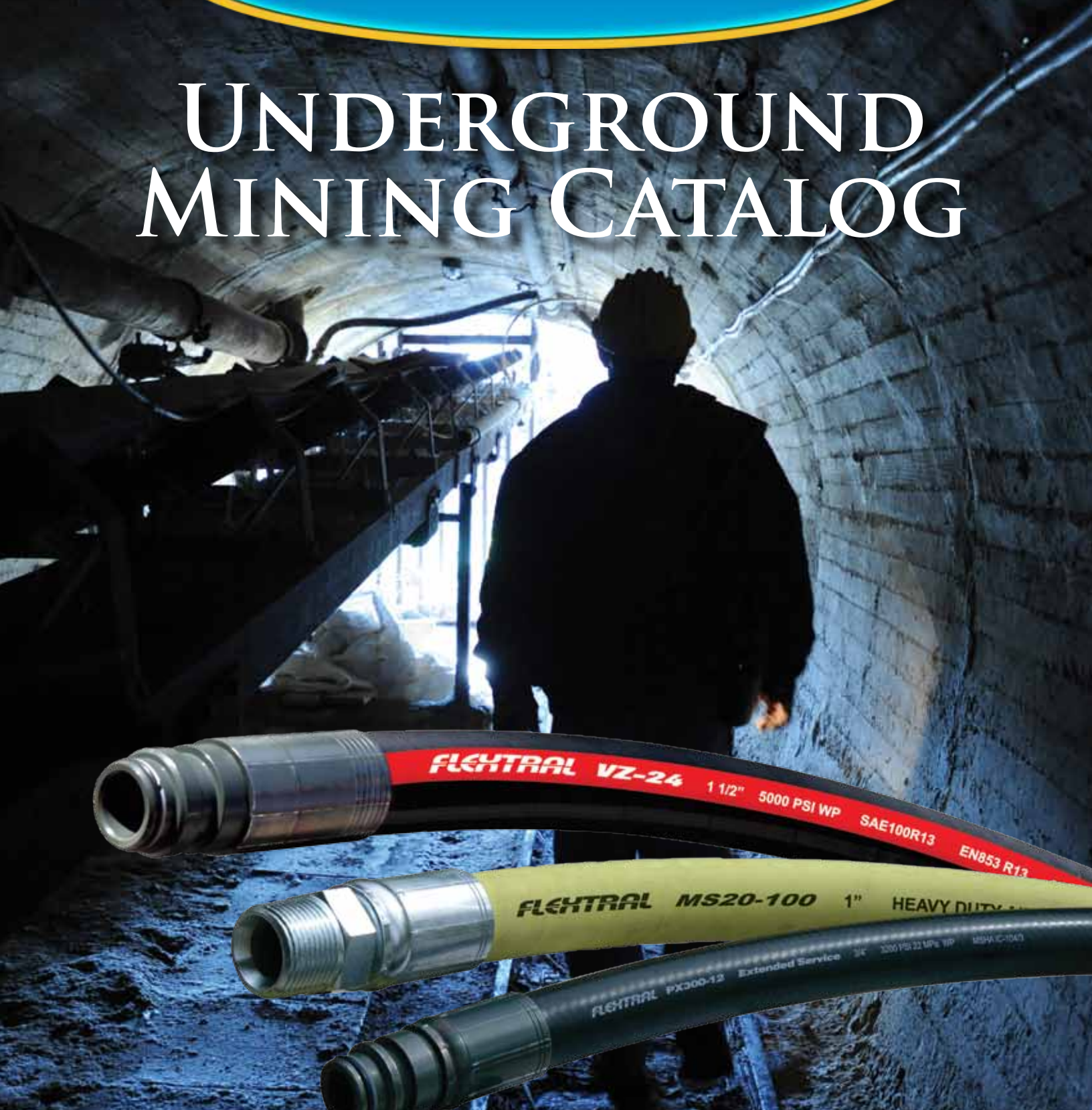




# UNDERGROUND MINING CATALOG



**FLEXTRAL VZ-24** 1 1/2" 5000 PSI WP SAE100R13 EN853 R13

**FLEXTRAL MS20-100** 1" HEAVY DUTY

**FLEXTRAL PX300-12** Extended Service 3/4" 3000 PSI 22 MPa WP MSHA IC-1043



## Technical Data

---

Recommended Practices for Hydraulic Hose Assemblies - SAE J1273 1996	4
Selection of Hose	5
How to Measure Flextral Assemblies	6

## Hose

---

PX300	Extended Service Hydraulic Hose	7
EX	2SN Two Wire Hose	7
NZ	Four Spiral Hose	8
VZ	100R13 Six Spiral Hose	8
EM	Mine Emulsion Hose	9
MS20	Yellow Mine Spray Hose	9

## Couplings

---

E	Standard Stecko Male Connector – No Skive	10
S	Super Stecko Male Connector – External Skive	10
SF	Super Stecko Ferrule – External Skive	10
K	Super Stecko Male Connector – Internal/External Skive	10
KF	Super Stecko Ferrule – Internal/External Skive	11
EMV	Internal Expanded Grooved Ends	11
EMF	Internal Expanded Ferrule	11

## Standard Adapters

---

ST0304C	Female Cap	12
ST2408	Male Plug	12
ST5000	F-ST / F-ST Straight	12-13
ST5504	90° F-ST / F-ST	14
ST5605	F-ST / F-ST / F-ST TEE	14 -15
ST5652	F-ST / F-ST / F-ST / F-ST CROSS	16
ST2404	M-ST / NPT Straight	16
ST7002	M-ST / M-BSPP Straight	17



