FA - Fluid and Air Transfer

Fluid & Air Transfer







Fluid & Air Transfer - Air Hose

Air Hose





MINE AIR/WATER HOSE

For mining, construction and industrial use where 400 PSI service is required. Mandrel built.

- Yellow cover weather, cut & abrasion resistant synthetic rubber
- Smooth black, oil mist resistant, synthetic rubber tube
- Reinforced with multiple layers of high tensile, spiraled synthetic wound yarn
- Temperature range: -40°C to +82°C (-40°F to +180°F)
- Sizes: ½" 4" I.D.
- Standard length 50' (other lengths available)

Product Number	I.D. inches	O.D. inches	Max W.P. PSI	Approx Wt. Per ft. lbs
46-MH-050-050	0.5	0.95	400	0.31
46-MH-075-050	0.75	1.26	400	0.41
46-MH-100-050	1	1.54	400	0.61
46-MH-125-050	1.25	1.89	400	0.81
46-MH-150-050	1.5	2.12	400	0.91
46-MH-200-050	2	2.63	400	1.2
46-MH-300-050	3	3.7	400	2.37
46-MH-400-050	4	4.8	400	3.3

WIRE REINFORCED AIR HOSE

- High pressure air service to mining, construction & industrial use
- Yellow cover with red stripe
- Cut & gouge resistant synthetic rubber
- Reinforced with layers of high tensile steel wire
- Temperature Range: -40°C to +85°C
- Sizes: ½" 4" I.D..
- Standard length 50' (other lengths available)

Product Number	I.D. inches	O.D inches	Max W.P PSI	Approx Wt. Per ft. lbs
46-MHWR-050-050	0.5	0.8	600	0.44
46-MHWR-075-050	0.75	1.14	600	0.54
46-MHWR-100-050	1	1.3	600	0.68
46-MHWR-125-050	1.25	1.66	600	0.83
46-MHWR-150-050	1.5	2.05	600	1.12
46-MHWR-200-050	2	2.63	600	1.58
46-MHWR-250-050	2.5	3.27	450	2.4
46-MHWR-300-050	3	3.78	450	2.86
46-MHWR-400-050	4	4.8	450	4.13

TIME Hose Assemblies



	Product Number	Size
	46MH050050QL	Hose Asm, 1/2" x 50' 400 PSI w/ TIME Quick Lock Ends
	46MH100050QL	Hose Asm, 1" x 50' 400 PSI w/ TIME Quick Lock Ends
	46MH150050QL	Hose Asm, 1-1/2" x 50' 400 PSI w/ TIME Quick Lock Ends
	46MH200050QL	Hose Asm, 2" x 50' 400 PSI w/ TIME Quick Lock Ends
1	46MH050050SN	Hose Asm, 1/2" x 50' 400 PSI w/ TIME Stem and Nut Ends
1	46MH100050SN	Hose Asm, 1" x 50' 400 PSI w/ TIME Stem and Nut Ends
	46MH150050SN	Hose Asm, 1-1/2" x 50' 400 PSI w/ TIME Stem and Nut Ends
7	46MH200050SN	Hose Asm, 2" x 50' 400 PSI w/ TIME Stem and Nut Ends
	46MH200050GRV	Hose Asm, 2" x 50' 400 PSI w/ TIME Grooved Ends





Fluid & Air Transfer - Drill Hose

Drill Hose

EPDM MULTI-PURPOSE HOSE

Air, water, agricultural spray solutions and other diluted chemicals. Good resistance to heat, weathering and vegetable oils

- Smooth red cover; black EPDM tube
- Oil mist resistant
- Reinforced with layers of high tensile polyester yarn
- Temperature range: -40°C to +93°C

Product Number	I.D. Inches	O.D. Inches	Max W.P. PSI	Approx Wt. Per ft. lbs.		
46-DH-100-100	1	1.37	200	0.51		
Product Number	Description					
46DH100100UN	Hose asm 1"x100 w/universal ends					
46DH100100LS	Hose asm 1"x100 w/brass long shanks					



Hose Anchor

HOSE ANCHOR by WHIPCHEK®

These strong steel cables prevent hose whip in the event of accidental separation of coupling or clamp device.

WHIPCHEK® reaches across the hose fittings to provide stand-by safety for any type of hose. Spring loaded loops in the cable ends open easily to pass over the couplings, for firm grip on hose (see illustration). Thoroughly tested with years of service.

Must be installed in the extended position (no slack).

Highly resistant to rust and corrosion. No tools needed; easy to install and remove.

Product Number	Description
221-04	1/8" cable for 1/2" – 1-1/4" incl. hose size, 20-1/2" long
221-05	1/4" cable for 1-1/2" to 3" hose size, 38-1/4" long
22104STAINLESS	Whipcheck SS 1/2" to 1-1/4" Hose, 22" LG
22105STAINLESS	Whipcheck SS 1/4" to 3" Hose, 36" LG



Whipsock Hose Restraints

Whip socks are used to restrain high pressure hoses. The whip sock has a unique design that prevents the very real and unpredictable whipping of a high pressure hose during a failure. The real genius behind these new designs is the woven steel that grips and tightens over a large area of the hose as it suppresses and confines the hose that has ruptured.

The whip sock is just one more way for a company to make a potentially dangerous workspace much safer for employees. The whip sock is also one more way to prevent a good deal of damage to adjacent equipment if there were to be a high pressure breakdown.

Product Number	Description
HR40-50MM	Whipsock Hose Restraints 1-1/4" Hose
HR50-60MM	Whipsock Hose Restraints 1-1/2" Hose
HR60-70MM	Whipsock Hose Restraints 2" Hose
HR70-85MM	Whipsock Hose Restraints 2-1/2" Hose
HR85-100MM	Whipsock Hose Restraints 3" Hose





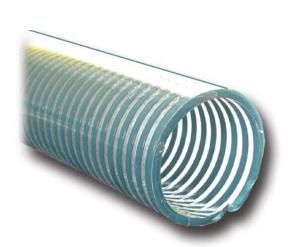




Fluid & Air Transfer - Hose

Suction & Discharge





RUBBER WATER SUCTION & DISCHARGE

- Smooth black synthetic rubber
- Abrasion resistant
- Textile reinforced with heavy wire
- Temperature range: -32°C to +82°C
 HEAVY DUTY

A heavy duty rubber suction hose for construction quarries & general use.

Suitable for full vacuum.

Product Number	I.D. inches	O.D. inches	Bend Radius Inches	Max W.P. PSI	Approx Wt. Per ft. lbs.
46-RSD-100	1	1.38	8	100	0.53
46-RSD-125	1-1/4	1.73	10	100	0.75
46-RSD-150	1-1/2	1.97	12	100	0.87
46-RSD-200	2	2.45	16	100	1.12
46-RSD-300	3	3.50	27	100	1.84
46-RSD-400	4	4.59	36	75	3.43
46-RSD-500	5	5.61	45	75	4.81
46-RSD-600	6	6.61	54	75	4.92

PVC SUCTION & DISCHARGE

- Smooth clear PVC
- Excellent weather and abrasion resistance
- Temperature range: -20°C to +70°C

HEAVY DUTY

For construction pumps, septic tank and marine pump out service, mining & quarry use. Suitable for full vacuum. PVC is resistant to some chemicals, acids and alkalis. Reinforced with green PVC helix.

