

**MONOBLOCK DIRECTIONAL CONTROL VALVES**



**SINGLE SPOOL**

**NEW!**

- Double acting
- Max. continuous pressure: 2,500 PSI
- Max. continuous flow: 20 GPM
- Inlet/Outlet Ports: 3/4" NPT
- Work Ports: 1/2" NPT

**8126070** – Wt. 8.5 lbs. .... **109<sup>99</sup>**



**ROTARY ACTUATED**

**NEW!**

- This valves handle rotates 90 degrees each side of center. There is no spring centering so the handle will remain in whatever position it is placed
- The valve has excellent flow metering characteristics which makes it ideal for motor or cylinder applications where accurate speed control is required
- Max. continuous pressure: 2,500 PSI
- Max. continuous flow: 20 GPM
- Inlet/Outlet ports: 3/4" NPT
- Work Ports: 1/2" NPT

**8126088** – Wt. 8.0 lbs. .... **199<sup>99</sup>**

**EUROPEAN DESIGN** by



**SINGLE SPOOL**

Features	Benefits
13 GPM @ 3,200 PSI	Meets demand of higher flow actuators
Compact Size	Designed for where weight and space restrictions are specified
Convertible to single acting, motor spool, and detent positioning	Easily adaptable to fit a wide variety of applications

**Features:**

- Max. continuous pressure: 3,200 PSI
- Max. continuous flow: 13.1 GPM
- Inlet/outlet and work port size: #10 ORB
- Relief valve: preset @ 2,030 PSI, adjustable from 1,450 to 3,625 PSI
- Designed to control a double acting cylinder or a reversible hydraulic motor

**8003849** – Wt. 6.5 lbs. .... **179<sup>99</sup>**

SEE PAGE 18 FOR AVAILABLE FLEXIBLE VALVE CONFIGURATION OPTIONS.

*Child Find*  
M A N I T O B A



**MISSING**

Have you seen this child?

**SHELLY ANNE BACSU**

Date of birth: April 7, 1967

Hair: Brown

Eyes: Brown

Missing since: May 3, 1983

Missing from: Hinton, Alberta

**1-800-387-7962**

to report on a missing child anywhere in Canada

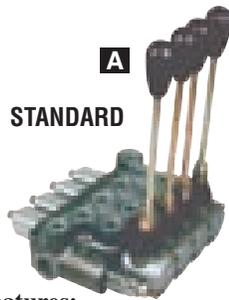
*All calls confidential - No name required.*

**A missing child is everyone's responsibility.**

## BM SERIES MONOBLOCK DIRECTIONAL CONTROL VALVES

EUROPEAN DESIGN by 

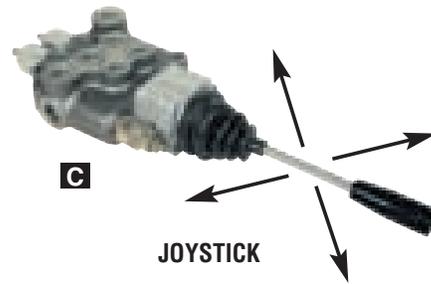
DIRECTIONAL CONTROL VALVES



**A**  
STANDARD



**B**  
DETENT FLOAT POSITION



**C**  
JOYSTICK

**Features:**

- Standard 3-position, 4-way/spring return to neutral unless otherwise stated
- Open centre
- Max. return line pressure: 1,100 PSI
- Relief valve pre-set @ 2,100 PSI, adjustable from 1,500 PSI to 3,750 PSI
- Control handles can be mounted in vertical or horizontal position
- Max. continuous pressure: 3,600 PSI

### BM 20 SERIES

Max. continuous flow	4.5 GPM
Peak flow	6.6 GPM
Top inlet/outlet and work ports	#6 ORB
Side inlet/outlet ports	#8 ORB

		Wt. (lbs.)	ITEM	PRICE
<b>A</b>	Single spool	3.7	1249531	149.99
<b>A</b>	Double spool	5.5	1249549	249.99
<b>A</b>	Three spool	7.5	1249556	349.99



**BM 20**

### BM 30 SERIES

Max. continuous flow	9 GPM
Peak flow	12 GPM
Top inlet/outlet and work ports	#8 ORB
Side inlet/outlet ports	#8 ORB

		Wt. (lbs.)	ITEM	PRICE
<b>A</b>	Single spool	4.5	1249598	119.99



**BM 30**

### BM 40 SERIES

Max. continuous flow	9 GPM
Peak flow	12 GPM
Top inlet/outlet and work ports	#8 ORB
Side inlet/outlet ports	#10 ORB

		Wt. (lbs.)	ITEM	PRICE
<b>A</b>	Single spool	5.6	1249721	169.99
<b>A</b>	Double spool	8.3	1249739	249.99
<b>A</b>	Three spool	11.4	1249747	349.99
<b>A</b>	Four spool	14.3	1249754	419.99
<b>B</b>	Double spool (float/standard)	8.9	1249713	269.99
<b>C</b>	Double spool with joystick	8.4	8006338	349.99



**BM 40**

### BM 70 SERIES

Max. continuous flow	17 GPM
Peak flow	24 GPM
Top inlet/outlet and work ports	#10 ORB
Side inlet/outlet ports	#12 ORB

		Wt. (lbs.)	ITEM	PRICE
<b>A</b>	Single spool	10.4	1249796	249.99
<b>A</b>	Double spool	16.6	1249804	369.99
<b>A</b>	Three spool	21.0	1249812	479.99
<b>C</b>	Double spool with joystick	15.8	1249788	499.99

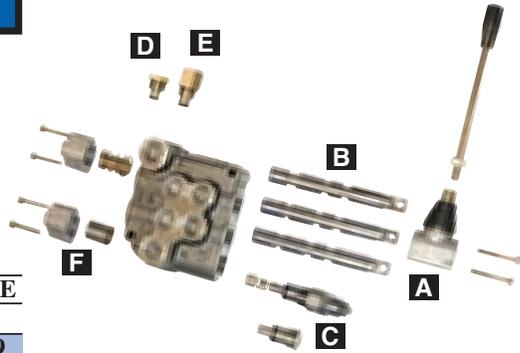


**BM 70**

**ACCESSORIES FOR  
HYDRAULIC CONTROL VALVES**

FULLY BACKED BY  
OUR ROYAL  
SERVICE PROMISE

EUROPEAN  
DESIGN by



Accessories are shown as optional parts for a standard valve.  
NOTE: ALL THESE ACCESSORIES ARE EASILY FIELD INSTALLED.

	ITEM	PRICE
<b>A) SINGLE ACTING SPOOLS</b>		
BM20 valves	1259027	24.99
BM30/40, FM55 valves	1259092	26.99
BM70 valves	1259159	38.99
<b>B) MOTOR SPOOLS</b>		
BM20 valves	1259019	26.99
BM30/40, FM55 valves	1259084	27.99
BM70 valves	1259142	38.99
<b>C) RELIEF VALVE PLUGS</b>		
BM20 valves	1250032	19.99
BM30/40, FM55 valves	1259076	19.99
BM70 valves	1250033	24.99
<b>D) CLOSED CENTRE PLUGS</b>		
BM20 valves	1250107	15.99
BM40 FM55 valves	1259068	19.99
BM70 valves	1259134	19.99

	ITEM	PRICE
<b>E) POWER BEYOND ADAPTERS</b>		
BM20 valves	1259001	19.99
BM40, FM55 valves	1259050	21.99
BM70 valves	1259126	29.99
<b>F) DETENT KITS</b>		
BM20 valves	1259035	22.99
BM30/40, FM55 valves	1259100	24.99
BM70 valves	1259167	29.99

**O-RING KITS**

- Replacement valve spool O-rings
- Pkg. of 10
- Wt. 0.2 lbs.
- 8006222 – BM20
- 8006226 – BM30/40, FM55
- 8006227 – BM70



**9<sup>99</sup>**

**HYDRAULIC VALVE  
REMOTE CONTROL SYSTEM**



**INDEMAR**

NEW!