## Standard Adapters (cont.)

---

ST6402	M-BSPP / F-ST Swivel Straight	18
ST6502 45°	M-ST / F-ST Swivel	19
STBV6504	M-ST / F-ST Swivel Ball Valve	19
STBV6565	F-ST / F-ST Swivel Ball Valve	19
ST6502	Staple (Carbon Steel)	20
ST0364	Staple (Stainless)	20
OST	Standard Stecko O-Ring	21
BST	Standard Stecko Backup Ring	21

## Super Adapters

---

SST5504C	Female Cap	22
SST2408	Male Plug	22
SST5000	F-SST / F-SST Straight	23
SST5000	90° F-SST / F-SST	23
SST5605	F-SST / F-SST / F-SST TEE	24
SST6500	90° M-SST / F-SST Swivel	24
SST6504	M-SST / F-SST Swivel Straight	24
SSTBV6504	M-SST / F-SST Swivel Ball Valve	25
SSTBV6565	F-SST / F-SST Swivel Ball Valve	25
SST2404	M-SST / M-BSPP Straight	26
SST6505	F-SST Swivel / M-BSPP Straight	26
SST0364	Staple (Stainless)	27
OSST	O-Ring	27
BSST	Backup Ring	27





## Recommended Practices for Hydraulic Hose Assemblies - SAE J1273 1996

### Foreword

The SAE Recommended Practices is intended as a guide to consider when selecting, routing, fabricating, installing, replacing, maintaining, and storing hose for fluid-power systems. It is subject to change to keep pace with experience and technical advances. For those new to hose use in fluid power systems, this guide outlines practices to note during each phase of system design and use. Experienced designers and users skilled in achieving proper results, as well as the less experienced, can use this outline as a list of considerations to keep in mind.

Fluid-power systems are complex and require extensive knowledge of both the system requirements and the various types of hose. Therefore, all inclusive, detailed, step by step instructions are not practical and are beyond the scope of this document. Less experienced designers and users who need more information can consult specialists such as hose suppliers and manufacturers. This guide can improve the communication process.

### Safety Considerations

These recommended practices involve safety considerations; note these carefully during all phases of design and use of hose systems. Improper selection, fabrication, installation, or maintenance of hose and hose assemblies for fluid power systems may result in serious personal injury or property damage. These recommended practices can reduce the likelihood of component or system failure, thereby reducing the risk of injury or damage.

1. Scope - SAEJ1273 provides guidelines for selection, routing, fabrication, installation, replacement, maintenance, and storage of hose and hose assemblies for fluid-power systems. Many of these SAE Recommended Practices also may be suitable for other hoses and systems.

#### 2. Reference

2.1 Applicable publications - The following publications form a part of this specification to the extent specified herein, Unless otherwise specified, the latest issue of SAE publications shall apply.

2.1.1 SAE publications - Available for SAE, 400 Commonwealth Drive, Warrendale, PA 15096-000

SAEJ343 - Test and Procedures for SAE 100 R Series Hydraulic Hose and Hose Assemblies  
SAEJ514 - Hydraulic Tube Fittings

SAEJ517 - Hydraulic Hose SAEJ 1927 - Cumulative Damage Analysis for Hydraulic Hose Assemblies

2.1.2 ISO publications - Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002

ISO 3457 - Earth moving machinery - Guards and shields definitions and specifications.

#### 3. Definitions

These explanations serve only to clarify this document and are not intended to stand alone. They are presented sequentially, with the former helping to explain the latter. 3.1 Fluid-power Energy transmit-

ted and controlled using pressurized hydraulic fluids or compressed air. 3.2 Hose - flexible conductor. In this document, the term hose also may refer to a hose assembly with related accessories used in fluid power applications. 3.3 Hose fitting or fitting - connector which can be attached to the end of a hose. 3.4 Hose assembly - hose with hose fittings attached.

3.5 Hose failure - occurrence in which a hose stops meeting system requirements. 3.6 Hose service life - length of time a hose meets system requirements without needing replacement.

4. Safety considerations - listed in 4.1 to 4.7 are some potential conditions and situations that may lead to personal injury and/or property damage. This list is not necessarily all inclusive. Consider reasonable and feasible means, including those described in this section, to reduce the risk of injuries or property damage.

Training, including the information in this document, for operators, maintenance personnel, and other individuals working with hoses under pressure is encouraged.

4.1 Fluid injections - fine streams of escaping pressurized fluid can penetrate skin and enter a human body. These fluid injections may cause severe tissue damage and loss of limb. Consider various means to reduce the risk of fluid injections, particularly in areas normally occupied by operators. Consider careful routing, adjacent components, warnings, guards, shields, and training programs.

Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Avoid contact with escaping fluids. Treat all leaks as though pressurized and hot enough to burn skin. Never use any part of your body to check a hose for leaks. If a fluid-injection accident occurs, see a doctor immediately. **DO NOT DELAY OR TREAT AS A SIMPLE CUT!** Any fluid injected into skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should consult a knowledgeable medical source.

4-2 Whipping hose - if a pressurized hose assembly blows apart, the fittings can be thrown off at high speed, and the loose hose can flail or whip with great force. This is particularly true in compressible-fluid systems. When the risk exists, consider guards and restraints to protect against injury.

4-3 Burns from conveyed fluids - fluid-power media may reach temperatures that can burn human skin. If there is risk of burns from escaping fluid, consider guards and shields to prevent injury, particularly in areas normally occupied by operators.