Product Number	I.D. inches	O.D. inches	Vacuum Rating	Bend Radius Inches	Max W.P. PSI	Approx Wt. Per ft. lbs.
46-PSD-100	1	1.26	28	3	85	0.26
46-PSD-125	1-1/4	1.56	28	4	85	0.35
46-PSD-150	1-1/2	1.83	28	5	70	0.48
46-PSD-200	2	2.32	28	7	65	0.66
46-PSD-250	2-1/2	2.87	28	8	65	0.87
46-PSD-300	3	3.43	28	10	65	1.24
46-PSD-400	4	4.50	28	15	55	1.85







Fluid & Air Transfer - Hose



RUBBER LAYFLAT AIR HOSE

An economical EPDM multi-purpose hose used in construction, marine and industrial applications.

- Yellow nitrile tube
- Reinforced with circular woven 100% polyester yarn
- Resistant to abrasion, oil and weathering
- Temperature Range: -30°C to +100°C

Product Number	I.D. Inches	O.D. inches	Max W.P. PSI	Approx Wt. Per ft. lbs.
221-153	3/4	0.98	300	0.20
221-225	1	1.24	300	0.20
221-161	1-1/2	1.74	300	0.25
221-100	2	2.28	300	0.35
221-154	3	3.40	250	0.52
221-155	4	4.29	200	0.57

PVC LAYFLAT HOSE

Hose folds flat for ease of coiling and handling. Designed for use where higher working pressures are required.

- Brown PVC impregnation tube and cover
- Reinforced with woven high tensile synthetic yarn
- Temperature range: -21°C to +54°C

Product Number	I.D. Inches	O.D. Inches	Max W.P. PSI	Approx Wt. Per ft. lbs.
227-17	1-1/2	1.64	120	0.22
227-05	2	2.14	115	0.29
227-13	3	3.17	100	0.43
227-14	4	4.18	100	0.60
227-06	6	6.18	80	1.01







Fluid & Air Transfer - Hose

Anti-Static Loading Hose

A specially formulated anti-static PVC loading for the loading of ammonium nitrate/fuel oil blasting agents used in the mining and construction industries.

Construction:

Specially-formulated anti-static PVC compound.

Features:

- Conductivity effectively limits build-up of static electricity; provides path for its safe dissipation to ground.
- Bleeds off static charges built up during pneumatic loading of Ammonium Nitrate/Fuel Oil mixtures.
- Sufficient resistance guards blasting circuit against stray electrical currents.
- Wear resistance smooth interior and exterior surfaces, combined with tough material formulation, provide good wear resistance.
- · Self-extinguishing characteristics.
- Excellent flexibility sufficiently flexible to handle easily, yet rigid enough to reach upwards into collars of steeply-inclined holes.
- Easily identifiable co-extruded continuous orange stripe makes tubing visible in underground lighting.
- Embossed branding provides lasting identification.
- Packaged for ease of handling and shipping.

Applications:

- Bulk unloading of ammonium nitrate/fuel oil blasting agents in small diameter holes.
- Successfully used for years with Orica's blast hole chargers, intermediate loaders and the Penberthy Anoloader.
- Mining and construction site blasting.

Series No.	Size Code	Inside D	Inside Diameter		Approx. O.D. Max. W.F		Approx. W.P. Mass per 100 ft.		Approx. Mass per 100 m	Length/Coil	
		Inches	mm	Inches	mm	PSI	MPa	(lbs.)	(kg.)	ft.	m
221-35	10	0.63	16	0.859375	22	120	0.83	17.5	25	200	61
221-3534	12	0.75	19	1.06	27	120	0.83	28	40	200	61
221-351	16	1	25	1.33	34	120	0.83	38	55	300	91
221-35114	20	1.25	32	1.63	41	120	0.83	55	78	100	30

Service Temperature Range: -30°F (-35°C) to +150°F (+65°C)

NOTE: A new coil of tubing can have its pliancy restored by the application of heat before it is placed in service underground. This will facilitate handling and its attachment to pneumatic loading equipment. Steam or very hot water passed through the coiled tubing will remove the "set" from the new tubing and allow it to be straightened easily. The tubing should then be left to cool in the straight position.





Fluid & Air Transfer - Foot Valves/Strainers

Rubber Hose Strainer



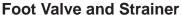
Foot Valves & Strainers



Basket Strainer Without Valves

Round hole basket strainers are made from zinc plated metal. Strainers are used to allow adequate flow without allowing debris that may harm the pump. Non valved.

Product Number	Size
960-03	1-1/2"
960-05	2"
960-09	2-1/2"
960-06	3"
960-07	4 "



Foot valves and strainers are made from cast iron and have a leather or rubber flapper that closes to prevent the pump from losing its prime. Ideal for suction pumps using control floats.

Product Number	Size
962-00	1-1/2"
962-01	2"
962-02	2-1/2"
962-03	3"
962-04	4"







Fluid & Air Transfer - Couplings/Fittings

TIME Water & Air Hose Fittings

Recommendation for a safe working environment:

Correct identification of the hose inside diameter and correct measurement of the hose outside diameter are critical to the proper and safe operation of the hose assembly. Be careful to match the size of the fittings and clamps to the size of the hose they are to be used with. Improperly sized components lead to leaks and coupling "blow offs".



Mining Stems and Nuts





Product Number	Description	Size
200-00	Hose Stem	1/2" x 1/2"
200-01	Hose Stem	1/2" x 1"
200-02	Hose Stem	3/4" x 1"
200-03	Hose Stem	1" x 1"
200-04	Hose Stem	1-1/4" x 1-1/4"
200-05	Hose Stem	1-1/2" x 5-1/4"
200-06	Hose Stem – XL	1-1/2" x 7"
200-07	Hose Stem	2" x 5-1/2"
200-08	Hose Stem – XL	2" x 8"
201-00	Hose Nut	1/2"
201-01	Hose Nut	1"
201-02	Hose Nut	1-1/4 "
201-03	Hose Nut	1-1/2"
201-06	Hose Nut	2"

Hose Joiners



Product Number	Description	Size
202-00	Hose Joiners	1/2″
202-01	Hose Joiners – XL	1/2" x 4 ½"
202-04	Hose Joiners	3/4"
202-02	Hose Joiners	1″
202-03	Hose Joiners – XL	1" x 6-1/2"
202-05	Hose Joiners	1-1/4" x 5"
202-06	Hose Joiners – XL	1-1/4" x 8"
202-07	Hose Joiners	1-1/2" x 5 3/8"
202-08	Hose Joiners – XL	1-1/2" x 8-3/4"
202-09	Hose Joiners	2" x 5-3/4"
202-10	Hose Joiners – XL	2" x 8-3/4"
202-27	Hose Joiners	3" x 6 5/8"
202-26	Hose Joiners	4" x 8 3/4"
202-15	Hose Joiners	6" x 10"



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Fluid & Air Transfer - Couplings/Fittings

TIME Water & Air Hose Fittings

Hose Stem to NPT	
Product Number	Size
207-14	1/2"
207-15	3/4"
207-00	1"
207-09	1-1/4"
207-02	1-1/2"
207-26	2"
207-03	2-1/2"
207-04	3"
207-05	4"