VALVE NOT  
INCLUDED

- The control connects to the front of BLB valves allowing remote operation
- Remote valve control can be mounted up to 9-3/4 ft. away from the hydraulic valve

- H) JOYSTICK REMOTE VALVE CONTROL**
- Shift 2 hydraulic spools with 1 control
  - Weatherproof control can be mounted on interior or exterior of vehicle
- 8000977 – Wt. 3.8 lbs. **149<sup>99</sup>**
- I) SINGLE AXIS REMOTE VALVE CONTROL**
- Units can be mounted individually or stacked for multi-spool valves
  - Weatherproof control can be mounted on interior or exterior of vehicle
- 8000986 – Wt. 1.7 lbs. **49<sup>99</sup>**

**J) REMOTE VALVE CONTROL CABLES**

Length	Wt. (lbs.)	ITEM	PRICE
39"	0.7	8000995	54.99
59"	1.3	8001002	59.99
78"	1.7	8001020	64.99
118"	1.7	8001057	74.99
157"	3.2	8001066	84.99

**K) VALVE CONNECTION KITS**

Manuf.	Valve series	Wt. (lbs.)	ITEM	PRICE
BLB	BM20	0.3	8031863	21.99
BLB	BM40	0.2	8001075	23.99
BLB	BM70	0.2	8001084	23.99
Prince	RD5000	1.0	8145203	44.99

# MONOBLOCK DIRECTIONAL HYDRAULIC CONTROL VALVES

SEE PAGE 20 FOR VALVE REPLACEMENT PARTS & ACCESSORIES.

## RD 2500 SERIES

### Specifications:

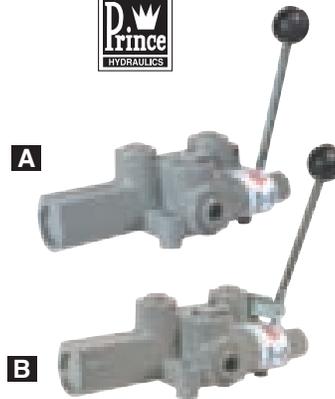
- Max. continuous pressure: 3,000 PSI
- Max. continuous flow: 20 GPM
- Relief preset at 1,500 PSI and adjustable from 500 to 3,000 PSI
- Max. return line pressure: 150 PSI
- Ports (NPT): 3/4" inlet/outlet, 1/2" work ports
- Open centre (Can be converted to closed centre)

### A) SINGLE SPOOL

3-position, 4-way.  
8107179 – Wt. 9.9 lbs. .... **129<sup>99</sup>**

### B) SINGLE MOTOR SPOOL WITH DETENT

• 3-position, 4-way  
• Workports are connected to tank in the neutral position  
8107187 – Wt. 9.8 lbs. .... **149<sup>99</sup>**



## RD 5000 SERIES

### Specifications:

- Max. continuous pressure: 3,000 PSI
- Relief preset at 2,000 PSI and adjustable from 1,500 to 3,000 PSI
- Max. return line pressure: 500 PSI
- Ports (NPT): 3/4" inlet/outlet, 1/2" work ports
- Open centre
- In the detented 4th position (float) the work ports are connected to tank, allowing the cylinder to float or the motor to freewheel
- Can be converted to closed centre or power beyond (with optional conversion plugs)

### C) SINGLE SPOOL

• 3-position, 4-way  
• Max. continuous flow: 30 GPM  
8107328 – Wt. 14.7 lbs. .... **179<sup>99</sup>**

### D) 2-SPOOL

• 3-position, 4-way  
• Max. continuous flow: 25 GPM  
8107344 – Wt. 23.9 lbs. .... **269<sup>99</sup>**

### E) 3-SPOOL

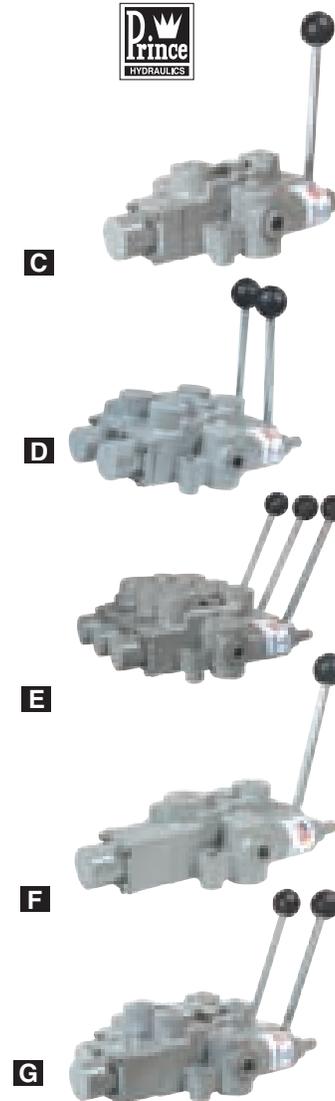
• 3-position, 4-way  
• Max. continuous flow: 25 GPM  
8107351 – Wt. 35.5 lbs. .... **399<sup>99</sup>**

### F) SINGLE FLOAT SPOOL

• 4-position, 4-way  
• Max. continuous flow: 30 GPM  
8107310 – Wt. 15.6 lbs. .... **199<sup>99</sup>**

### G) 2-SPOOL WITH FLOAT SPOOL

• 1st spool 4-position, 4-way,  
2nd spool 3-position, 4-way  
• Max. continuous flow: 30 GPM  
8107336 – Wt. 24.7 lbs. .... **299<sup>99</sup>**



**REPLACEMENT PARTS & ACCESSORIES FOR RD 2500 SERIES VALVES**



**HANDLE KIT**  
8001688 – Wt. 0.4 lbs. .... **14<sup>99</sup>**



**REPLACEMENT SPOOL SEAL KIT**  
8107435 – Wt. 0.1 lbs. .... **4<sup>99</sup>**

**REPLACEMENT PARTS & ACCESSORIES FOR RD 5000 SERIES VALVES**



**A) CLOSED CENTRE PLUG**  
8107393 – Wt. 0.6 lbs. .... **17<sup>99</sup>**  
**B) POWER BEYOND ADAPTER**  
8107385 – Wt. 0.3 lbs. .... **17<sup>99</sup>**  
**C) RELIEF VALVE PLUG**  
8107443 – Wt. 0.3 lbs. .... **18<sup>99</sup>**  
**D) 3-POSITION DETENT KIT**  
8107369 – Wt. 0.8 lbs. .... **49<sup>99</sup>**



**E) HANDLE KIT**  
8107419 – Wt. 0.4 lbs. .... **11<sup>99</sup>**  
**F) JOYSTICK HANDLE KIT**  
8107401 – Wt. 3.4 lbs. .... **159<sup>99</sup>**  
**G) SINGLE SPOOL SEAL KIT**  
8107427 – Wt. 0.1 lbs. .... **9<sup>99</sup>**

**HYDRAULIC KICK-OFF VALVES**

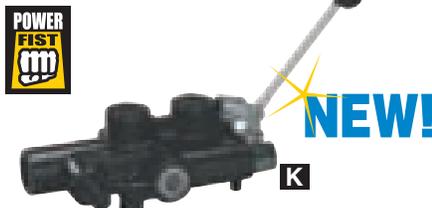
- Ideal for logsplitters
- Spring return one direction, detented the other
- Detented return position allows hands-free operation while the cylinder is retracting and automatically shifts the spool to neutral at the end of the cylinder's stroke
- Open centre



**H) Max. continuous pressure: 2,500 PSI**  
• Relief set at 2,000 PSI  
• Max. continuous flow: 20 GPM  
• Work Ports: 1/2" NPT  
• Inlet/Outlet Ports: 3/4" NPT  
1242296 – Wt. 9.0 lbs. .... **129<sup>99</sup>**



**I) HANDLE BRACKET**  
Replacement handle bracket for 1242296.  
7120082 – Wt. 0.4 lbs. .... **6<sup>95</sup>**



**J) Max. continuous pressure: 2,750 PSI**  
• Relief set at 2,250 PSI  
• Max. continuous flow: 25 GPM  
• Kick-off pressure adjustable from 1,000 to 3,000 PSI  
• Work ports: 1/2" NPT  
• Inlet/Outlet ports: 3/4" NPT  
8107203 – Wt. 10.2 lbs. .... **119<sup>99</sup>**

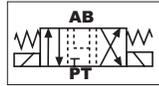
**K) Max. continuous pressure: 2,750 PSI**  
• Max. continuous flow: 25 GPM  
• Kick-off pressure adjustable from 1,000 to 3,000 PSI  
• Relief valve set at 2,200 PSI  
• Ports: 3/4" NPT inlet/outlet, 1/2" NPT work ports  
8123176 Wt. 10.3 lbs. .... **99<sup>99</sup>**

## SOLENOID OPERATED VALVES

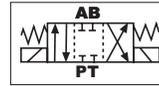
### D03 & D05 DIRECTIONAL CONTROL VALVES

#### D03 SPECIFICATIONS:

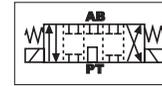
- Max. continuous pressure: 5,000 PSI
- Max. continuous flow: 16 GPM
- \*Must be used with subplate (8051757) or an equivalent.



