wall thickness (3mm)	HH10TWX20	20 metres	Box
10mm (3/8")	HH102	2 metres	Plastic Bag
	HH1010	10Metres	Box
	HH1020	20 metres	Box
	HH1050	50 metres	Coil
12.7mm (1/2")	HH1272	2 metres	Plastic Bag
	HH12710	10 metres	Box
	HH12720	20 metres	Box
	HH12750	50 metres	Coil
15.9mm (5/8")	HH1592	2 metres	Plastic Bag
	HH15910	10 metres	Box
	HH15920	20 metres	Box
	HH15940	40 metres	Spool
17.5mm (11/16")	HH1752	2 metres	Plastic Bag
	HH17510	10 metres	Box
	HH17520	20 metres	Box
19mm (3/4")	HH192	2 metres	Plastic Bag
	HH1910	10 metres	Box
	HH1920	20 metres	Box
25.4mm (1")	HH2545	5 metres	Coil



## FUEL HOSE

Mackay Fuel Hose is made from petroleum resistant rubber to conform to Spec. SAE J30 R6. This hose is suitable for use with leaded and unleaded petrol, diesel/fuel, lubricating oil and fuel vapour.

**It is not suitable for Fuel Injection or Brake Fluid applications.**

**CAUTION: fuel hoses should be shielded and routed away from Exhaust Manifolds / Pipes.**

ID	PART No	LENGTH	PACK	BURST PRESSURE (MIN)	WORKING PRESSURE (MAX)
4mm (5/32")	FH1004x2	2 metres	Card/Skin Pack	1720Kpa (250 PSI)	340Kpa (50 PSI)
	FH1004x10	10 metres	Box		
	FH1004x20	20 metres	Box		
	FH1004x50	50 metres	Coil		
5mm (3/16")	FH1005x2	2 metres	Card/Skin Pack	1720Kpa (250 PSI)	340Kpa (50 PSI)
	FH1005x10	10 metres	Box		
	FH1005x20	20 metres	Box		
	FH1005x50	50 metres	Coil		
6mm (1/4")	FH1006x2	2 metres	Card/Skin Pack	1720 Kpa (250 PSI)	340 Kpa (50 PSI)
	FH1006x10	10 metres	Box		
	FH1006x20	20 metres	Box		
	FH1006x50	50 metres	Coil		
8mm (5/16")	FH1008x2	2 metres	Card/Skin Pack	1720 Kpa (250 PSI)	340 Kpa (50 Psi)
	FH1008x10	10 metres	Box		
	FH1008x20	20 metres	Box		
	FH1008x50	50 metres	Coil		
10mm (3/8")	FH1010x2	2 metres	Card/Skin Pack	1200 Kpa (174 PSI)	240Kpa (35 PSI)
	FH1010x10	10 metres	Box		
	FH1010x20	20 metres	Box		
	FH1010x50	50 metres	Coil		
13mm (1/2")	FH1013x2	2 metres	Card/Skin Pack	1200 Kpa (174 PSI)	240 Kpa (35 PSI)
	FH1013x10	10 metres	Box		
	FH1013x20	20 metres	Box		
	FH1013x50	50 metres	Coil		



## FUEL HOSE (Submersible - In-Tank Applications)

Mackay Submersible Fuel Hose is designed for constant fuel contact on the inside and outside. Made from Nitrile PVC and reinforced with Aramide fibre. This superior fuel hose is suited for In-Tank applications

**It is not suitable for Fuel Injection or Brake Fluid applications.**

ID	Part No	Length	Pack
8mm	FHIT8x1	1 metre	Bag
	FHIT8x20	20 metre	Box
10mm	FHIT10x20	20 metre	Box

## POWER BRAKE VACUUM HOSE

Mackay Power Brake Vacuum Hose is a light duty hose designed for vacuum brake applications only. Mackay Brake Vacuum hose conforms to specification SAE J 1403L.

**(Not suitable for Brake Fluid Applications)**

ID	PART No.	LENGTH	PACK
8.7mm(11/32)	BVH902	2 metres	Bag
	BVH905	5 metres	Bag
	BVH910	10 metres	Box
12mm(15/32)	BVH1202	2 metres	Bag
	BVH1205	5 metres	Bag
	BVH1210	10 metres	Box

## FUEL INJECTION HOSE

Mackay Fuel Injection Hose consists of a Fluoroelastomer inner lining which gives protection against petrol, oxidised petrol, ethanol extended petrol and diesel fuel. This is covered by a tube to resist chemical attack and reinforced with braided yarn. This, in turn, is covered by an outer layer of HYPALON which is heat and ozone resistant. Mackay Fuel injection hose conforms to specification SAE J 30R9.