4-4 Fire and explosions from conveyed fluids - most fluid-power media, including fire-resistant hydraulic fluids, will burn under certain conditions. Fluids which escape from pressurized systems may form a mist or fine spray which can flash or explode upon contact with an ignition source. Consider selecting, guarding, and routing hose to minimize the risk of combustion (see Section 5 and ISO 3457).

4.5 Fire and explosions from static-electric discharge - fluid passing through hose can generate static electricity, resulting in static electric discharge. This may create sparks that can ignite system fluids or gases in the surrounding atmosphere.

When this potential exists, select hose specifically designed to carry the static-electric charge to ground.



# Selection of Hose

## System type

The selection and installation of hoses must be in relation to pump pressure, operating cycle, inner diameters of pipes, and type of fluid.

## Operating pressure

Hose lines are rated for continuous operation at the maximum operating pressures specified for the hose.

Generally, the operating pressure is one fourth the hose minimum burst pressure, thus meeting the SAE recommended safety factor of 4 to 1.

## Pressure surges

Almost all hydraulic systems develop pressure surges which may exceed relief valve settings and affect the service life of hose and system components. In systems where surges are severe, select a hose that will increase the safety factor.

Conversely, in systems where surges are slight or non-existent, a smaller safety factor may be used.

## Operating temperatures

Operating temperatures specified refer to maximum temperature of the fluid or gases being conveyed (with peaks up to 300°F or 149°C). Continuous operation at or near maximum rated temperatures will materially reduce the service life of the hose.

## Ambient temperatures

Very high or low ambient (outside of hose) temperatures will affect cover and reinforcement materials, thus influencing the life of the hose.

## Bend radius

Recommended minimum bend radii are based on maximum operating pressures with no flexing of the hose.

## Vibration and flexing

Hose lines are designed to withstand maximum vibration and flexing.

## Volumetric expansion

Hose is normally manufactured with a neutral braid angle to reduce volumetric expansion.

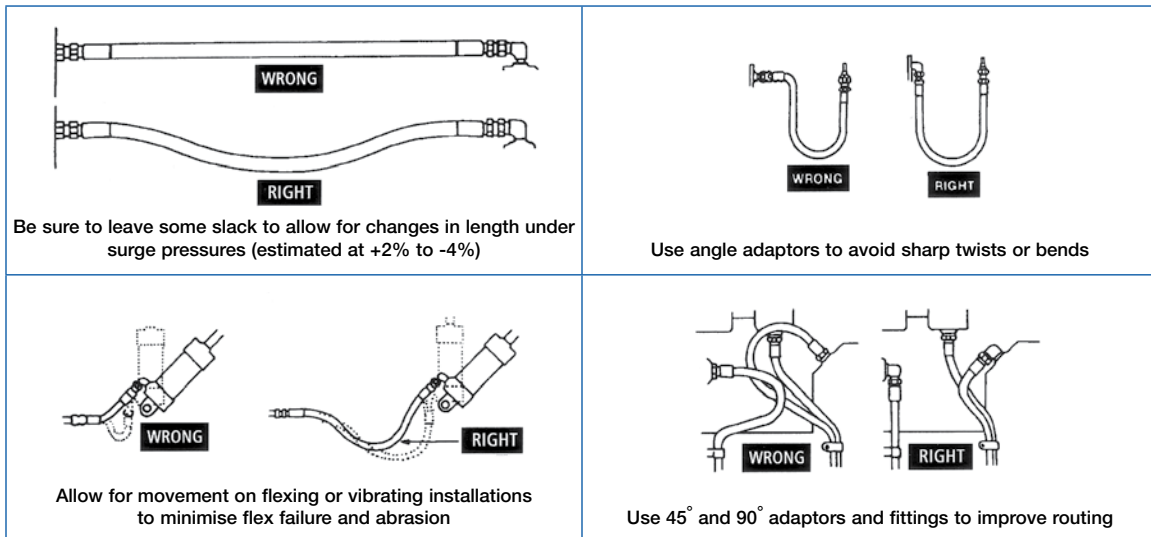
## Gaseous fluid systems

High pressure gaseous systems are very hazardous. Hose lines should be adequately protected from external shock and mechanical or chemical damage.

They should also be suitably protected to prevent whiplash action in the event of failure for any reasons.

It is recommended to increase safety factor.

## Hose Installation Guide



## Hose and Fitting Compatibility

SAE J517 hose from one manufacturer is usually not compatible with SAE J516 fittings supplied by another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written assembly instructions or the manufacturer directly before intermixing hose and fittings from two manufacturers. Similarly, assembly equipment from one manufacturer is usually not interchangeable with that of another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written instructions or the manufacturer directly for proper assembly equipment. Always follow the manufacturer's instructions for proper preparation and fabrication of hose assemblies.