Motor Spool



Closed Centre



Tandem Centre

#### A) 12 VDC ACTIVATION

Wt. 4.6 lbs.

8046815 – MOTOR SPOOL

8046831 – TANDEM CENTRE

8046807 – CLOSED CENTRE ..... **149<sup>99</sup>**

#### B) 110 VAC ACTIVATION

Tandem centre with din connectors.

8051609 – Wt. 4.6 lbs. .... **149<sup>99</sup>**

#### D05 SPECIFICATIONS:

- Max. continuous pressure: 4,500 PSI
- Max. continuous flow: 28 GPM
- \*Must be used with subplate (8093239) or an equivalent.

#### C) 12 VDC ACTIVATION

Wt. 12.9 lbs.

8093080 – MOTOR SPOOL

8093072 – TANDEM CENTRE

8093106 – CLOSED CENTRE ..... **159<sup>99</sup>**

### DIN CONNECTOR

Replacement for 110 VAC D03 solenoid valve.

8045791 – Wt. 0.1 lbs. .... **6<sup>99</sup>**

### MODULAR RELIEF VALVES

- Mounts between the solenoid valve and subplate assembly
- Protects against over-pressuring of the valve and the actuators it controls
- Adjustable pressure range: 1,000 to 3,000 PSI

#### D) D03 RELIEF VALVE

Max. continuous flow: 10 GPM\*

8051732 – Wt. 3.5 lbs. .... **99<sup>99</sup>**

#### E) D05 RELIEF VALVE

Max. continuous flow: 18.5 GPM\*

8093148 – Wt. 7.6 lbs. .... **99<sup>99</sup>**

\*Rated relief to tank flow.

### SOLENOID VALVE SUBPLATES

Mounts solenoid valves to provide inlet/outlet and workport porting.

#### F) D03 SUBPLATE

3/8" NPT ports on both side and bottom.

8051757 – Wt. 2.4 lbs. .... **39<sup>99</sup>**

#### G) D05 SUBPLATE

1/2" NPT ports on both side and bottom.

8093239 – Wt. 9.0 lbs. .... **54<sup>99</sup>**

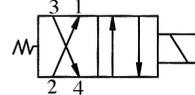


**SOLENOID OPERATED VALVES**



- Max. continuous pressure: 3,000 PSI
- Anodized aluminum bodies
- 1 pc. cartridge housing ensures internal concentricity
- Weatherproof, high wattage 12 VDC coils

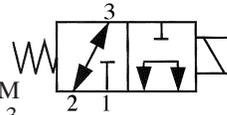
**2-POSITION, 4-WAY REVERSING SOLENOID SPOOL VALVE**



- Max. continuous flow: 9 GPM
- Free flow between ports 2 and 1, 3 and 4 when the solenoid is de-energized
- Free flow between ports 2 and 3, 1 and 4 when the solenoid is energized
- Designed to operate double acting cylinders, pilot circuits and bi-directional motors
- Ports: #8 ORB

8033353 – Wt. 1.9 lbs. .... **139<sup>99</sup>**

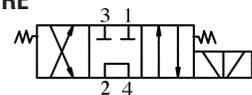
**2-POSITION, 3-WAY SOLENOID SPOOL VALVE**



- Max. continuous flow: 8.5 GPM
- Free flow between ports 2 and 3 when the solenoid is de-energized
- Free flow between ports 1 and 2 when the solenoid is energized
- Acts similar to a 3-way 2-position manual selector valve
- Ports: #8 ORB

8033344 – Wt. 1.8 lbs. .... **119<sup>99</sup>**

**3-POSITION, 4-WAY TANDEM CENTRE SOLENOID SPOOL VALVE**

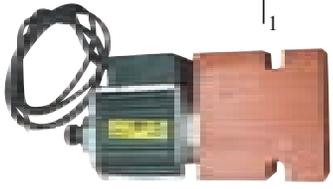
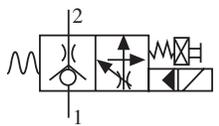


- Max. continuous flow: 7.0 GPM
- Free flow between ports 2 and 1, 3 and 4 when the push solenoid is de-energized
- Free flow between ports 2 and 3, 1 and 4 when the pull solenoid is energized
- Designed to operate double acting cylinders, pilot circuits and bi-directional motors, etc.
- When both solenoids are de-energized, work ports are blocked and ports 2 and 4 are connected
- Ports: #8 ORB

8046688 – Wt. 2.8 lbs. .... **229<sup>99</sup>**

**OPTIONAL 115 VAC SOLENOID COIL**

0.26 amps with DIN connector.  
8033371 – Wt. 0.6 lbs. .... **44<sup>99</sup>**



**2-POSITION, 2-WAY SOLENOID POPPET VALVE with FLOW CONTROL**

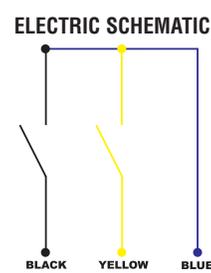
- Max. continuous flow: 2.5 GPM
- Normally closed
- Blocked flow from ports 1 to 2, restricted flow from 2 to 1 when de-energized
- Pressure compensated adjustable flow from 1 to 2 when energized (no reverse flow)
- Ports: #6 ORB

8106387 – Wt. 1.0 lbs. .... **119<sup>99</sup>**

**HAND CONTROL with MICRO SWITCHES**



MICROSWITCH SPECIFICATIONS										
Item	Rated Voltage (V)	Non-inductive Load (A)				Inductive Load (A)				Inrush Current
		Resistive Load		Lamp Load		Inductive Load		Motor Load		
Type		NC	NO	NC	NO	NC	NO	NC	NO	
16A	250 VAC									40 A max.
	8 VDC	16	2	10	3					
	30 VDC	18	4	10	6					
	125 VDC	10	4	10	4					
	250 VDC	0.6	0.1	0.6	0.1					
		0.3	0.05	0.3	0.05					



- Internal 3/8" threading for mounting
  - Normally open, single pole, single throw, momentary switches
  - Switch is pre-wired with the leads extending 18" past the end of the handle
- 8002552 – Wt. 0.4 lbs. .... **54<sup>99</sup>**

## P.T.O. CABLES & ACCESSORIES

### A) P.T.O. & VALVE CONTROL CABLES

- 5" travel
- 1/2" - 20 thread mount
- 0.091" dia. oil tempered steel cable
- 0.375" dia. conduit

#### 10 FT. LONG

3890492 – Wt. 2.5 lbs. .... **26<sup>99</sup>**

#### 15 FT. LONG

3890493 – Wt. 3.0 lbs. .... **32<sup>99</sup>**

### B) KNOB

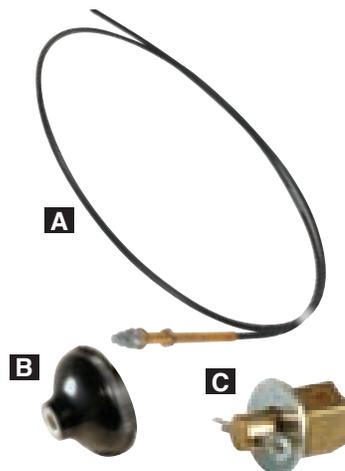
- 2" dia. black knobs for use on P.T.O. cable, etc.
- 3/8" 24-thread

3891348 – Wt. 0.1 lbs. .... **3<sup>99</sup>**

### C) BOWDEN PIN

Attaches cable end to 3/16" thick lever with 1/4" hole.