Burst pressure (Min.) 6.2Mpa (900 psi)

**(Not suitable for Brake Fluid Applications)**

ID	PART No.	LENGTH	PACK
6.3 mm (1/4)	FIH6502	2 metres	Bag
	FIH6505	5 metres	Bag
	FIH6510	10 metres	Box
8 mm (5/16)	FIH802	2 metres	Bag
	FIH805	5 metres	Bag
	FIH810	10 metres	Box
9.5 mm (3/8)	FIH9502	2 metres	Bag
	FIH9505	5 metres	Bag
	FIH9510	10 metres	Box

## TRANSMISSION COOLER & POWER STEERING RETURN HOSE

Mackay Transmission Cooler and Power Steering Return Hose is formulated from compounds based on the Company's OE experience. The hose is heat resistant to 135 degrees Celsius and conforms to specification SAE J 189.

Burst pressure (Min.) 6.9Mpa

**(Not suitable for Brake Fluid Applications)**

ID	PART No.	LENGTH	PACK
8 mm (5/16)	TPH802	2 metres	Bag
	TPH805	5 metres	Bag
	TPH810	10 metres	Box
9.5mm(3/8)	TPH1002	2 metres	Bag
	TPH1005	5 metres	Bag
	TPH1010	10 metres	Box

## RADIATOR OVERFLOW HOSE

Low pressure non reinforced hose made from EPDM, providing resistance to coolant additives and heat and ozone.

Suitable for radiator (water) overflow applications.

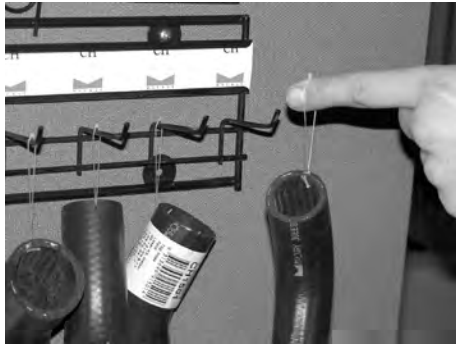
ID	PART No.	LENGTH	PACK
8mm (5/16)	OFH801	1 metre	Bag
8mm (5/16)	OFH810	10 metres	Box
10mm (3/8)	OFH1001	1 metre	Bag
10mm (3/8)	OFH1010	10 metres	Box

## WIPER TUBING

Mackay Wiper Tubing is manufactured from EPDM which is resistant to ozone, heat and water swell. The tubing meets Spec. SAE J1037. This tubing is **not** suitable for conveying petroleum products.

ID	PART No.	LENGTH	PACK
3.2mm	WT3.2X2	2 metres	Bag
	WT3.2X10	10 metres	Box
4.8mm	WT4.8X2	2 metres	Bag
	WT4.8X10	10 metres	Box
6.3mm	WT6.3X2	2 metres	Bag
	WT6.3X10	10 metres	Box

## HOSE MERCHANDISERS

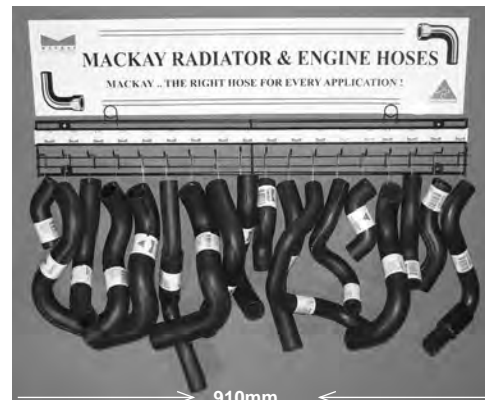


Mackay offer several hose merchandisers to assist customers to increase sales of Mackay hoses. These merchandisers are designed to be used as a shop front display or to keep your entire hose range organised behind the counter. All merchandisers utilise the unique Mackay "Hang Ups"™ plastic strap fitted to Mackay Hoses

### CHM1- WALL MOUNTED MERCHANDISER

This eye catching merchandiser includes an attractive header board; two wall mounted racks with 18 hooks per rack and part number inserts to effectively display the most popular Mackay hoses in your sales area. **Included with this merchandiser are 36 of the most popular Australian Application hoses in the Mackay range** and the latest edition of the Mackay Radiator and Engine Hose Catalogue.