Hose Stem Grooved	
Product Number	Size
207-01	2"
207-16	2" Long
207-11	3"
207-10	4"
207-35	4" Long
207-30	6"



Heavy Duty Pipe Nipples

Threaded & Chamfered both ends	
Product Number	Size
205-01	1" X 3"
205-03	1-1/4" X 4"
205-04	1-1/2" X 4"
205-06	2" X 5"

Threaded to Groove	
Product Number	Size
205-02	1" X 3"
207-160	2" X 4"
207-25	3" X 4"
207-44	4" X 4"





Mining Spuds - Male/Female

Product Number	Description	Size
204-08	Air Hose Spuds	1/2"M x 1"F
204-06	Air Hose Spuds	1"M x 1/4"F
204-05	Air Hose Spuds	1"M x 3/8"F
204-02	Air Hose Spuds	1"M x 1/2"F
204-01	Air Hose Spuds	1"M x 3/4"F
204-00	Air Hose Spuds	1"M x 1"F
204-09	Air Hose Spuds	1-1/4"M x 1"F
204-10	Air Hose Spuds	1-1/4"M x 1-1/4"F
204-07	Air Hose Spuds	1-1/2"M x 1-1/4"F
204-12	Spud Screen	



Mining Spuds - Male/Male

Product Number	Description	Size	
204-03	Water Valve Union Spuds	1/2"M x 3/8"M	
204-04	Water Valve Union Spuds	1/2"M x 1/2"M	
203-00	Water Goose Neck Spuds	1"M x 3/8"M	
203-01	Water Goose Neck Spuds	1"M x 1/2"M	
203-02	Spud Screen		







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Fluid & Air Transfer - Quick Lock

Quick Lock Fittings







The Quick Lock coupling is a multi-purpose coupling for the construction and mining industries to handle air and water.

The name says it all, Quick Lock, connections are made with ease, speed and safety while maintaining a very economical system.

Specifications:

- Available in 3/8" through 2"
- Body: Carbon Steel
- Bellow seal: Buna-Nitrile
- Working pressure: 500 PSI

Bellow Seal

The seal is made of Buna-Nitrile which is more resistant to oil and acids than natural rubber. It is a pressure seal that allows easy coupling and creates a gasket seal upon introduction of line pressure.

Benefits:

- Reduced leakage
- No special tool to remove the seal
- 100% Interchangeable with existing fittings

Safety pins are required as a safety precaution.



Product Number	Description
QLSEAL-1	Seal Quick Lock 1/2" To 1-1/4"
QLSEAL-2	Seal Quick Lock 1-1/2" To 2"

Product Number	Description
11/001/00	Locking Pin

Quick Lock ADP Female	
Product Number	Description
QL038F	ADP Quick Lock 3/8" NPT/F
QL050F	ADP Quick Lock 1/2" NPT/F
QL075F	ADP Quick Lock 3/4" NPT/F
QL100F	ADP Quick Lock 1" NPT/F
QL150F	ADP Quick Lock 1-1/2" NPT/F
QL200F	ADP Quick Lock 2" NPT/F
QL200X1F	ADP Quick Lock 2"X1" NPT/F
Outo	(Look ADD Mole

Quick Lock ADP Male			
Product Number Description			
QL038M	ADP Quick Lock 3/8" NPT/M		
QL050M	ADP Quick Lock 1/2" NPT/M		
QL075M	ADP Quick Lock 3/4" NPT/M		
QL100M	ADP Quick Lock 1" NPT/M		
QL150M	ADP Quick Lock 1-1/2" NPT/M		
QL200M	ADP Quick Lock 2" NPT/M		

Quick Lock Stem			
Product Number Description			
QL050HS	Stem Quick Lock 1/2"		
QL100HS	Stem Quick Lock 1"		
QL150HS	Stem Quick Lock 1-1/2"		
QL200HS Stem Quick Lock 2			







Fluid & Air Transfer - Couplings/Fittings

Universal Hose Fittings

Universal Quick Acting Hose Ends - Malleable Iron





Product Number	Size	Lugs
211-37	3/8"	2
211-01	1/2"	2
211-04	3/4"	2
211-07	1"	2
211-34	1-1/4"	4
211-36	2"	4

Universal Rubber Washer



Product Number	Size
211-10	3/8" - 1"
211-41	1-1/4" - 2"

Universal Locking Pin



Product Number	Description
11/001/00	Locking Pin

Universal Quick Acting Female and Male NPT Ends





Female Ends					
Product Number Size Lugs					
211-00	3/8"	2			
211-03	1/2"	2			
211-06	3/4"	2			
211-09	1"	2			
211-11	1-1/4"	4			
211-33	2"	4			

Male Ends					
Product Number Size Lugs					
211-38	3/8"	2			
211-02	1/2"	2			
211-05	3/4"	2			
211-08	1"	2			
211-39	1-1/4"	4			
211-40	2"	4			







Fluid & Air Transfer

Quick Connect Fittings



Product Number	Description		
91-18	Plug 1" MNPT Steel		
91-17	Plug 1" MNPT Brass		
91-14	Plug 3/4" MNPT Steel		
90-21	Socket 1" MNPT Brass		
90-22	Socket 1" FNPT Brass		
90-17	Socket 3/4" MNPT Brass		
90-18	Socket 3/4" FNPT Brass		





Punch-Lok

PUNCH-LOK CLAMPS

Punch-Lok clamps are available in a variety of materials to suit your needs.

- high strength galvanized carbon steel clamps satisfy nearly all requirements
- stainless steel clamps recommended for use in corrosive situations

HIGH-STRENGTH GALVANIZED & STAINLESS STEEL CLAMPS CHART

Also available: open-clamps, and related tools

Also available. Open clamps, and related tools.						
Galv. Product #	S.S. Product #	Item	Clamp I.D.	Band Width	Clamps per Std. Carton	Shipping Weight Lbs/ Carton
232-01	233-09	P-4	1″	5/8"	100	8.8
232-02	233-12	P-5	1-1/4"	5/8"	100	91
232-03	233-00	P-6	1-1/2"	5/8"	100	10.6
232-04	233-07	P-7	1-3/4"	5/8"	100	11.2
232-05	233-08	P-8	2"	5/8"	100	11.4
232-07	233-13	P-9	2-1/4"	5/8"	100	11.8
232-06	233-04	P-10	2-1/2"	5/8"	50	6.1
232-18	233-06	P-11	2-3/4"	5/8″	50	6.6
232-09	233-01	P-12	3"	5/8″	50	8.0
232-10	233-05	P-14	3-1/2"	5/8"	50	8.4
232-11	233-02	P-16	4"	5/8"	25	5.2
232-12	233-14	P-18	4-1/2"	5/8"	25	5.8
232-13	233-10	P-20	5″	5/8"	25	6.2
232-14	233-03	P-24	6"	5/8"	25	6.8
232-19	233-11	P-28	7"	5/8″	50	13.8

To order clamps: 1. Insert fitting into hose.

- Measure the outside diameter of the hose.
- 3. Select the clamp with the next larger inside diameter clamp.



PUNCH-LOK CLAMPING TOOL

Designed for fast, economical application of punch-type clamps.