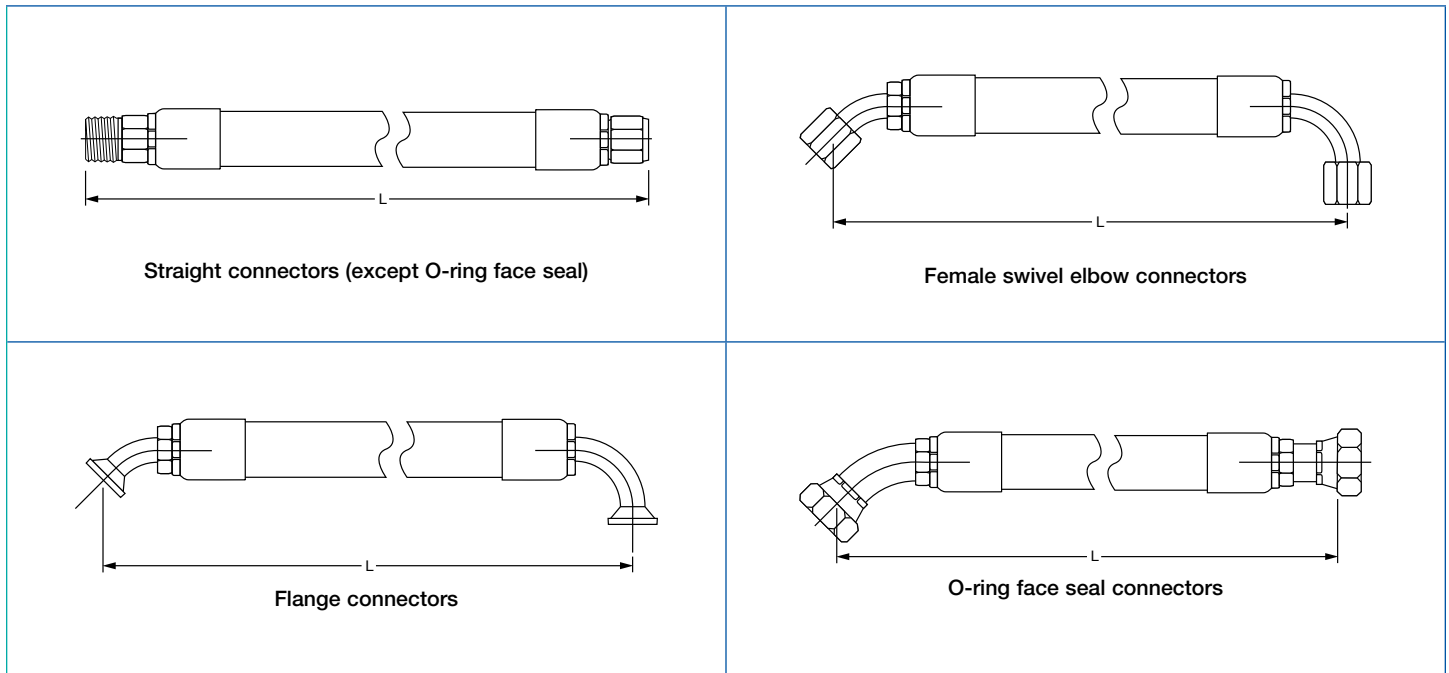
# How to Measure Flextral Assemblies

Use to identify length of customer sample and for checking proper length of new hose assembly.

Unless otherwise specified, assembly length shall be the overall length measured from the extreme end of one connector to the extreme end of the other. O-ring face seal type connectors shall be measured from the sealing face. Where elbow connectors are used, measurement shall be to the centerline of the sealing surface of the elbow end (The sealing surface of female flared elbow connectors shall be the centerline of the outer end of the cone seat). See figures below.

Hold the assembly so that you can look along the length of the hose and with the fitting furthest away from you in the vertical position. Measure the angle between the vertical fitting and the one nearest to you in a clockwise direction. Relationship can then be expressed from 0° to 360°.

Method of measurement should be specified. Tolerances on assembly length shall be as in table below.



Assembly Length	Tolerances (decimal inch)	Tolerances (fraction inch)	Tolerances (mm)
Up through 12" (304.8 mm)	0.13	1/8	3.2
Over 12" through 18" (304.8 through 457.2 mm)	0.19	3/16	4.8
Over 18" through 36" (457.2 through 914.4 mm)	0.25	1/4	6.4
Over 36" (914.4 mm)	1%	1%	1%

### Angular Relationships

Hold the assembly so that you can look along the length of the hose and with the fitting furthest away from you in the vertical position. Measure the angle between the vertical fitting and the one nearest to you in a clockwise direction. Relationship can then be expressed from 0° to 360°.



## PX300 Extended Service Hydraulic Hose

Meets or exceeds the requirements of SAE 100R16 and EN857 2SC DIN 20022 2SN-ISO 1436 Type 2



- Tube:** Nitrile  
**Reinforcement:** Two braids of ultra high tensile steel wire  
**Cover:** Smooth, Black, oil, high abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -54°C to +121°C (-65°F to 250°F)  
**Packaging:** Reels/coils  
**Application:** Petroleum based hydraulic fluids, water, diesel fuels and lubricating oils, biodegradable hydraulic oil fire resistant synthetic polyol esters

PART NUMBER	HOSE I.D.		HOSE O.D.		MAX W.P. (psi)	MAX STATIC WORKING PRESSURE (psi)	MINIMUM BURST PRESSURE (psi)	MINIMUM BEND RADIUS		WEIGHT (lbs/ft)	Non-Skive COUPLINGS
	(in)	(in)	(mm)	(in)				(mm)			
PX300-04	¼	0.56	14.2	5,800	7,714	23,200	1.9	48	0.2	E	
PX300-06	⅜	0.72	18.3	6,650	6,650	20,000	2.5	63	0.3	E, N	
PX300-08	½	0.85	21.5	4,395	5,845	17,580	3.3	85	0.36	E, N	
PX300-10	⅝	0.97	24.7	3,700	4,921	14,800	3.9	98	0.48	E, N	
PX300-12	¾	1.13	28.6	3,190	4,242	12,760	4.5	115	0.61	E, N	
PX300-16	1	1.44	36.6	3,045	4,049	12,180	5.7	145	0.84	E, N	

Notes: \*PX300 has been tested and approved for 1,000,000 impulse cycles at 133% of working pressure at 250°F.