Part No. CHM1



This merchandiser racks are also available separately, without the hose selection.

**Part No. HR1** Contains 1 x 18 hook rack

**Part No. CHMB** Contains 1 Header Board

### HR5- FREE STANDING MERCHANDISER



The HR5 is a free standing Merchandiser suitable for shop front display or behind the counter use. The HR5 includes 6 HR3 racks, additional HR3 racks can easily be attached to increase the range. (up to 16 HR3 racks can be attached which covers 224 Part Numbers) **Stock is not included.**

## HOSE MERCHANDISERS

### SOLVE your HOSE STORAGE PROBLEMS

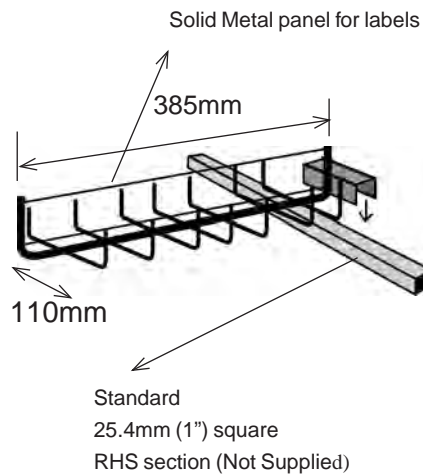
#### MACKAY HOSE RACK - HR3

The **Mackay HR3 rack** now solves the **problem** of hose storage and **organisation** using a **minimum of space**.

The **HR3 rack** is **ideal** for **distributors, retailers and trade users** and can be **adopted** for both **behind the counter bulk storage** requirements and **shop front display** purposes.

Each HR3 metal rack can hold 14 different Mackay hoses, the racks simply slide on to a standard 25.4 mm (1" inch) square tube giving you total flexibility, you can **install them anywhere, a back wall, inside a parts bin** or incorporate it into your **shop front display**. You can space them out by simply sliding them along to suit your space needs.

There is now **no excuse for lost sales, keep the extensive range of Mackay hoses at hand** and organised and **stay ahead of your competitors**.



## COOLING SYSTEM HOSE MAINTENANCE

Mackay's expertise in the design and engineering of Automotive hoses spans over 70 years, supplying the very first motor cars including all Australian car manufacturers. Mackay is a 100% Australian Owned company.

At the Mackay hose plant based in Melbourne, Mackay utilise leading edge rubber technology and compounds, supported by in-house processes from rubber mixing to final product. This ensures hoses are made to the strict specifications required for the advanced motor vehicles of the 21st century.

In conventional water-cooled engines, hoses are an integral part of the cooling system and in fact are a critical component in safeguarding the engine from excessive heat build - up causing premature and expensive engine failure.

The hose allows for the efficient transfer of coolant between the engine block and radiator. It also eliminates any vibration that may be otherwise transmitted by a rigid connection. In vehicles of today, a hose has to be designed to withstand the stresses of modern, more compact but powerful engines that run hotter and at a higher pressure. Other factors include smaller engine compartments with poor heat dissipation, aggressive coolant additives, and stray (electrochemical) current that may be conducting through the cooling system.

In short, the smaller but more powerful engines of today work a lot harder than the larger engines that were standard before. More heat is generated, higher burst pressures are required in cooling system components, and hoses have to be made tougher to withstand these demands.

Mackay's research and development chemists have developed new rubber formulations and manufacturing processes that ensure Mackay hoses meet the greater wear and heat demands created by modern engines. Rubber compounds used in automotive hoses today are predominantly synthetic rubber formulations.

Synthetic rubber offers:

- Excellent resistance to high temperatures
- Resists chemical attack (oils, fuels etc.)
- Excellent Ozone resistance
- Good resistance to abrasion
- High resistance to vibration

### Hose Inspection and Replacement

Since hoses are so vital in maintaining the engine at optimum operating temperature, and prevent costly damage by controlling engine overheating, regular inspection and maintenance of cooling system hoses should be conducted at least every six months. It is also recommended that all coolant hoses be replaced whenever the system is being flushed and coolant replaced, about every 2-3 year's dependent on the vehicle's use.