Weight: 1-1/2 lbs



Product Number Description
229-00 Punch-Lok Tool



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Fluid & Air Transfer - Couplings

Male Adapter / Female NPT Part "A"

Aluminum Cam & Groove Couplings

Aluminum cam type couplers are the most popular couplers in the industry for transfer of water and other non-corrosive fluids. Available in sizes from 1" to 6".

Specification

• Body: 365 aluminum

• Arms: SS302

Ring & Pins: Plated SteelMade to MIL spec A-A-59326

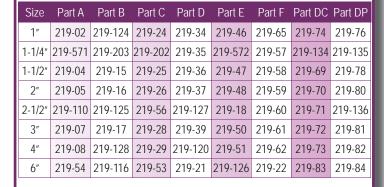


Notes

* Not for use with compressed air

Also available in Stainless Steel













Maximum Pressure Rating PSI For Cam & Groove Couplings

i oi cam a ciocio coapinigo				
Size Aluminum/Brass		Stainless	Polypropylene	
1	250	250	125	
1-1/4	250	250	100	
1-1/2	250	250	100	
2	250	250	100	
2-1/2	150	150	N/A	
3	125	200	75	
4	100	100	75	
6	75	100	N/A	

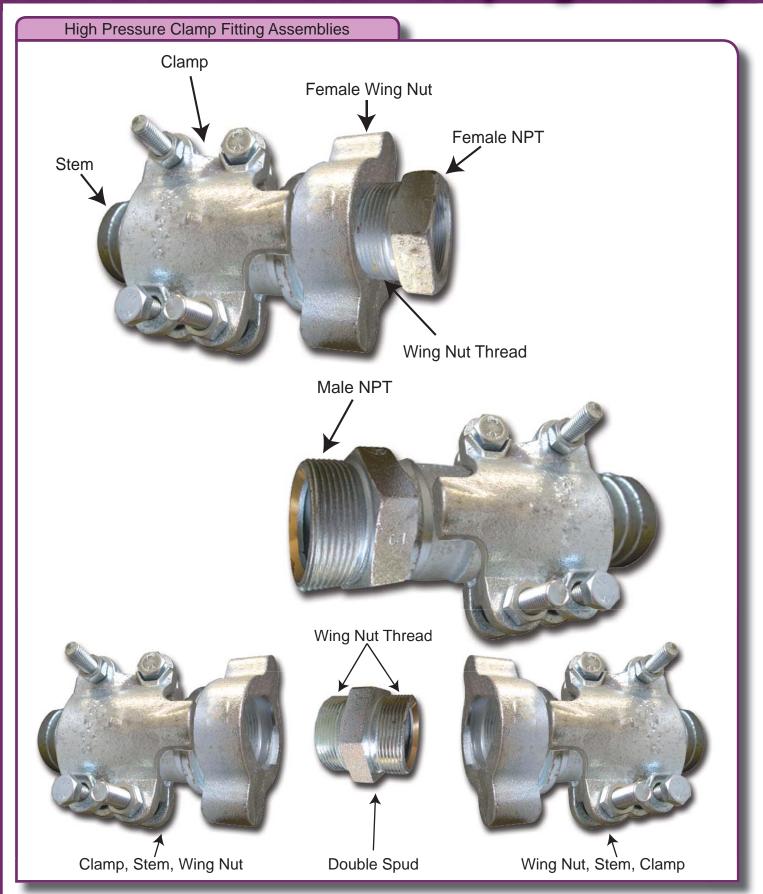






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Fluid & Air Transfer - Couplings/Fittings









Fluid & Air Transfer - High Pressure

High Pressure Clamp Fittings



High Pressure Clamps 2-Bolt Clamps

Product	Hose	Hose O.D.	
Number	I.D.	From	То
214-13	1/2"	60/64"	1-4/64"
214-12	3/4"	1-12/64"	1-20/64"

High Pressure Clamps 4-Bolt Clamps

Product	Hose Hos		e O.D.	
Number	I.D.	From	To	
214-11	1″	1-32/64"	1-44/64"	
214-07	1-1/4"	2-4/64"	2-16/64"	
214-08	1-1/2"	2-12/64"	2-24/64"	
214-00	2"	2-32/64"	2-50/64"	
214-15	2-1/2"	3-32/64"	3-60/64"	
214-10	3"	3-52/64"	4-4/64"	
214-02	4"	4-40/64"	5″	

High Pressure Female Spud Couplings C/W Clamps

Product Number	Size
215-10	1/2″
215-06	3/4"
215-11	1"
215-12	1-1/4"
215-13	1-1/2"
215-14	2"
215-15	3"
215-16	4"

High Pressure Female Stem

Product Number	Size
215-20	1/2″
215-21	3/4"
215-01	1"
215-02	1-1/4"
215-03	1-1/2"
215-04	2"
215-08	3"
215-00	4"





Fluid & Air Transfer - High Pressure

High Pressure Clamp Fittings



High Pressure Male Stem

Product Number	Size
215-22	1/2"
215-23	3/4"
215-24	1"
215-25	1-1/4"
215-26	1-1/2"
215-05	2"
215-09	3"
215-27	4"



High Pressure Double Spuds

Product Number	Size
217-15	1/2"
217-16	3/4"
217-17	1"
217-18	1-1/4"
217-19	1-1/2"
217-04	2"
217-14	3"



High Pressure Male Spud

Product Number	Size	
217-22	1/2"	
217-23	3/4"	
217-24	1"	
217-25	1-1/4"	
217-10	1-1/2"	
217-01	2"	
217-09	3"	
217-26	4"	



High Pressure Female Spud - Wing Nut Thread X NPT

Product Number	Size
217-20	1/2″
217-21	3/4"
217-07	1"
217-06	1-1/4"
217-00	1-1/2"
217-02	2"
217-08	3"
217-03	4"



High Pressure Wing Nut

Product Number	Size
216-04	1/2″
216-05	3/4"
216-00	1"
216-06	1-1/4"
216-01	1-1/2"
216-02	2"
216-07	3"
216-03	4"







Fluid & Air Transfer - High Pressure / Brass

Long Shank - Brass



Machined Brass NPSM

Long Shank Female Component

Product Number	Size
211-1F	1"



Product Number	Size
211-1M	1"





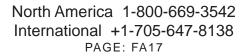
Gruvlok has a broad range of grooved products, plain end product, valving, pipe preparation tools, and various accessories.

Gruvlok couplings for grooved end pipe are available in nominal pipe sizes 1" through 30" nd in metric sizes. The variety of coupling designs provides a universal means for the connection of pipe, fittings, and pipe system components. The wide assortment of Gruvlok couplings and gaskets permits selection of the most suitable combination for a specific application, thus providing the most versatile and





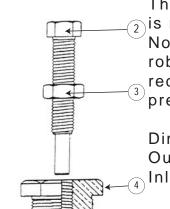
economical pipe installation.





Fluid & Air Transfer - Relief Valve

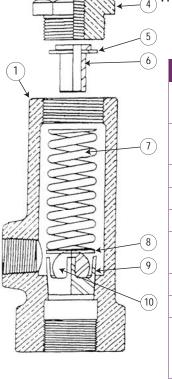
TL Relief Valve



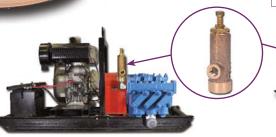
The TLRV TIME Ltd. Relief Valve
is manufactured and assembled in
Northern Ontario. This compact and
robust valve has been tested to a
recommended maximum hydrostatic
pressure of 1200 PSI.