\*PX300 is 33 times more abrasion resistant than standard rubber hydraulic hose.

\* Static working pressures are calculated as 133% of dynamic working pressure.

## EX 2SN Two Wire Braid Hose

Meets or exceeds the requirements of SAE 100R2AT-EN853 DIN 20022 2SN-ISO 1436 Type 2



- Tube:** Nitrile  
**Reinforcement:** Two braids of high tensile steel wire  
**Cover:** Black, oil, abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -40°C to +100°C (-40°F to +212°F), intermittent use up to +125°C (+257°F)  
**Packaging:** ¼" - 1" Reels, 1¼" - 2" Coils  
**Application:** Petroleum based hydraulic fluids, water, diesel fuels and lubricating oils, biodegradable hydraulic oil, fire resistant synthetic polyol esters, USCG 1942-1 accepted.

PART NUMBER	HOSE I.D.		HOSE O.D.		MAX W.P. (psi)	MAX STATIC WORKING PRESSURE (psi)	MINIMUM BURST PRESSURE (psi)	MINIMUM BEND RADIUS		WEIGHT (lbs/ft)	ONE PIECE COUPLINGS
	(in)	(in)	(mm)	(in)				(mm)			
EX-03	⅜	0.53	13.4	6,020	8,006	24,080	3.5	90	0.26	E	
EX-04	¼	0.59	15.1	5,805	7,720	23,220	3.9	100	0.26	E	
EX-05	⅝	0.65	16.6	5,080	6,756	20,320	4.5	115	0.26	E	
EX-06	⅜	0.75	19.1	5,000	6,650	20,000	5.0	130	0.37	E, N	
EX-08	½	0.87	22.2	4,000	5,320	16,000	7.1	180	0.45	E, N	
EX-10	⅝	1.00	25.4	3,625	4,821	14,500	7.9	200	0.54	E, N	
EX-12	¾	1.15	29.3	3,120	4,149	12,480	9.5	240	0.67	E, N	
EX-16	1	1.50	38.1	2,395	3,185	9,580	11.8	300	0.98	E, N	
EX-20	1¼	1.90	48.3	1,815	2,413	7,260	16.5	420	1.43	E, N	
EX-24	1½	2.14	54.3	1,305	1,735	5,220	19.7	500	1.61	E, N	
EX-32	2	2.65	67.3	1,160	1,542	4,640	24.8	630	2.24	E, N	

Notes: Static working pressures are calculated as 133% of dynamic working pressure.



## NZ Four Spiral Hose

Exceeds the requirements of SAE 100R12 - EN856



- Tube:** Nitrile
- Reinforcement:** Four spirals of high tensile wire
- Cover:** Black, oil, abrasion and weather resistant synthetic rubber, MSHA approved
- Temperature:** 40°C to +121°C (-40°F to +250°F)
- Packaging:** Coils
- Application:** Petroleum based hydraulic fluids, water, diesel fuels and lubricating oils, biodegradable hydraulic oil fire resistant synthetic polyol esters

PART NO.	HOSE I.D.		HOSE O.D.		MAX W.P.	MAX STATIC PRESSURE	MIN B.P.	MINIMUM BEND RADIUS		WEIGHT	ONE PIECE Non-Skive	ONE PIECE Skive
	(in)	(in)	(mm)	(psi)				(psi)	(psi)		(in)	(mm)
NZ-12	3/4	1.26	32.0	6,100	7,320	24,400	11.0	280	1.04	N, V		
NZ-16	1	1.51	38.4	5,500	6,600	22,000	13.4	340	1.44	N, V		
NZ-20	1 1/4	1.78	45.2	5,000	6,000	20,000	18.1	460	1.68	N	VS	
NZ-24	1 1/2	2.09	53.0	4,300	5,160	17,200	22.0	560	2.23	N	VS	
NZ-32	2	2.66	67.6	3,600	4,320	14,400	27.6	700	3.08	N	VS	

Note - Static working pressures are calculated as 120% of dynamic working pressure

## VZ 100R13 Six Spiral Wire Hose

Meets or exceeds the requirements of SAE 100R13



- Tube:** Nitrile
- Reinforcement:** 1 1/4" thru 2" 6 spirals of high tensile steel
- Cover:** Black, oil, abrasion and weather resistant synthetic rubber, MSHA approved
- Temperature:** -40°C to +121°C (-40°F to +250°F)
- Packaging:** Coils
- Application:** Petroleum based hydraulic fluids, water, diesel fuels and lubricating oils, biodegradable hydraulic oil fire resistant synthetic polyol esters

PART NUMBER	HOSE I.D.		HOSE O.D.		MAX W.P.	MAX STATIC PRESSURE	MINIMUM BURST PRESSURE	MINIMUM BEND RADIUS		WEIGHT	ONE PIECE Skive
	(in)	(in)	(mm)	(psi)				(psi)	(psi)		(in)
VZ-20	1 1/4	1.94	49.3	5,000	6,000	20,000	16.5	420	2.67	VS	
VZ-24	1 1/2	2.26	57.3	5,000	6,000	20,000	19.7	500	3.35	VS	
VZ-32	2	2.82	71.6	5,000	6,000	20,000	24.8	630	4.37	VS	

Note - Static working pressures are calculated as 120% of dynamic working pressure