#### **Caution:**

***It is important for your safety that the engine is turned off and has cooled down and cooling system depressurised before you proceed with an inspection. The best way to inspect a hose is to squeeze it firmly along its entire length.***

### Heat

If the hose has a 'hard feel' or has visible cracks along the length it has been affected by excessive heat. A heat-damaged hose also may have a glossy cover along with cracks, in either case, replace the hose. A good hose should be resilient, yet flexible. Heat deterioration can also produce hidden damage to the reinforcement over time that can cause the hose to burst and fail. Therefore an externally good-looking hose may be susceptible to failure due to hidden reinforcement deterioration. The possibility of hidden reinforcement failure is one of the best reasons for replacing hoses regularly. If the hose is near a radiant heat source such as the exhaust manifold for example it can soon become hardened and brittle. Ensure heat shields are in place to protect the hose.

## Oil/Chemical

Oil is the worst enemy of a rubber hose. A hose damaged by oil can look swollen, or have a soft and spongy feel. Sometimes oil damage can start from the inside of the hose, check the transmission system for leaks into the radiator from the transmission cooler or from a cracked engine block. Many automotive coolants once carried oil to act as a rust inhibitor and water pump lubricant. Coolants with oil-based lubricant or rust inhibitor should be avoided.

## Ozone Attack

All Mackay coolant hoses are made from EPDM compounds that are highly resistant to ozone attack. Hoses made from some other rubber compounds may be subject to ozone deterioration. Ozone is an oxygen compound found in small quantities in the atmosphere, it is also a by-product common near the alternator and other electrical sources in the engine compartment. It attacks the rubber around stress points (near any bends in the hose or around hose clips) ozone attack can be seen when small parallel cracks appear at the point of stress.

## Abrasion

Visually check the hose for scuff marks, gouges or other abrasion damage on the cover. Abrasion damage can occur from fan blades, spinning pulleys and belts, or road debris. Splitting around hose clamps is also common.

Any potential contact points that may cause abrasion damage must be protected, either by shielding the hose or rerouting it.

## Changing a Hose

When changing a hose, loosen the clamp until it can be moved along the hose and slide the hose off. If the hose is stuck to the fitting, cut from the end of the hose to the beading with a suitable knife; do not lever the hose off with a screw driver as this can damage the radiator fitting. Hoses with quick-connect couplings can be removed by compressing the release tabs.

Brush off the fittings with a wire brush and wipe over with a cloth. Wet inside the end of the hose with water to make the push fit easier. Slip both clips over the other end before this is fitted to the radiator, or if the replacement hose has quick-connect couplings push in until locked in place.

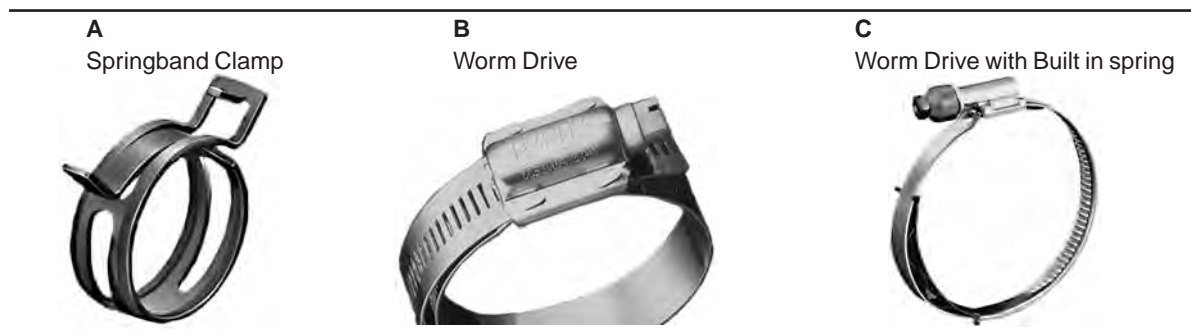
## Coolant Specifications

Always use coolant as specified by the vehicle manufacturer.