Dimensions: 8.5" high x 3" wide

Outlet Port: 3/4" Inlet Port: 1"



Item	Description	Part #
	Relief Valve -	
	Complete Assembly	210-01
	Relief Valve body -	
1	Bare Machined	210-02
2	Adjustment screw	210-03
3	Locking nut	210-04
4	Plug	210-05
	Spring guide washer	
5	- top	210-06
6	Spring guide	210-07
7	Compression spring	210-08
8	Spring guide washer – bottom (not shown)	210-06
9	Stainless steel valve seat	210-10
,	15/16" stainless steel	2.0 10
10	ball	1187738



Relief Valve possible uses







www.timeltd.ca

Fluid & Air Transfer - Relief Valves

Other Valves



1-1/4" Relief/Regulator Valve

- 75 GPM Capacity
- 50-2000 PSI Pressure Range
- Port Size: 1-1/4 Inch NPT
- 3 Ports
- SST Valve Seat

Repair Kit

Includes:

- packing
- o-ring
- set screw
- plunger cup
- valve seat
- valve

Part #	Description	
1285315	1-1/4" Relief Valve	
5256492	Repair Kit	



3/4" 700 PSI Brass Relief Valve

Piston-Type Pressure Relief/Regulating Valve.

Brass, 3/4" Inlet & Pipe Connection, 700 psi max.

Bypasses excess liquid. Adjustable to maintain control of line pressure at any pressure within the valve's operating range. Selected pressure setting firmly held in place by locknut. Extra large valve passages to handle large flows.

Part #

32-681534700





Fluid & Air Transfer - Valves

Mortrol Valve



Flow Diagrams

Standard

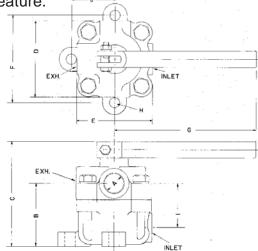
MORTROL VALVE

3 & 4 way - 250 PSI Service

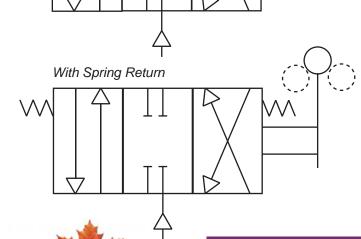
No other operating valves have all of these features:

- Pack-less construction no valve packing to replace; no maintenance or service costs
- Fast or throttling action as desired
- No air or pressure loss through valve leakage wear-proof disc and seat
- Shielded sealing surfaces
- Line-pressure seals valve at all times
- 85% full pipe area through valve
- Position of handle indicates direction of flow
- Can be converted to a 3-way valve by plugging one hole





Product Number	Size	Valve Type
300-00	1/2"	Standard
300-01	1/2"	Spring return to normal
302-00	3/4"	Standard
302-01	3/4"	Spring return to normal
304-00	1"	Standard
304-01	1"	Spring return to normal



Pipe Size							Weight in			
Α	В	С	D	Е	F	G	Н	1	J	Lbs.
1/2"	2-9/16"	4-1/8"	3-1/8"	3-5/16"	3-3/4"	5-3/4"	7/16"	1-13/16"	1-7/8"	6
3/4"	3-5/16"	5-7/16"	4-1/16"	4-1/8"	4-5/8"	7-1/2"	17/32"	2-5/16"	2-5/16"	11
1″	3-9/16"	5-3/4"	5″	5-1/8"	5-3/8"	8-1/2"	9/16"	2-5/8"	2-11/16"	16



Made in Canada by:





Fluid & Air Transfer - Valves

Valves

STAINLESS STEEL BALL VALVES

Features

- Full port / 2-piece body
- NPT ends to ANSI B1.20.1
- Blowout-proof stem
- Adjustable packing nut
- Locking lever handle
- Actuator mounting pad
- Floating ball
- P-T 450° F @ 100 PSI



1000 PSI	2000 PSI				
Product Number	Product Number	Size			
46-10-025	46-12-025	1/4"			
46-10-038	46-12-038	3/8"			
46-10-050	46-12-050	1/2"			
46-10-075	46-12-075	3/4"			
46-10-100	46-12-100	1"			
46-10-125	46-12-125	1-1/4"			
46-10-150	46-12-150	1-1/2"			
46-10-200	46-12-200	2"			
46-10-300	* 46-12-300	3"			
46-10-400	* 46-12-400	4"			
* NOTE: 46-12-300/400 are rated at 1500 PSI					

^{*} NOTE: 46-12-300/400 are rated at 1500 PS

BRASS BALL VALVES

Features

- Full port / 2-piece body
- Blowout-proof stem
- Adjustable packing gland
- Chrome plated ball
- Class 150 WSP, 600 WOG
- ANSI B1.20.1 NPT
- CRN number available on request
- Markings to MSS-SP25
- CAN / CGA 3, 16, 9.1-M97, CR91-002
- ANSI / ASME Z21.15, 16.33, US REQ 3-88
- CSA Approved
- Locking Handle



Product Number	Size
46-01-025	1/4"
46-01-038	3/8"
46-01-050	1/2"
46-01-075	3/4"
46-01-100	1"
46-01-125	1-1/4"
46-01-150	1-1/2"
46-01-200	2"
46-01-300	3"
46-01-400	4"

Size

3/8"

BRASS WATER VALVE

Features:

- Ruggedly built for severe mine service
- Bronze body and extra heavy brass stem
- Teflon valve seat gives longer service
- PTFE Stem Packing
- Female pipe thread 3/8" NPT



	No.
	Made in Canada by:
/	MITIME

Product Number

206-00



North America 1-800-669-3542 International +1-705-647-8138 PAGE: FA21



Fluid & Air Transfer - TIME Ball Valve

TIME SG Iron Ball Valves



Manufactured for use in a rugged, underground, mine environment.

Key Benefits of TIME's Full Flow Lockable Ball Valve:

- Rugged SG Iron Cast body
- Full Flow valve prevents turbulent flows / restrictions
- 316 Stainless Steel Ball minimizes corrosion
- Floating Ball Design creates a postive seal on the ball seat when valve is closed
- NPT Threads
- Spindle & Thrust washer & nut made from 316 Stainless Steel to minimize corrosion.
- PTFE Spindle Seals & Ball Seats perfect for use in an underground environment, designed to not be affected by harsh mediums. They also do not crack, swell or breakdown.
- 90 degree quarter turn Lever Handle
- Sizes range from 1/2" up to 2"

Safety Features:

- Lockable handle in both the on and off positions
- Tamper-proof design
 - The locking portion of the valve is built in to the handle and the body, not an add-on
 - incorporates a spring pin in the nut of the handle to prevent removal.

Product Number	Size
MVLH-1/2PF	Valve 1/2" Female NPT
MVLH-1PF-1PF	Valve 1" Female NPT
MVLH-1-1/2PF	Valve 1-1/2" Female NPT
MVLH-2PF	Valve 2" Female NPT
MVLH-2VC-1PF	Valve 2" Grooved to 1" Female NPT (Header Valve)





TIME SG Iron Ball Valves

3rd Party Testing results:

Hydrostatic Pressure Test of Ball Valves for TIME Limited

Page 2 of 3 Report No. 13-06-C0161 EXOVO

1.0 INTRODUCTION

This report contains the results from the hydrostatic pressure test on two (2) ball valves for TIME Limited.