3890502 – Wt. 0.1 lbs. .... **4<sup>19</sup>**



### ROD ENDS



Wt. 0.1 lbs.

Thread Size	ITEM PRICE	ITEM PRICE
1/4" - 28 NF	3870009 3.29	3870020 8.99
5/16" - 24 NF	3870010 3.99	3870021 9.99
3/8" - 24 NF	3870012 5.49	3870022 11.99
1/2" - 20 NF	3870013 9.99	3870023 19.99



Wt. 0.1 lbs.

Thread Size	Hole Dia.	ITEM PRICE	ITEM PRICE
1/4" - 28 NF	1/4"	3870025 11.99	3870015 8.99
5/16" - 24 NF	5/16"	3870026 12.99	3870016 9.99
3/8" - 24 NF	3/8"	3870027 14.99	3870017 11.99
1/2" - 20 NF	1/2"	3870028 24.99	3870018 22.99

### ADJUSTABLE YOKE with PIN



#### 1/4" - 28 NF THREAD

a: 2", b: 1-1/4", c: 9/32".  
3880036 – Wt. 0.1 lbs. .... **4<sup>49</sup>**

#### 5/16" - 24 NF THREAD

a: 2-1/4", b: 1-7/16", c: 11/32".  
3880044 – Wt. 0.1 lbs. .... **4<sup>69</sup>**

#### 3/8" - 24 NF THREAD

a: 2-1/2", b: 1-5/8", c: 7/16".  
3880051 – Wt. 0.2 lbs. .... **4<sup>79</sup>**

#### 1/2" - 20 NF THREAD

a: 3", b: 1-7/8", c: 9/16".  
3880069 – Wt. 0.4 lbs. .... **5<sup>99</sup>**

# PAL Hydraulics

## ONGOING COMMITMENT TO TRAINING

PAL Hydraulics currently offers a four tier training program that is available to our hydraulic team members. The courses offered include Hydraulic Specialist 1, 2 and 3 and Mobile Hydraulic Technician (MHT). The MHT certification is an industry recognized course offered through the Fluid Power Society.

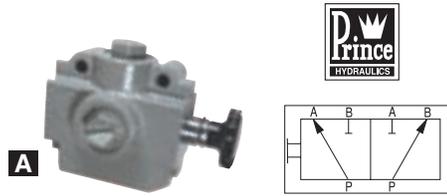
These courses are all administered by our corporate trainer Angrej Virk who is a certified Mobile Hydraulic Technician, Hydraulic Specialist, and



Pneumatic Specialist. Angrej also recently became an accredited Trainer for the aforementioned courses.

**MANUAL OPERATED  
SELECTOR VALVES**

**2-POSITION, 3-WAY  
SELECTOR VALVES**



- Use to direct the incoming flow to either outlet port
- Possible applications include individually controlling 2 unidirectional motors or 2 single acting cylinders with 1 control valve

**A) SELECTOR VALVE**

- Max. continuous pressure: 2,500 PSI
  - Max. continuous flow: 20 GPM
  - Ports: # 8 ORB
- 8107211** – Wt. 4.0 lbs. .... **79<sup>99</sup>**



**B) SELECTOR VALVES**

Model #	Max. Flow (GPM)	Max. PSI	Ports (ORB)	Wt. (lbs.)	ITEM PRICE
D3GF8A	9.5	3,625	8	1.9	<b>8006793 59.99</b>
D3GF10A	15	3,625	10	2.9	<b>8006800 69.99</b>
D3GF12A	25	3,625	12	4.5	<b>8006819 79.99</b>

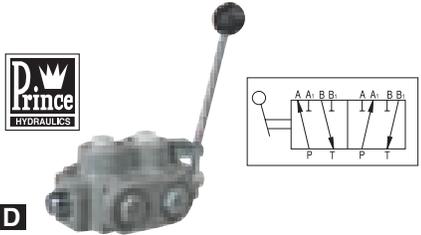
**2-POSITION, 6-WAY SELECTOR VALVES**



- Use to direct 2 incoming flows between 2 sets of outlet ports
- Possible applications include individually controlling 2 double acting cylinders or hydraulic motors with one 4-way 3-position control valve

**C) SELECTOR VALVE**

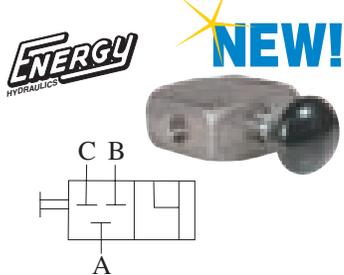
- Max. continuous pressure: 3,625 PSI
  - Max. continuous flow: 9.5 GPM
  - Ports: #8 ORB
- 8006846** – Wt. 3.6 lbs..... **139<sup>99</sup>**



**D) SELECTOR VALVE**

- Max. continuous pressure: 2,500 PSI
  - Max. continuous flow: 40 GPM
  - Ports: #12 ORB
- 8107229** – Wt. 10.9 lbs. .... **129<sup>99</sup>**

**FLOAT POSITION SELECTOR VALVE**



**NEW!**

- This valve can be installed between the directional control valve and actuator to connect both actuator lines to tank when engaged
  - Can be used on tractor blade or bucket circuits where float position is required as well as hydraulic winches where freewheeling is required
  - Max. continuous pressure: 2,500 PSI
  - Max. continuous flow: 20 GPM
  - Ports: 1/2" NPT
- 8126096** – Wt. 4.0 lbs. .... **129<sup>99</sup>**

**TECH TIPS**

**Do NPT fittings work well in high-pressure applications?**

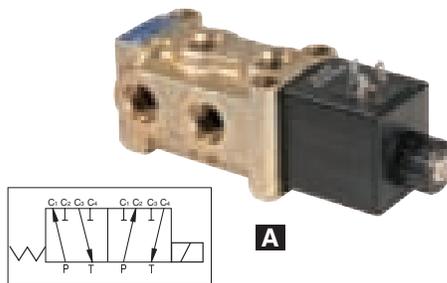
While NPT fittings will work in high-pressure applications they are not the best choice. These fittings are prone to loosening and/or cracking when there is temperature cycling in the system and because the threads are tapered, repeated assembly and disassembly can cause the threads to distort, leading to leakage. Fittings that work better for high-pressure sealing are ORB, JIC or ORFS.

## 12 VDC SOLENOID OPERATED SELECTOR VALVES



### A) 2-POSITION, 6-WAY SELECTOR VALVE

- Use to direct 2 incoming flows between 2 sets of outlet ports
  - Possible applications include operating 2 double acting cylinders or bi-directional motors with one 4-way, 3-position control valve
  - Max. continuous pressure: 4,350 PSI
  - Max. continuous flow: 16 GPM
  - DIN style electrical connector
  - #8 ORB ports
- 8051799** – Wt. 5.6 lbs. .... **249<sup>99</sup>**



## HIGH PRESSURE NEEDLE VALVES



- All steel construction
- Use inline to limit flow within a hydraulic circuit
- Max. continuous pressure: 5,000 PSI

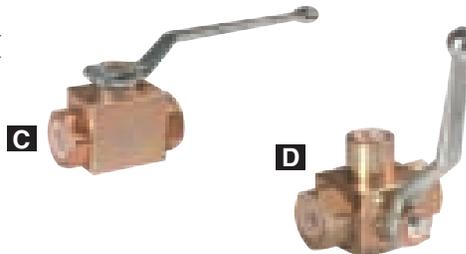
**B) #4 ORB PORTS**  
8051807 – Wt. 0.7 lbs. .... **26<sup>99</sup>**

**B) #6 ORB PORTS**  
8051815 – Wt. 0.7 lbs. .... **29<sup>99</sup>**

**B) #8 ORB PORTS**  
8051823 – Wt. 1.6 lbs. .... **58<sup>99</sup>**

## HIGH PRESSURE BALL VALVES

Body and ball are all steel construction



### HIGH PRESSURE 2-WAY

Max. continuous pressure: 7,250 PSI

**C) #4 ORB PORTS**  
8046625 – Wt. 1.1 lbs. .... **26<sup>99</sup>**

**C) #6 ORB PORTS**  
8046682 – Wt. 1.4 lbs. .... **27<sup>99</sup>**

**C) #8 ORB PORTS**  
8046690 – Wt. 1.7 lbs. .... **29<sup>99</sup>**

**HIGH PRESSURE 3-WAY**  
Max. continuous pressure: 5,075 PSI.

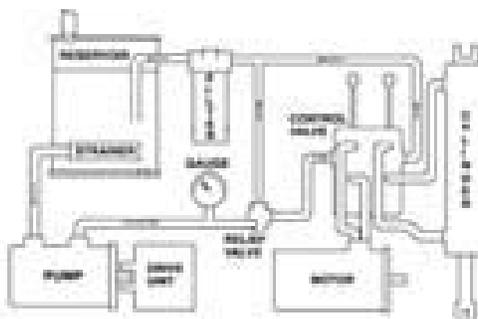
**D) #8 ORB PORTS**  
8046724 – Wt. 1.8 lbs. .... **65<sup>99</sup>**