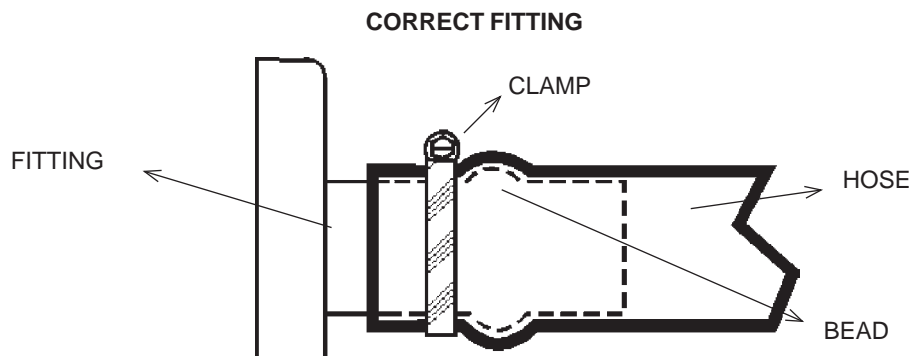
EPDM (Ethylene Propylene type rubbers) is the main synthetic rubber used, however there are numerous formulations of EPDM, each one specially formulated to satisfy a specific application demand. A radiator hose for one car can be made from an entirely different EPDM formulation to another model or make. The construction of a typical coolant hose comprises of three layers, first there is the tube, (this is what the coolant liquid travels through). Over the tube there is a reinforcement material. The reinforcement fibres are knitted onto the tube to provide strength and prevent the tube from bursting under pressure. There are several different types of reinforcement material used dependent on the application of a particular hose. Aramid fibre reinforcements used today such as Kevlar and Twaron provide superior burst strength capacity and heat ageing characteristics right through the service life of the product. (In fact Kevlar is so strong it is also used as reinforcement in bulletproof vests). For applications where a higher heat resistance is required a special fibre known as Nomex is used. Other reinforcement fibres used also include Rayon and Nylon. The burst strength of a hose is determined by the type of reinforcement, the number of knits per square area and the type of knitting pattern. Once again this could vary dependent on the application requirements of the hose.

Finally, there is the outer cover; that is extruded over the tube and reinforcement fibres and helps hold the hose together whilst protecting the reinforcement fibres from dirt, grease and moving parts. The outer cover is also a vital part of the hose construction and has to satisfy the requirements of a particular application

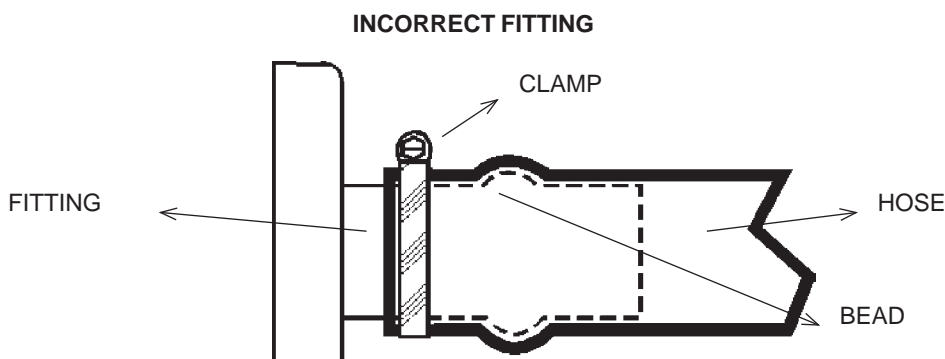
Hose clamps may vary in design (see below).



Several different clamp designs are available in the market. The most common are the Springband and worm drive designs. It is recommended that new clamps be fitted when ever a hose is replaced as they usually lose tension over time. (Clamp details courtesy of Norma Pacific Pty Limited)



The clamp should be as close to the bead as possible, but not on it. Allow approximately a minimum of 5mm between the clamp and the hose end. Tighten the clamp, but not enough to strip the worm. Top up the coolant system and run the engine for about 15 minutes and observe for leaks. When cold nip up the clamps to allow for set of the rubber. Flush the coolant system every two years and check hoses.



The positioning of the clamp, butted up to the bead is important to prevent ingress of coolant over the bead and onto the fitting. This will reduce corrosion around the neck of the fitting. Make sure to top up with coolant approved by O.E. manufacturers and their instructions.

Mackay Consolidated has been supplying high quality rubber hoses to the automotive aftermarket for over 60 years. It is false economy to purchase low price replacement hoses, as premature failure can result in expensive engine repairs. Protect your valuable investment by using only Mackay replacement hoses, made in Australia to exacting standards.