The received test samples were assigned with Exova's sample numbers and cross referenced to TIME Limited's sample description as listed:

Exova Sample No.

Description

13-06-C0161-1 & 2

1" NPTF Full Flow Ball Valve, Sample # 1 & 2

2.0 TEST EQUIPMENT

- Haskel Hydrostatic Booster 20 kip, S/N 0912-0446
- Pressure Gauge 20,000 psi range, MII # B01161, Ref.
- Pressure Transducer 10,000 psi range, MII # B07476, Calibrated
- National Instrument PCI-6071, DAQ-Labview, MII # B07402, Calibrated

3.0 TEST PROCEDURE

The hydrostatic pressure test was conducted in accordance with the client's instructions as briefly outlined as follows:

- The hydrostatic pressure test was conducted at ambient room condition.
- Each valve was connected to a hydrostatic pressure intensifier then filled with water and freed of entrapped air before the pressure test was conducted.
- The pressure was gradually applied until failure occurred to obtain the burst pressure.
- The test sample was visually inspected for any evidence of leakage or signs of structural deformation during the pressure test and documented any mode of failures.

4.0 RESULTS

The hydrostatic pressure test results of two 1" NPTF Full Flow Ball Valves are summarized in Table 1 below. Photographs of test set-up and failure modes are presented in Appendix A, Figures 1A to 3A.

Table 1: Hydrostatic Test Results

Sample #	Burst Pressure (psi)	Comments		
13-06-C0161-1	6,753	Body fractured.		
13-06-C0161-2	6,613	Body fractured.		



Figure 2A: Failure mode of Sample# 13-06-C0161-1, Body fractured at 6,753 psi.



Figure 3A: Failure mode of Sample# 13-06-C0161-2, Body fractured at 6,613 psi.





Fluid & Air Transfer - Misters

Misters

PROPTEC ROTARY MISTER

The Proptec Rotary Mister consistently produces perfectly sized droplets that travel far down mine drifts and encapsulates airborne dust before falling. It sequesters dust without eroding mine ramps, drifts and travel ways. It reduced water consumption by over 80% to reduce both water and energy for significant cost savings.

The Proptec Rotary Mister was the improved result of early research at Michigan State University. Designed by an experienced engineering team, the Proptec Rotary Mister can be used in a vast range of applications that require reliable, robust atomization of liquids. These atomizers operate with any type of water without clogging. Proptec Rotary Mister effectively controls all types of dust including hazardous & explosive types found in mines. It and performs with high reliability and low maintenance even in extreme conditions.

The Proptec Rotary Mister represents "State of the Art" in dust control technology.

MINE TESTED IN SUDBURY, ON CANADA

The Proptec Rotary Mister has been tested at a mine in Sudbury, Ontario, at locations where dust is a problem — in mine drifts and travel ways, at shotcrete transfer points and hoppers, at a crusher station, at rock dumping sites and in raise bore applications.

Available air powered, electric, or hydraulic.

Features:

- easy to install
- two settings: low, 1 gpm, high, 3 gpm
- maintenance-free
- will not clog

Benefits:

- · washes mine air clean of dust
- · cools and refreshes mine air with billions of active droplets
- efficiently utilizes water at reduced volumes conserving water & energy
- will not erode ramps or drifts
- · can knock down any dust.

FLR (filter, lubricator, regulator) Assembly included in each unit.

Product Number	Description
PT2A-XM100	Proptec Air Rotary Mister Assembly
PT2E-XM200	Proptec Electric Rotary Mister Assembly
PT10AS01HBSB	Proptec Hydraulic Rotary Mister Assembly
47-2016	Portable Proptec Air Rotary Mister







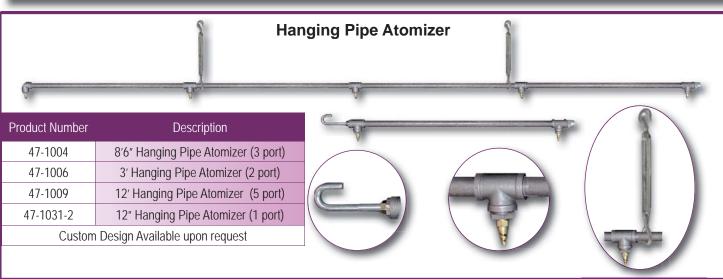






Fluid & Air Transfer - Atomizers







Product Number	Description			
TF6W	1/4" Brass #6 Nozzle			
TF8W	1/4" Brass #8 Nozzle			
Other Nozzles Available upon request				

Fire Nozzles

Class A & B Fire Nozzles

- IPT Thread
- 1" or 1½" Adjustable Fog/Stream/Shut-off
- High impact POLYCARBONATE NOZZLES
- Max rated flow 78 gpm at 100 PSI
- Molded in Red

Product Number	Size	Description
10IPT	1"	For Class A B fires
22-06	1-1/2"	For Class A, B fires











Fluid & Air Transfer - Air Movers

Air Movers

Air Movers, or air horns, are used wherever there is a need to disperse fumes, move air into confined spaces, cool men working in elevated temperature conditions, or cool machinery or products with a blast of directed air. Common applications are found in refineries, chemical plants, utilities and congeneration units, metal fabrication plants, paper and pulp plants, shipyards, the marine industry, the steel industry and the underground mining industry.

The air movers have been tested at an independent laboratory. The listed free flow ratings are based on tests to AMCA Standard 210. Under identical testing situations, The air movers exceeded all the air flow ratings of competitively manufactured air movers.

Features of the Air Movers

- No moving parts.
- Used for venting hazardous areas.
- Maintenance is minimal.
- Can be used as a blower or exhauster.
- Operates on compressed air or steam.
- Connection for ground wire.
- Tested at an independent laboratory to AMCA Standard 210, equaling or exceeding the air flow of competitively manufactured air movers!

Part No	Description	Inside Dia. of Base	Overall Length	Outside Dia. of Base	Dia. at top of Horn	NPT Size	Bolt Circle Dia.	Base Slot Dia.	Weight
TEX-TX-3AMS	3" Air Mover - Short	3"	16.75"	7.31"	7"	1/2"	6.56"	0.4"	5.5 lbs
TEX-TX-3AM	3" Air Mover	3"	30.5"	7.31"	7"	1/2"	6.56"	0.4"	8.5 lbs
TEX-TX-6AM	6" Air Mover	6"	44.25"	11.25"	12.5"	1"	10.5"	0.4"	22.3 lbs
TEX-TX-8AM	8" Air Mover with Metal Horn	8"	46.06"	14.37"	14.25"	1"	13.62"	0.5"	36 lbs
TEX-TX-10AM	10" Air Mover with Metal Horn	10"	48"	17"	15.75"	1"	15.5"	1"	42.1 lbs

65PJADJ-TNT

Impact Sprinkler

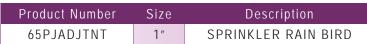
Performance

1" (26/34) Riser-Mounted Impact Head Used for Slope or Large, Non-Turf-Area Applications

- Flexibility Straight-through flow for superior performance in dirty water
- Reliability Proven impact drive
- Durability Rugged brass and stainless steel construction

Features

- Proven impact drive.
- Long-wearing TNT bearing.
- Straight-through flow for superior performance in dirty water.
- Full-circle or adjustable arc 20° to 340°.
- Precision Jet tube (PJ™) minimizes side splash.
- Stainless steel distance control diffuser pin allows up to 25% radius reduction.
- Rugged brass, bronze and stainless steel construction.
- FP trip for full- or part-circle operation.