## OPEN CENTRE HYDRAULIC SYSTEM

DEFINITIONS	
<b>PSI</b>	Pounds per Square Inch
<b>D</b>	Diameter (Inches)
<b>GPM</b>	Gallons per Minute
<b>R</b>	Radius
<b>mHP</b>	Horse Power

BASIC FORMULAS	
$\pi$ (Pi)	3.1416
<b>R</b>	1/2 D of a circle
<b>Area of a Circle</b>	$\pi R^2$

RESERVOIR	
<b>Volume of Reservoir</b>	$\frac{\text{Height (in.)} \times \text{Length (in.)} \times \text{Width (in.)}}{231}$

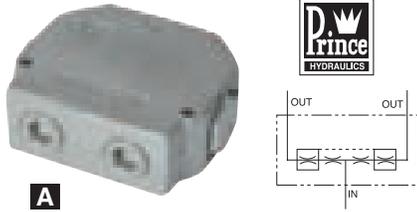


CYLINDERS	
<b>Force of a Cylinder</b>	$\frac{\text{Extended Force (lbs.)}}{\text{Piston Area}} = \text{PSI}$
<b>Time to Extend/Retract a Cylinder (sec.)</b>	$\frac{\text{Piston Area} \times \text{Stroke} \times .26}{\text{GPM}}$

MOTORS	
<b>Motor Speed (RPM)</b>	$\frac{\text{GPM} \times 231}{\text{Displacement (in}^3\text{/Rev.)}}$
<b>Torque (inch-pounds)</b>	$\frac{\text{PSI} \times \text{Displacement (in}^3\text{/Rev.)}}{2\pi}$
<b>Horse Power Output</b>	$\frac{\text{Torque (inch-pounds)} \times \text{RPM}}{63,025}$

PUMPS	
<b>HP to Drive a Pump</b>	$\frac{\text{GPM} \times \text{PSI}}{1714 \times \text{Pump Efficiency}}$
<b>Pump Efficiency</b>	- .85 to .9 for Piston or Vane - .75 to .85 for Gear
<b>Pump Output (GPM)</b>	$\frac{\text{Displacement (in}^3\text{/Rev.)} \times \text{RPM}}{231}$

**PROPORTIONAL FLOW DIVIDERS/COMBINERS**

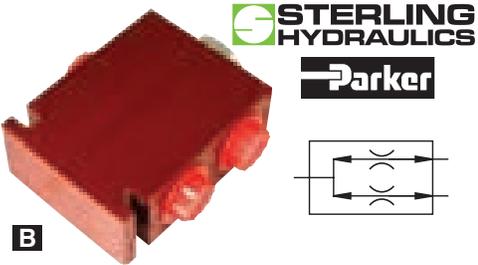


**A**

- Proportional-type pressure compensated flow divider separates a single flow of hydraulic oil into 2 equal flows
- Max. continuous pressure: 3,000 PSI

**A) SPOOL STYLE**

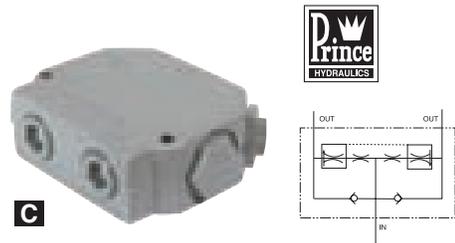
- No reverse flow
  - Max. inlet flow: 16-30 GPM
  - Ports: 3/4" NPT
- 8107245** – Wt. 7.2 lbs. .... **109<sup>99</sup>**



**B**

**B) SPOOL STYLE**

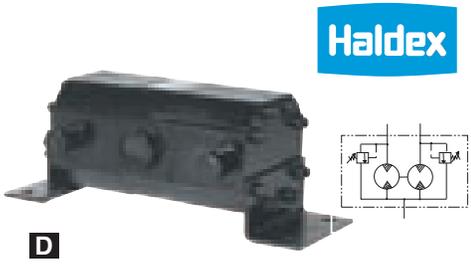
- Combiner feature allows flow to be combined in reverse direction
  - Interlocking spools for equal control dividing or combining
  - Max inlet flow: 2.1-5.3 GPM
  - Ports: #8 ORB
- 8046697** – Wt. 1.0 lbs. .... **129<sup>99</sup>**



**C**

**C) SPOOL STYLE**

- Allows the reverse flow of oil through free reverse checks (Not pressure compensated).
  - Max. inlet flow: 8-19 GPM
  - Ports: 1/2" NPT
- 8107278** – Wt. 7.4 lbs. .... **149<sup>99</sup>**



**D**

**D) ROTARY GEAR STYLE**

- Combiner feature allows flow to be combined in reverse direction
  - Efficient design resulting in very little pressure drop or heat generation
  - Built in differential relief valves to synchronize cylinders and protect against excessive differential pressure
  - Can also be used as a pressure intensifier
  - Max inlet flow: 9-18 GPM
  - Ports: #10 ORB
- 8098212** – Wt. 10.0 lbs. .... **299<sup>99</sup>**

**PRESSURE COMPENSATED ADJUSTABLE FLOW CONTROLS**



**E**

- Flow can be completely shut off or wide open
- Output flow is smooth and constant regardless of pressure changes on the controlled flow line
- Both outlets are pressure compensated
- Max. continuous pressure: 3,000 PSI

**E) 16 GPM MAX.**  
1/2" NPT ports.  
**1240985** – Wt. 7.8 lbs. .... **99<sup>99</sup>**

**E) 30 GPM MAX.**  
3/4" NPT ports.  
**1240977** – Wt. 7.9 lbs. .... **99<sup>99</sup>**



**F**

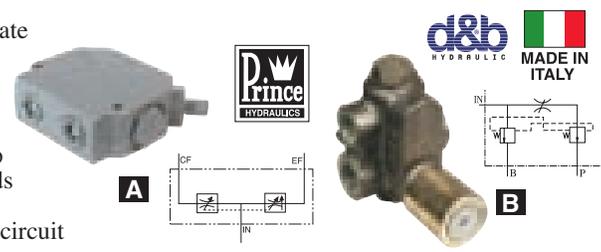
Similar to above except with built-in adjustable relief valve. Preset @ 1,500 PSI.

**F) 16 GPM MAX.**  
1/2" NPT ports.  
**1241009** – Wt. 7.8 lbs. .... **119<sup>99</sup>**

**F) 30 GPM MAX.**  
3/4" NPT ports.  
**1241025** – Wt. 8.0 lbs. .... **119<sup>99</sup>**

**PRIORITY TYPE ADJUSTABLE FLOW CONTROLS**

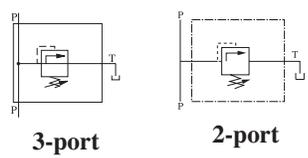
- Designed for applications where 2 separate hydraulic power circuits are to be served from a single pump
- A constant regulated flow is maintained at the controlled flow port regardless of changes in load, pressure, or input pump flow, so long as input pump flow exceeds controlled-flow port demand
- Excess flow can be used in a secondary circuit



	Max. Cont. Pressure (PSI)	Max. Cont. Flow (GPM)	Priority Flow Range (GPM)	Priority Flow Port	Inlet/Excess/Priority Ports	Wt. (lbs.)	ITEM	PRICE
<b>A</b>	3,000	30	2 - 12	3/4" NPT	3/4" NPT	7.3	<b>8107286</b>	<b>129.99</b>
<b>B</b>	3,600	9	0 - 9	#8 ORB	#10 ORB	2.7	<b>1240028</b>	<b>139.99</b>