## EM Mine Emulsion Hose

Meets or exceeds the requirements of SAE 100R2AT-EN853  
DIN 20022 2SN-ISO 1436 Type 2



- Tube:** Synthetic Rubber
- Reinforcement:** Two braids of high tensile steel wire
- Cover:** Black, oil, abrasion and weather resistant synthetic rubber, MSHA approved
- Temperature:** -40°C to +100°C (-40°F to +212°F), intermittent use up to +125°C (+257°F)
- Packaging:** Coils
- Application:** Petroleum based hydraulic fluids, lubricating oils, water and emulsion

PART NUMBER	HOSE I.D.		HOSE O.D.		MAXIMUM WORKING PRESSURE (psi)	MINIMUM BURST PRESSURE (psi)	MINIMUM BEND RADIUS		TWO PIECE
	(in)	(mm)	(in)	(mm)			(in)	(mm)	
EM-40	2½		3	76.2	1,000	4,000	30	762	EMV/EMF
EM-48	3		3.52	89.4	1,000	4,000	36	915	EMV/EMF

## MS20 Yellow Mine Spray Hose

- Tube:** Synthetic Rubber
- Reinforcement:** High tensile steel wire
- Cover:** Yellow, perforated synthetic rubber, MSHA
- Temperature:** -35°C to +100°C (-31°F to +212°F)
- Packaging:** Coils
- Application:** Mine Spray, general purpose air/water application

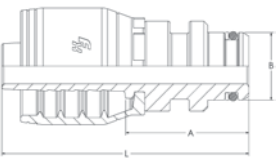


PART NUMBER	HOSE I.D.		HOSE O.D.		MAXIMUM WORKING PRESSURE (psi)	MINIMUM BURST PRESSURE (psi)	MINIMUM BEND RADIUS		WEIGHT (lbs/ft)	ONE PIECE COUPLINGS
	(in)	(mm)	(in)	(mm)			(in)	(mm)		
MS20-075	¾		1.10	28	1,000	4,000	8.98	228	0.41	E
MS20-100	1		1.34	34	1,000	4,000	11.81	300	0.55	E
MS20-125	1¼		1.63	41.4	1,000	4,000	15.12	384	0.74	E
MS20-150	1½		1.89	48	1,000	4,000	17.95	456	0.95	E
MS20-200	2		2.44	62	1,000	4,000	24.00	610	1.47	E




## Couplings

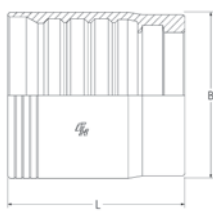
### E Standard Stecko Male Connector – No Skive

	PART NUMBER	L (mm)	A (mm)	B (mm)
	E04-04ST	60.2	32.2	9.9
	E06-06ST	62.7	32.2	13.9
	E08-08ST	65.7	32.7	17.9
	E12-12ST	74.2	33.7	23.9
	E16-16ST	90.9	39.9	30.9
	E20-20ST	97.9	40.2	37.9
	E24-24ST	108.3	43.8	46.9
	E32-32ST	114.3	44.3	55.9

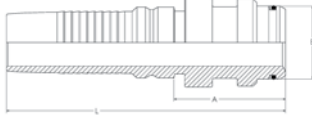
### S Super Stecko Male Connector – External Skive

	PART NUMBER	L (mm)	A (mm)	B (mm)
	S12-12SST	96.0	45.0	21.9
	S16-16SST	118.2	61.7	30.9

### SF Super Stecko Ferrule – External Skive

	PART NUMBER	L (mm)	B (mm)
	SF12	54	38
	SF16	60	46

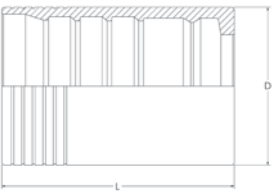
### K Super Stecko Male Connector – Internal/External Skive

	PART NUMBER	L (mm)	A (mm)	B (mm)
	K20-20SST	145.7	58.3	37.9
	K24-24SST	156.9	63.2	43.9
	K32-32SST	163.6	66.0	49.9

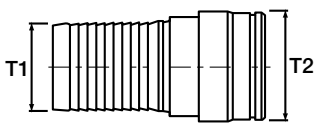


## Couplings

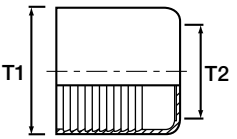
### KF Super Stecko Ferrule – Internal/External Skive

	PART NUMBER	L (mm)	A (mm)	B (mm)
	KF20	88.0	59.8	37.9
	KF24	94.0	67.0	43.9
	KF32	99.0	84.5	49.9

### EMV Internal Expanded Grooved Ends

	PART NUMBER	T1	T2
	EMVS-40	2 ½	2 ½
	EMVS-48	3	3

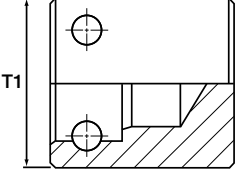
### EMF Internal Expanded Ferrule

	PART NUMBER	T1	T2
	EMF-40	2 ½	2 ½
	EMF-48	3	3

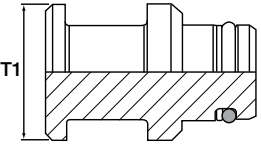


## Standard Stecko Adaptors

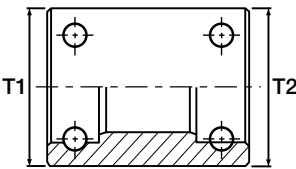
### ST0304C Standard Stecko Female Cap

	PART NUMBER	T1
	ST0304C-04	1/4
	ST0304C-06	3/8
	ST0304C-08	1/8
	ST0304C-12	3/4
	ST0304C-16	1
	ST0304C-20	1 1/4
	ST0304C-24	1 1/2
	ST0304C-32	2