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Fluid & Air Transfer - Header Manifold

TIME Header Manifolds



TIME header manifolds are designed and manufactured in various configurations, to allow air/water control in a number of mining applications. To be used in conjunction with the TIME ball valve.

** Can be manufactured to custom specifications **

Product Number	Size
525-06	Header Manifold 2" female NPT one end with 4 X 1" female NPT
525-08	Header Manifold 2" grooved one end with 5 X 1" female NPT
525-09	Header Manifold 2" grooved one end with 3 X 1" female NPT
525-10	Header Manifold 2" grooved both ends with 3 X 1" male NPT
525-11	Header Manifold 2" grooved both ends with 3 X 1" female NPT
525-12	Header Manifold 2" grooved both ends with 4 X 1" male NPT

Potassium Acetate Liquid Deicer

Potassium Acetate represents a significant improvement on liquid de-icing fluids. Potassium Acetate is clear, ordorless, and is an easy-handling solution. The unique features and benefits of Potassium Acetate make it an ideal alternative to conventional ice melt applications:

Environmentally Friendly

- non-toxic and non-hazardous to plant and animal life
- non-damaging to most surfaces including concrete, metals, wood, gutters, lawns, and vegetation
- has a very low biological oxygen demand (BOD*) rate and contains no phosphates or urea.

High Performance Liquid Ice Melt

- works longer and better than magnesium chloride, calcium chloride, and traditional rock salts!
- · improved wetting and spreading
- fluid sticks to the surface and lasts longer between applications
- rapid drying making treated surfaces available for use in less time



* The lower the BOD rate, the quicker it decomposes into environmentally safe components. Chloride-based de-icers (calcium and magnesium chloride) accumulate in the environment as harmful salts which can be damaging to plant and animal life - including fish.





Fluid & Air Transfer

Ventilation Closer

The Ventilation Closer is used in mines to close off air ducts in unused portions of the mine.

- The Ventilation Closer can be installed on active ducting
- Gear motor has 30:1 output ration to provide fluent, speedy opening and closing
- Designed with lifting eyes for easy installation
- Designed with locking pegs to lock onto guide wire for better security



Installed Ventilation Closer



Product Number	Description		
47-1015	Ventilation Closer		



Blow Tubes

- Available in copper, steel and aluminum
- Available in different lengths and I.D.

Product Number	Size
221-07BT	Blow Tube Copper 1/2" x 12'
221-07BT10C	Blow Tube Copper 1/2" x 10'
221-07BT10S	Blow Tube Steel 1/2" x 10'
221-08BT	Blow Tube Copper 3/4" x 12'
47-1012	Blow Tube Aluminum 1-1/2" x 6'
47-1012X2	Blow Tube Aluminum 2" x 6'
47-1012X3/4	Blow Tube Aluminum 3/4" x 8'



Lubricator is designed for use with rock drill oil or rock drill grease

- Wide throat filler
- Replaceable pipe bushings
- One piece rugged malleable steel
- Weighted sipper
- Straight-through bore design

Lubricator Specifications		
Max Working Pressure	250 psi.	
Oil Capacity	1½ pint	
Maximum Volume	75-450 cfm	
Weight	11.5 lb	
Pipe Thread	1¼ inch	
Bushing Size	1¼" X 1" and 1¼" X ¾	
Service	Handheld Drills, Small Hoists	

Product Number	Description
111-00	Lubricator



North America 1-800-669-3542 International +1-705-647-8138 PAGE: FA28



Black Iron Pipe Fittings





Bushing, male to female

Product Number	Size	Product Number	Size
BI-110-BA	1/4" to 1/8"	BI-110-KE	1-1/2" to 3/4"
BI-110-CA	3/8" to 1/8"	BI-110-KH	1-1/2" to 1"
BI-110-CB	3/8" to 1/4"	BI-110-KJ	1-1/2" to 1-1/4"
BI-110-DA	1/2" to 1/8"	BI-110-MD	2" to 1/2"
BI-110-DB	1/2" to 1/4"	BI-110-ME	2" to 3/4"
BI-110-DC	1/2" to 3/8"	BI-110-MH	2" to 1"
BI-110-EB	3/4" to 1/4"	BI-110-MJ	2" to 1-1/4"
BI-110-EC	3/4" to 3/8"	BI-110-MK	2" to 1-1/2"
BI-110-ED	3/4" to 1/2"	BI-110-NH	2-1/2" to 1"
BI-110-HB	1/4" to 1"	BI-110-NJ	2-1/2" to 1-1/4"
BI-110-HC	1" to 3/8"	BI-110-NK	2-1/2" to 1-1/2"
BI-110-HD	1" to 1/2"	BI-110-NM	2-1/2" to 2"
BI-110-HE	1" to 3/4"	BI-110-PM	3" to 2"
BI-110-JC	1-1/4" to 3/8"	BI-110-PN	3" to 2-1/2"
BI-110-JD	1-1/4" to 1/2"	BI-110-SM	4" to 2"
BI-110-JE	1-1/4" to 3/4"	BI-110-SN	4" to 2-1/2"
BI-110-JH	1" to 1-1/4"	BI-110-SP	4" to 3"
BI-110-KD	1-1/2" to 1/2"		

Long Nipple

Product Number	Size	Product Number	Size
BI-113-A2	1/8" x 2"	BI-113-E2	3/4" x 2"
BI-113-A3	1/8" x 3"	BI-113-E3	3/4" x 3"
BI-113-A4	1/8" x 4"	BI-113-E4	3/4" x 4"
BI-113-A6	1/8" x 6"	BI-113-E6	3/4" x 6"
BI-113-B1.5	1/4" x 1-1/2"	BI-113-H2	1" x 2"
BI-113-B2	1/4" x 2"	BI-113-H3	1" x 3"
BI-113-B3	1/4" x 3"	BI-113-H4	1" x 4"
BI-113-B4	1/4" x 4"	BI-113-H6	1" x 6"
BI-113-B5	1/4" x 5"	BI-113-J2	1-1/4" x 2"
BI-113-B6	1/4" x 6"	BI-113-J3	1-1/4" x 3"
BI-113-C2	3/8" x 2"	BI-113-K2	1-1/2" x 2"
BI-113-C4	3/8" x 4"	BI-113-K3	1-1/2" x 3"
BI-113-C6	3/8" x 6"	BI-113-K4	1-1/2" x 4"
BI-113-D1.5	1/2" x 1-1/2"	BI-113-K6	1-1/2" x 6"
BI-113-D3	1/2" x 3"	BI-113-M2.5	2" x 2-1/2"
BI-113-D4	1/2" x 4"	BI-113-M3	2" x 3"
BI-113-D6	1/2" x 6"	BI-113-M4	2" x 4"
BI-113-E1.5	3/4" x 1-1/2"	BI-113-M6	2" x 6"

All of our Black Iron fittings are North American Made.