**ADJUSTABLE RELIEF VALVES**

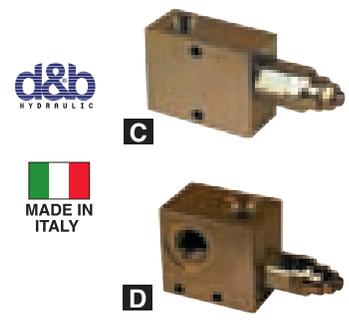
- Relief valves are used to control the maximum pressure in the portion of the hydraulic system where they are installed
- Protects components from over-pressuring
- Use to set maximum operating pressure by setting relief pressure approx. 300 PSI over system pressure



**C & D) RELIEF VALVES**

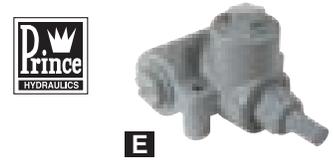
- 2 port configurations C-3 port, D-2 port
- Preset @ 2,000 PSI and is adjustable from 150 to 3,500 PSI
- Ball style

	Model #	Max. (GPM)	Ports (ORB)	Wt. (lbs.)	ITEM	PRICE
<b>C</b>	CP20	5	6	1.2	<b>1240037</b>	<b>54.99</b>
<b>C</b>	CP40	10	8	1.5	<b>1240038</b>	<b>64.99</b>
<b>C</b>	CP80	20	10	3.1	<b>1240039</b>	<b>79.99</b>
<b>D</b>	CP/L40	10	8	1.7	<b>1240041</b>	<b>69.99</b>
<b>D</b>	CP/L80	20	10	2.7	<b>1240042</b>	<b>84.99</b>



**E) RELIEF VALVE**

- 3 port, differential poppet style
  - Provides smooth quiet performance and a small variation between cracking and full flow pressures
  - Preset at 2,000 PSI and adjustable from 1,500 to 3,000 PSI
  - Max. continuous flow: 30 GPM
  - Ports: #12 ORB
- 8107237** – Wt. 3.3 lbs. .... **59<sup>99</sup>**



**F) RELIEF VALVE**

- 2-port, poppet style
  - Fast response, good stability and virtually leak free
  - Adjustable from 70 to 3,000 PSI
  - Maximum continuous flow: 26 GPM
  - Ports: #8 ORB
- 8106361** – Wt. 1.0 lbs. .... **69<sup>99</sup>**



**COUNTER BALANCE VALVE**

- Controls maximum return flow to equal pump output
- Prevents load induced acceleration and pump cavitation
- This valve is used in many load lowering applications to control the rate of descent ie. truck boxes, tilt bed trailers or cranes
- Max. continuous pressure: 5,000 PSI
- Relief pressure set @ 3,200 PSI, adjustable from 1,450 PSI to 3,625 PSI

	Max. GPM	Ports (ORB)	Wt. (lbs.)	ITEM	PRICE
	8	8	2.9	<b>1240065</b>	<b>84.99</b>



## PILOT OPERATED CHECK VALVES (LOCK VALVES)

- Require pressure from 1 work port to open the return line of the other work port
- Holds the load in position, preventing creeping
- Best used with motor spool to prevent the checks from not seating



### A) 2-WAY PILOT OPERATED CHECK VALVES

Max. continuous pressure: 4,350 PSI

Model #	Max. GPM	Ports (ORB)	Wt. (lbs.)	ITEM	PRICE
A VBD/F8	8.75	8	1.5	1240047	49.99
A VBD/F10	12.5	10	2.5	1240048	64.99



### B) 2-WAY PILOT OPERATED CHECK VALVE

- Max. continuous pressure: 3,000 PSI
  - Max. continuous flow: 30 GPM
  - Ports: 1/2" NPT
- 8107294 – Wt. 6.8 lbs. .... 129<sup>99</sup>

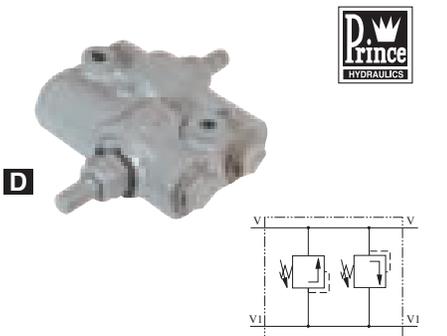


### C) 1-WAY PILOT OPERATED CHECK VALVE

- Uses a 2-stage poppet for smooth chatter free operation
  - Max. continuous pressure: 3,000 PSI
  - Max. continuous flow: 30 GPM
  - Ports: 1/2" NPT
- 8107302 – Wt. 2.4 lbs. .... 129<sup>99</sup>

## CROSS OVER RELIEF VALVES (CUSHION VALVES)

Eliminates shock, surge, and overload on hydraulic cylinders and motors



### D) DIFFERENTIAL POPPET STYLE

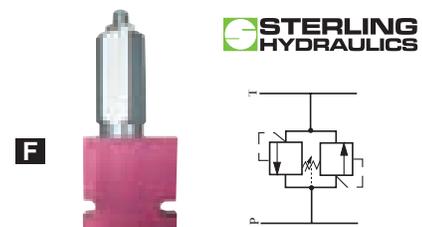
- Provides smooth quiet performance with a minimum variation between cracking and full flow pressures
  - Max. continuous pressure: 3,000 PSI
  - Max. continuous flow: 30 GPM
  - Reliefs are set at 2,000 PSI and adjustable from 1,500 to 3,000 PSI
  - Ports: #12 ORB
- 8107161 – Wt. 5.0 lbs. .... 99<sup>99</sup>



### E) POPPET STYLE

- Max. continuous pressure: 4,350 PSI
- Relief cartridges are preset @ 2,000 PSI and are adjustable from 150 to 3,500 PSI

Model #	Max. GPM	Ports (ORB)	Wt. (lbs.)	ITEM	PRICE
E CP/DI/L/40	10	8	2.6	1240044	109.99
E CP/DI/L/80	20	10	4.9	1240045	129.99



### F) POPPET STYLE

- Max. continuous pressure: 3,000 PSI
  - Maximum continuous flow: 32 GPM
  - Relief cartridge adjustable from 70-3,000 PSI
  - Ports: #8 ORB
- 8106379 – Wt. 1.0 lbs. .... 139<sup>99</sup>

## ADJUSTABLE LINE THROTTLE VALVES

These simple and versatile little valves are an inexpensive way to restrict the flow of oil to various components in a hydraulic system. They are adjustable from 0 GPM to their maximum rated capacity in one direction and capable of full flow in the other direction.

Use to:

- Control cylinder stroke speed
- Prevent pump cavitation by controlling cylinders or motors with inertia loads
- Meter the flow to a hydraulic motor to control speed

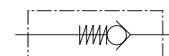


	Max. GPM	Max. PSI	Ports (ORB)	Wt. (lbs.)	ITEM	PRICE
<b>A</b>	7.5	4,350	8	1.0	<b>8006748</b>	<b>44.99</b>
<b>A</b>	11.25	4,350	10	1.4	<b>8006757</b>	<b>49.99</b>

	Max. GPM	Max. PSI	Ports (ORB)	Wt. (lbs.)	ITEM	PRICE
<b>B</b>	3.5	5,000	4	1.0	<b>8094856</b>	<b>32.99</b>
<b>B</b>	15.0	5,000	6	1.1	<b>8094864</b>	<b>34.99</b>
<b>B</b>	19.0	5,000	8	2.3	<b>8094872</b>	<b>54.99</b>
<b>B</b>	44.0	5,000	12	2.3	<b>8094880</b>	<b>74.99</b>

## LINE CHECK VALVES

- Permits oil flow in 1 direction only
- Poppet style for less leakage than standard ball type



Max. GPM	Max. PSI	Ports (NPT)	Wt. (lbs.)	ITEM	PRICE
10.6 GPM	5,000	3/8"	0.7	<b>8093049</b>	<b>9.99</b>
16.6 GPM	5,000	1/2"	1.2	<b>8093056</b>	<b>11.99</b>
25.6 GPM	5,000	3/4"	1.8	<b>8093064</b>	<b>15.99</b>



## READY-MADE HYDRAULIC HOSE



Princess Auto also offers hydraulic hose crimping with a wide variety of fittings for many applications.