### ST2408 Standard Stecko Male Plug

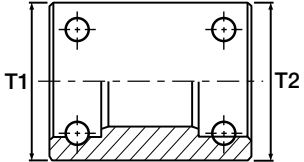
	PART NUMBER	T1
	ST2408-04	1/4
	ST2408-06	3/8
	ST2408-08	1/8
	ST2408-12	3/4
	ST2408-16	1
	ST2408-20	1 1/4
	ST2408-24	1 1/2
	ST2408-32	2
	ST2408-40	2 1/2
	ST2408-48	3

### ST5000 Standard Stecko F-ST / F-ST Straight

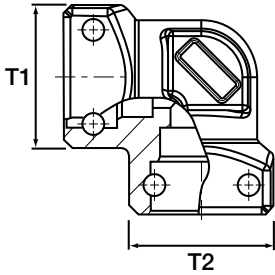
	PART NUMBER	T1	T2
	ST5000-0404	1/4	1/4
	ST5000-0604	3/8	1/4
	ST5000-0606	3/8	3/8
	ST5000-0806	1/2	3/8
	ST5000-0808	1/2	1/2
	ST5000-1206	3/4	3/8
	ST5000-1208	3/4	1/2



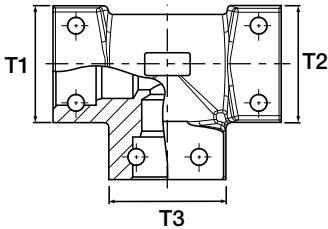
## ST5000 Standard Stecko F-ST / F-ST Straight (Cont)

	PART NUMBER	T1	T2
	ST5000-1212	¾	¾
	ST5000-1606	1	¾
	ST5000-1608	1	½
	ST5000-1612	1	¾
	ST5000-1616	1	1
	ST5000-2012	1¼	¾
	ST5000-2016	1¼	1
	ST5000-2020	1¼	1¼
	ST5000-2412	1½	¾
	ST5000-2416	1½	1
	ST5000-2420	1½	1¼
	ST5000-2424	1½	1½
	ST5000-3212	2	¾
	ST5000-3216	2	1
	ST5000-3220	2	1¼
	ST5000-3224	2	1½
	ST5000-3232	2	2
	ST5000-4032	2½	2
	ST5000-4040	2½	2½
	ST5000-4832	3	2½
	ST5000-4848	3	3

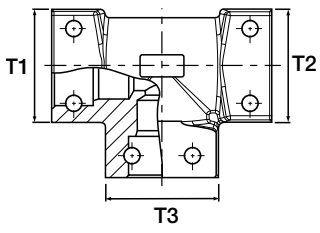
## ST5504 Standard Stecko 90° F-ST / F-ST

	PART NUMBER	T1	T2
		ST5504-0404	1/4
	ST5504-0606	3/8	3/8
	ST5504-0604	3/8	1/4
	ST5504-0808	1/2	1/2
	ST5504-1212	3/4	3/4
	ST5504-1616	1	1
	ST5504-2020	1 1/4	1 1/4
	ST5504-2424	1 1/2	1 1/2
	ST5504-3232	2	2
	ST5504-4040	2 1/2	2 1/2
	ST5504-4848	3	3

## ST5605 Standard Stecko F-ST / F-ST / F-ST TEE

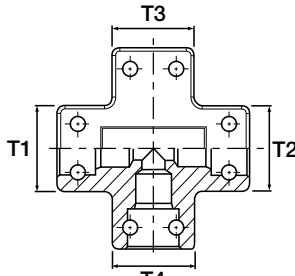
	PART NUMBER	T1	T2	T3
		ST5605-040404	1/4	1/4
	ST5605-060606	3/8	3/8	3/8
	ST5605-060604	3/8	3/8	1/4
	ST5605-080808	1/2	1/2	1/2
	ST5605-080806	1/2	1/2	3/8
	ST5605-121212	3/4	3/4	3/4
	ST5605-121206	3/4	3/4	3/8
	ST5605-121208	3/4	3/4	1/2
	ST5605-161616	1	1	1
	ST5605-161606	1	1	3/8
	ST5605-161608	1	1	1/2
	ST5605-161612	1	1	3/4
	ST5605-202020	1 1/4	1 1/4	1 1/4
	ST5605-202006	1 1/4	1 1/4	3/8

## ST5605 Standard Stecko F-ST / F-ST / F-ST TEE (cont)

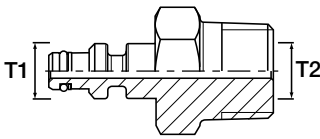
	PART NUMBER	T1	T2	T3
	ST5605-202008	1¼	1¼	½
	ST5605-202012	1¼	1¼	¾
	ST5605-202016	1¼	1¼	1
	ST5605-242424	1½	1½	1½
	ST5605-242406	1½	1½	¾
	ST5605-242408	1½	1½	½
	ST5605-242412	1½	1½	¾
	ST5605-242416	1½	1½	1
	ST5605-242420	1½	1½	1¼
	ST5605-323232	2	2	2
	ST5605-323206	2	2	¾
	ST5605-323208	2	2	½
	ST5605-323212	2	2	¾
	ST5605-323216	2	2	1
	ST5605-323220	2	2	1¼
	ST5605-323224	2	2	1½
	ST5605-404040	2½	2½	2½
	ST5605-404006	2½	2½	¾
	ST5605-404012	2½	2½	¾
	ST5605-404016	2½	2½	1
	ST5605-404020	2½	2½	1¼
	ST5605-404024	2½	2½	1½
	ST5605-404032	2½	2½	2
	ST5605-484820	3	3	1¼
	ST5605-484824	3	3	1½
	ST5605-484832	3	3	2