TIME Ltd. will supply the Canadian Registration Numbers (CRN) upon request.







Reducing Coupling

Product Number	Size
BI-119-BA	1/4" to 1/8"
BI-119-CA	3/8" to 1/8"
BI-119-DB	1/2" to 1/4"
BI-119-DC	1/4" to 3/8"
BI-119-EA	3/4" to 1/8"
BI-119-EB	3/4" to 1/4"
BI-119-EC	3/4" to 3/8"
BI-119-ED	3/4" to 1/2"
BI-119-HB	1" to 1/4"
BI-119-HC	1" to 3/8"
BI-119-HD	1" to 1/2"
BI-119-HE	1" to 3/4"
BI-119-JH	1-1/4" to 1"
BI-119-KH	1-1/2" to 1"
BI-119-MH	2" to 1"
BI-119-MJ	2" to 1-1/4"
BI-119-MK	2" to 1-1/2"

Tee

Product Number	Size
BI-101-A	1/8″
BI-101-B	1/4"
BI-101-C	3/8"
BI-101-D	1/2"
BI-101-E	3/4"
BI-101-H	1"
BI-101-J	1-1/4"
BI-101-K	1-1/2"
BI-101-M	2"
BI-101-N	2-1/2"
BI-101-P	3"
BI-101-S	4"

Cross

Product Number	Size
BI-102-A	1/8"
BI-102-B	1/4"
BI-102-C	3/8"
BI-102-D	1/2"
BI-102-E	3/4"
BI-102-H	1"
BI-102-J	1-1/4"
BI-102-K	1-1/2"
BI-102-M	2"
BI-102-N	2-1/2"
BI-102-P	3"
BI-102-S	4"







Black Iron Pipe Fittings







Plug

Product Number	Size
BI-109-A	1/8″
BI-109-B	1/4"
BI-109-C	3/8"
BI-109-D	1/2"
BI-109-E	3/4"
BI-109-H	1"
BI-109-J	1-1/4"
BI-109-K	1-1/2"
BI-109-M	2"
BI-109-N	2-1/2"
BI-109-P	3"
BI-109-S	4"

Coupling

Product Number	Size
BI-103-A	1/8″
BI-103-B	1/4"
BI-103-C	3/8"
BI-103-D	1/2"
BI-103-E	3/4"
BI-103-H	1"
BI-103-J	1-1/4"
BI-103-K	1-1/2"
BI-103-M	2"
BI-103-N	2-1/2"
BI-103-P	3"
BI-103-S	4"

Short Nipple

Product Number	Size
BI-112-A	1/8″
BI-112-B	1/4″
BI-112-C	3/8"
BI-112-D	1/2″
BI-112-E	3/4"
BI-112-H	1″
BI-112-J	1-1/4"
BI-112-K	1-1/2"
BI-112-M	2″
BI-112-N	2-1/2"
BI-112-P	3″
BI-112-S	4"







45° Elbow

Product Number	Size
BI-105-A	1/8″
BI-105-B	1/4"
BI-105-C	3/8"
BI-105-D	1/2"
BI-105-E	3/4"
BI-105-H	1"
BI-105-J	1-1/4"
BI-105-K	1-1/2"
BI-105-M	2"
BI-105-N	2-1/2"
BI-105-P	3"
BI-105-S	4"

Union

Product Number	Size
BI-104-A	1/8"
BI-104-B	1/4"
BI-104-C	3/8"
BI-104-D	1/2"
BI-104-E	3/4"
BI-104-H	1"
BI-104-J	1-1/4"
BI-104-K	1-1/2"
BI-104-M	2"
BI-104-N	2-1/2"
BI-104-P	3"
BI-104-S	4"

45° Street Elbow

Product Number	Size
BI-124-A	1/8″
BI-124-B	1/4"
BI-124-C	3/8"
BI-124-D	1/2"
BI-124-E	3/4"
BI-124-H	1″
BI-124-J	1-1/4"
BI-124-K	1-1/2"
BI-124-M	2"
BI-124-N	2-1/2"
BI-124-P	3"
BI-124-S	4"









Cap

Product Number	Size
BI-108-A	1/8"
BI-108-B	1/4"
BI-108-C	3/8"
BI-108-D	1/2"
BI-108-E	3/4"
BI-108-H	1"
BI-108-J	1-1/4"
BI-108-K	1-1/2"
BI-108-M	2"
BI-108-N	2-1/2"
BI-108-P	3"
BI-108-S	4"

90° Elbow

Product Number	Size
BI-100-A	1/8″
BI-100-B	1/4″
BI-100-C	3/8"
BI-100-D	1/2"
BI-100-E	3/4"
BI-100-H	1″
BI-100-J	1-1/4"
BI-100-K	1-1/2"
BI-100-M	2"
BI-100-N	2-1/2"
BI-100-P	3"
BI-100-S	4"

90° Street Elbow

Product Number	Size
BI-116-A	1/8″
BI-116-B	1/4″
BI-116-C	3/8"
BI-116-D	1/2"
BI-116-E	3/4"
BI-116-H	1″
BI-116-J	1-1/4"
BI-116-K	1-1/2"
BI-116-M	2"
BI-116-N	2-1/2"
BI-116-P	3"
BI-116-S	4"

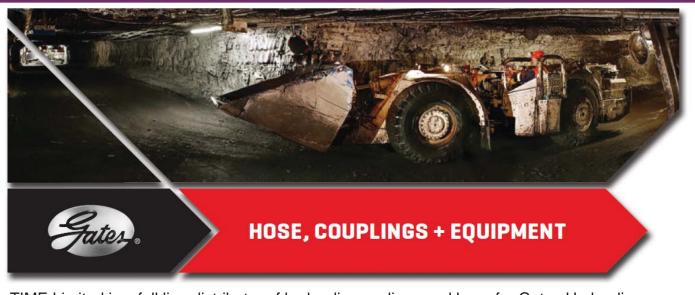






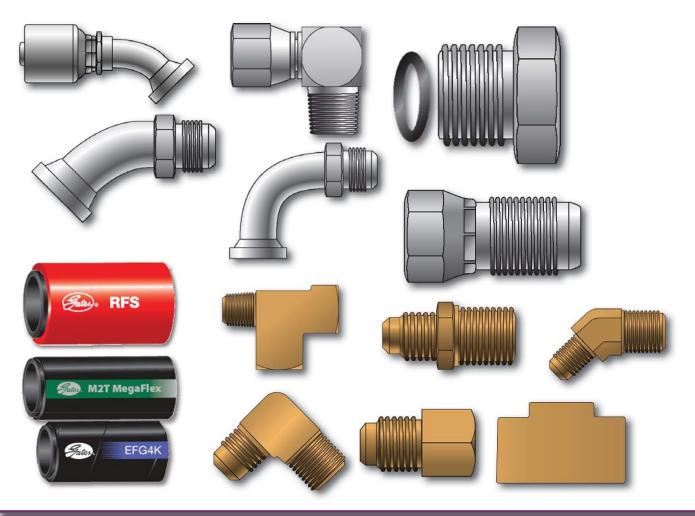
Fluid & Air Transfer - Hydraulics

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