- We carry many sizes of complete hoses assemblies for your convenience
- If we don't have what you require, let us know and we will custom make exactly what you need
- All hose is 2-wire

1/4" NPT RIGID FITTINGS x 1/4" HOSE 5,000 PSI			
Length	Wt. (lbs.)	ITEM	PRICE
2 ft.	0.7	<b>1290287</b>	<b>7.99</b>
3 ft.	0.9	<b>1290295</b>	<b>8.99</b>
4 ft.	1.2	<b>1290303</b>	<b>10.99</b>
6 ft.	1.6	<b>1290329</b>	<b>13.99</b>
8 ft.	2.1	<b>1290345</b>	<b>16.99</b>

1/2" NPT RIGID FITTINGS x 1/2" HOSE 3,500 PSI			
Length	Wt. (lbs.)	ITEM	PRICE
2 ft.	1.3	<b>1290840</b>	<b>10.99</b>
3 ft.	1.7	<b>1290857</b>	<b>12.99</b>
4 ft.	2.2	<b>1290865</b>	<b>14.99</b>
6 ft.	2.8	<b>1290881</b>	<b>18.99</b>
8 ft.	2.6	<b>1290907</b>	<b>22.99</b>
10 ft.	4.3	<b>1290923</b>	<b>26.99</b>

3/8" NPT RIGID FITTINGS x 3/8" HOSE 4,000 PSI			
Length	Wt. (lbs.)	ITEM	PRICE
2 ft.	1.0	<b>1290568</b>	<b>8.49</b>
3 ft.	1.3	<b>1290576</b>	<b>9.99</b>
4 ft.	1.6	<b>1290584</b>	<b>11.99</b>
6 ft.	2.3	<b>1290600</b>	<b>14.99</b>
8 ft.	3.0	<b>1290626</b>	<b>17.99</b>

1/2" JIC SWIVEL FITTINGS x 1/2" HOSE 3,500 PSI			
Length	Wt. (lbs.)	ITEM	PRICE
2 ft.	1.3	<b>8007250</b>	<b>14.99</b>
3 ft.	1.7	<b>8007251</b>	<b>15.99</b>
4 ft.	2.1	<b>8007252</b>	<b>17.99</b>
6 ft.	2.8	<b>8007259</b>	<b>22.99</b>
8 ft.	3.5	<b>8007260</b>	<b>26.99</b>

### TECH TIPS

#### What is the difference between a pressure compensated flow control and priority flow control?

A pressure compensated flow control will deliver the same controlled flow regardless of pressure as long as the inlet flow remains constant. If the inlet flow is increased or decreased the controlled flow will also vary accordingly. A priority flow control will deliver the same controlled flow regardless of changes to the inlet flow or pressure as long as the inlet flow exceeds controlled flow demand.

## HYDRAULIC HOSE CENTRE

- Rubber covered with high tensile strength steel wire reinforcing
- Temperature range -40° to 100°C (-40° to 212°F)
- Wire braiding allows the hose to retain flexibility plus withstand high pressures and rough usage
- Manufactured and tested to SAE 100 R1 and SAE 100 R2 specifications

### 1-WIRE SAE 100 R1 AT

Size	Max. Cont. Pressure	Min. Bend Radius	Wt. (lbs.)	ITEM	PRICE (ft.)
1/4"	3,260	3.9"	0.2	8002645	1.19
3/8"	2,610	5.1"	0.2	8002647	1.39
1/2"	2,310	7.1"	0.2	8002648	1.59
3/4"	1,520	9.4"	0.2	8002649	2.49
1"	1,270	11.8"	0.2	8002650	3.49

### 2-WIRE SAE 100 R2 AT

Size	Max. Cont. Pressure	Min. Bend Radius	Wt. (lbs.)	ITEM	PRICE (ft.)
1/4"	5,800	3.9"	0.1	8002651	1.59
3/8"	4,780	5.1"	0.1	8002652	1.79
1/2"	3,980	7.1"	0.1	8002654	1.99
5/8"	3,625	7.9"	0.5	8070179	2.49
3/4"	3,110	9.4"	0.1	8002655	3.29
1"	2,390	11.8"	0.1	8002656	4.99

## SUCTION HOSE

- Use to connect your hydraulic pump to your reservoir
- Can also be used for other petroleum based applications
- Resistant to vacuum induced collapse which can result in pump cavitation
- 2 styles available

- The hose cover is made of abrasion and weather resistant neoprene rubber
- Reinforced with 4 spirals of high-tensile yarn
- Temperature range: -40° to 95°C (-45° to 203° F)
- Not to be used for suctioning applications over 6 ft.
- Max. continuous pressure: 250 PSI

Hose I.D.	Hose O.D.	Max. Flow (GPM)	Wt. (lbs.)	ITEM	PRICE
3/4"	1.16"	7	0.2	8017996	2.99/ft.
1"	1.44"	12	0.5	8018030	3.99/ft.
1-1/4"	1.78"	19	7.4	8018076	6.99/ft.

- The hose cover is a neoprene rubber with a black wrapped finish that is abrasion and weather resistant
- Reinforced with a heavy wire helix embedded between layers of synthetic textile cords
- Temperature range: -40° to 110°C (-40° to 230°F)
- Max. continuous pressure: 150 PSI

Hose I.D.	Hose O.D.	Max. Flow (GPM)	Wt. (lbs.)	ITEM	PRICE
1-1/2"	1.97"	27	3.8	8017987	7.99/ft.



### HIGH FLEX 2-WIRE SAE 100 R2 AT

- Increased flexibility for a smaller bend radius
- High visibility yellow lay line

Size	Max. Cont. Pressure	Min. Bend Radius	Wt. (lbs.)	ITEM	PRICE (ft.)
3/8"	4,780	2.8"	0.4	8070211	1.99
1/2"	3,980	3.2"	2.4	8070237	2.19

### HOSE CRIMP DIAMETERS

Hose Size	COMPRESSION STYLE		BITE-TO-WIRE STYLE	
	1-Wire	2-Wire	1-Wire	2-Wire
1/4"	0.610"	0.653"	0.656"	0.695"
3/8"	0.748"	0.810"	0.835"	0.874"
1/2"	0.905"	0.930"	0.955"	0.995"
5/8"	—	1.050"	—	—
3/4"	1.100"	1.160"	1.256"	1.295"
1"	1.410"	1.470"	—	—



**FREE\*  
HOSE  
CLEANING**

- 75% to 80% of all hydraulic system failures are caused by fluid contamination
- The firing of a projectile through the hose will strip out these contaminants and prevent them from entering the hydraulic system
- We will now be cleaning all new bulk hose and custom made hose assemblies



**FREE\*  
HOSE  
CUTTING  
&  
CRIMPING**

- Princess Auto offers 17 sizes and types of hydraulic hose and over 360 different crimp-on fittings and adapters
- Thread styles include: NPT, ORB, JIC 37°, Metric and ORFS
- Fitting types include: rigid, swivel, 45° and 90°

\* For all hydraulic hose and fittings purchased from Princess Auto

## T-BOLT HOSE CLAMPS



- Stainless steel band and bridge, plated steel bolt, trunnion and nut
- Provides dynamic sealing to suction hoses preventing air and other contaminants from entering the system
- Prevents the leakage of fluid from pressure hoses
- Improved sealing compared to standard screw clamps

Range (I.D.)	Wt. (lbs.)	ITEM	PRICE
1.14" - 1.22"	0.1	8023925	3.99
1.31" - 1.56"	0.1	8016951	5.99
1.56" - 1.81"	0.1	8016997	5.99
1.81" - 2.06"	0.1	8017004	6.49
2.06" - 2.31"	0.1	8017013	6.49
2.56" - 2.87"	0.2	8017040	6.99
3.06" - 3.38"	0.2	8106288	7.49
3.31" - 3.62"	0.2	8106312	7.49

## STEEL HOSE BARBS



Steel construction to prevent oil contamination and provide superior fitting strength.

Hose I.D.	Fitting Size	Wt. (lbs.)	ITEM	PRICE
3/4"	3/4" NPT	0.3	8023952	3.99
1"	1" NPT	0.5	8023961	7.99
1-1/4"	1-1/4" NPT	0.9	8023989	17.99
1-1/2"	1-1/2" NPT	1.1	8023998	24.99

## HYDRAULIC HOSE CRIMP FITTINGS

Manufactured and tested to SAE 100 R1 and SAE 100 R2 specifications.

## BITE-TO-WIRE STYLE FITTINGS

All sizes feature a precision machined ferrule, which when crimped "bites" into the wire of the hose. Field proven in vibration and shock conditions and designed to handle sub zero through high temperatures applications. *(Crimp dimensions on page 30)*

### JIC FEMALE SWIVEL



Hose I.D.	End Size	Wt. (lbs.)	ITEM	PRICE
1/4"	1/4"	0.1	8133738	4.19
1/4"	3/8"	0.1	8133746	4.29
3/8"	3/8"	0.1	8133753	4.69
3/8"	1/2"	0.1	8133761	5.19
1/2"	1/2"	0.1	8133779	6.39
1/2"	5/8"	0.1	8133787	7.49
3/4"	3/4"	0.1	8133795	9.99

### NPT MALE



Hose I.D.	End Size	Wt. (lbs.)	ITEM	PRICE
1/4"	1/4"	0.1	8133647	3.69
1/4"	3/8"	0.1	8133670	3.99
3/8"	3/8"	0.1	8133688	3.99
3/8"	1/2"	0.1	8133696	4.59
1/2"	3/8"	0.1	8133704	4.59
1/2"	1/2"	0.1	8133712	4.69
3/4"	3/4"	0.1	8133720	7.99

## COMPRESSION STYLE FITTINGS

All sizes feature a precision machined ferrule which when crimped compresses against the hose. Field proven in vibration and shock conditions and designed to handle sub zero through high temperature applications.

## NPT FITTINGS



Hose I.D.	End Size	RIGID MALE			SWIVEL MALE			90° SWIVEL MALE		
		Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE
1/4"	1/8"	0.1	1290240	3.69	-	-	-	-	-	-
1/4"	1/4"	0.1	1290241	3.69	0.2	1290255	6.39	0.2	8077109	11.99
1/4"	3/8"	0.1	1290242	3.99	0.2	1290256	7.29	-	-	-
1/4"	1/2"	0.2	1290243	8.99	-	-	-	-	-	-
3/8"	1/4"	0.2	1290244	3.99	-	-	-	-	-	-
3/8"	3/8"	0.2	1290245	3.99	0.2	1290257	7.29	0.3	8077117	12.99
3/8"	1/2"	0.2	1290247	4.59	0.3	1290258	7.99	-	-	-
1/2"	3/8"	0.2	1290248	4.59	0.3	8050502	7.99	-	-	-
1/2"	1/2"	0.3	1290249	4.69	0.3	1290259	7.99	0.5	8077125	12.99
5/8"	1/2"	0.4	8076978	7.99	-	-	-	-	-	-
5/8"	3/4"	0.4	8076986	8.49	-	-	-	-	-	-
3/4"	3/4"	0.4	1290251	7.99	0.5	1290260	12.69	-	-	-
1"	1"	0.7	1290252	12.69	1.0	1290262	20.99	-	-	-



## HOSE MENDERS

Hose I.D.	End Size	RIGID FEMALE			SWIVEL FEMALE			Hose I.D.	Wt. (lbs.)	ITEM	PRICE
		Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE				
1/4"	1/4"	0.1	1290266	4.29	0.1	1290263	4.79	3/8"	0.2	8077133	9.99
3/8"	3/8"	0.2	1290267	4.79	0.2	1290264	5.79	1/2"	0.4	8077141	9.99
1/2"	1/2"	0.3	1290268	5.89	0.3	1290265	6.79				
3/4"	3/4"	0.3	8006624	13.49	0.3	8006627	14.79				

**O-RING BOSS MALE FITTINGS**



Hose I.D.	End Size	RIGID			SWIVEL			90° SWIVEL		
		Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE
1/4"	#6	0.1	1290270	4.79	-	-	-	0.3	1290365	12.99
3/8"	#6	0.2	1290272	4.79	0.2	1290281	7.99	0.3	1290366	13.29
3/8"	#8	0.2	1290273	5.69	0.3	1290282	8.99	0.4	1290367	13.79
1/2"	#8	0.3	1290274	6.29	0.4	1290283	9.49	0.5	1290358	13.99
1/2"	#10	0.3	1290275	6.79	0.3	1290284	9.99	0.5	1290359	14.49
5/8"	#10	0.4	8077018	12.99	-	-	-	-	-	-
3/4"	#12	0.4	1290361	12.99	-	-	-	-	-	-

**O-RING FACE SEAL FITTINGS**



Hose I.D.	End Size	RIGID MALE			SWIVEL FEMALE		
		Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE
1/4"	#4	-	-	-	0.1	8046642	6.99
3/8"	#6	1.0	8046624	7.29	0.2	8046651	7.99
1/2"	#8	0.2	8046633	8.49	0.3	8046660	8.99
5/8"	#10	0.4	8077026	10.99	0.4	8077034	10.99
3/4"	#12	-	-	-	0.5	8046679	14.99

**JIC 37° FITTINGS**



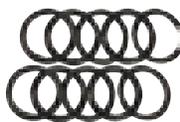
Hose I.D.	End Size	RIGID MALE			SWIVEL FEMALE		
		Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE
1/4"	1/4"	0.3	1290285	3.79	0.1	1290294	4.49
1/4"	3/8"	0.1	1290362	4.49	0.2	1290297	4.49
3/8"	3/8"	0.2	1290288	4.69	0.2	1290298	4.99
3/8"	1/2"	0.2	1290289	4.99	0.2	1290299	5.99
1/2"	1/2"	0.2	1290290	5.99	0.3	1290300	6.99
1/2"	5/8"	0.3	1290291	6.99	0.3	1290301	7.99
1/2"	3/4"	0.4	1290371	9.49	0.4	1290369	9.99
5/8"	1/2"	-	-	-	0.4	8077067	10.49
5/8"	5/8"	0.4	8077042	8.49	0.4	8077075	10.99
5/8"	3/4"	0.4	8077059	8.99	0.5	8077083	11.49
3/4"	3/4"	0.4	1290292	8.99	0.5	1290302	11.99
3/4"	1"	0.5	8109761	11.99	0.6	1290304	12.99
1"	1"	0.7	1290293	14.99	0.8	1290305	15.99

**JIC 37° FEMALE ELBOWS**



Hose I.D.	End Size	90° SWIVEL			45° SWIVEL			90° LONG SWIVEL		
		Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE	Wt. (lbs.)	ITEM	PRICE
1/4"	1/4"	0.1	1290307	10.99	-	-	-	-	-	-
1/4"	3/8"	0.2	1290308	10.99	-	-	-	-	-	-
3/8"	3/8"	0.2	1290309	11.49	0.2	1290318	11.99	0.2	1290325	11.99
3/8"	1/2"	0.3	1290310	12.99	-	-	-	-	-	-
1/2"	1/2"	0.3	1290312	13.99	0.3	1290320	12.99	0.4	1290326	13.99
1/2"	5/8"	0.5	1290313	18.99	0.4	1290321	17.99	-	-	-
5/8"	5/8"	0.5	8077091	19.99	-	-	-	-	-	-
3/4"	3/4"	0.7	1290314	25.99	0.6	1290322	25.99	0.8	1290327	26.49

**REPLACEMENT O-RINGS**



Pkg. of 10.

**O-RING BOSS**

Size	Wt. (lbs.)	ITEM	PRICE
#4	0.1	8078891	3.59
#5	0.2	8078974	3.69
#6	0.1	8078990	3.79
#8	0.1	8079014	4.79
#10	0.1	8079048	4.89
#12	0.1	8079063	5.99
#14	0.1	8079071	7.89
#16	0.1	8079089	7.99
#20	0.1	8079097	9.99

**O-RING FACE SEAL**

Size	Wt. (lbs.)	ITEM	PRICE
#4	0.1	8079105	5.49
#6	0.1	8079113	5.99
#8	0.1	8079121	7.49
#10	0.1	8079147	7.99
#12	0.1	8079154	9.49

**125 PC O-RING BOSS REPLACEMENT O-RING KIT**



8080913 - Wt. 0.4 lbs. .... **14<sup>99</sup>**