## ST5652 Standard Stecko F-ST / F-ST / F-ST/F-ST CROSS

	PART NUMBER	T1	T2	T3	T4
	ST5652-04040404	1/4	1/4	1/4	1/4
ST5652-06060606	3/8	3/8	3/8	3/8	
ST5652-08080808	1/2	1/2	1/2	1/2	
ST5652-12121212	3/4	3/4	3/4	3/4	
ST5652-16161616	1	1	1	1	
ST5652-20202020	1 1/4	1 1/4	1 1/4	1 1/4	
ST5652-24242424	1 1/2	1 1/2	1 1/2	1 1/2	
ST5652-32323232	2	2	2	2	

## ST2404 Standard Stecko M-ST / NPT Straight

	PART NUMBER	T1	T2
	ST2404-0402	1/4	1/8
ST2404-0404	1/4	1/4	
ST2404-0406	1/4	3/8	
ST2404-0604	3/8	1/4	
ST2404-0606	3/8	3/8	
ST2404-0608	3/8	1/2	
ST2404-0806	1/2	3/8	
ST2404-0808	1/2	1/2	
ST2404-0812	1/2	3/4	
ST2404-1212	3/4	3/4	
ST2404-1216	3/4	1	
ST2404-1612	1	3/4	
ST2404-1616	1	1	
ST2404-2020	1 1/4	1 1/4	





## ST7002 Standard Stecko M-ST / M-BSPB Straight

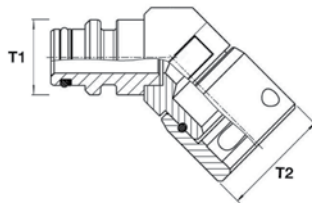
	PART NUMBER	T1	T2
	ST7002-0404	1/4	1/4 -19
	ST7002-0406	1/4	3/8 -19
	ST7002-0604	3/8	1/4 -19
	ST7002-0606	3/8	3/8 -19
	ST7002-0608	3/8	1/2 -14
	ST7002-0612	3/8	3/4 -14
	ST7002-0804	1/2	1/4 -19
	ST7002-0806	1/2	3/8 -19
	ST7002-0808	1/2	1/2 -14
	ST7002-0812	1/2	3/4 -14
	ST7002-0816	1/2	1 -11
	ST7002-1208	3/4	1/2 -14
	ST7002-1212	3/4	3/4 -14
	ST7002-1216	3/4	1 -11
	ST7002-1616	1	1 -11
	ST7002-1620	1	1 1/4 -11
	ST7002-2020	1 1/4	1 1/4 -11
	ST7002-2024	1 1/4	1 1/2 -11
	ST7002-2424	1 1/2	1 1/2 -11
	ST7002-3232	2	2 -11



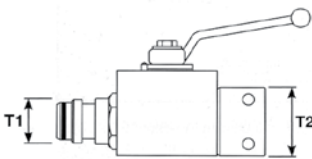
## ST6402 Standard Stecko M-BSP / F-ST Swivel Straight

	PART NUMBER	T1	T2
		ST6402-0404	1/4 -19
ST6402-0604		3/8 -19	1/4
ST6402-0406		1/4 -19	3/8
ST6402-0606		3/8 -19	3/8
ST6402-0806		1/2 -14	3/8
ST6402-1206		3/4 -14	3/8
ST6402-0608		3/8 -19	1/2
ST6402-0808		1/2 -14	1/2
ST6402-1208		3/4 -14	1/2
ST6402-1608		1 -11	1/2
ST6402-0812		1/2 -14	3/4
ST6402-1212		3/4 -14	3/4
ST6402-1612		1 -11	3/4
ST6402-2012		1 1/4 -11	3/4
ST6402-2412		1 1/2 -11	3/4
ST6402-1216		3/4 -11	1
ST6402-1616		1 -11	1
ST6402-2016		1 1/4 -11	1
ST6402-2416		1 1/2 -11	1
ST6402-1620		1 -11	1 1/4
ST6402-2020		1 1/4 -11	1 1/4
ST6402-2420		1 1/2 -11	1 1/4
ST6402-3220		2 -11	1 1/4
ST6402-2424		1 1/2 -11	1 1/2
ST6402-2432		1 1/2 -11	2
ST6402-3232		2 -11	2

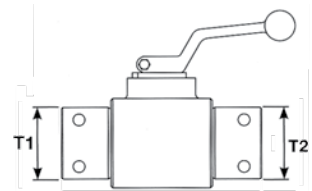
## ST6502 Standard Stecko 45° M-ST / F-ST Swivel

	PART NUMBER	T1	T2
	ST6502-0404	1/4	1/4
	ST6502-0606	3/8	3/8
	ST6502-0608	3/8	1/2
	ST6502-0808	1/2	1/2
	ST6502-1212	3/4	3/4
	ST6502-1616	1	1
	ST6502-2020	1 1/4	1 1/4

## STBV6504 Standard Stecko M-ST / F-ST Swivel Ball Valve

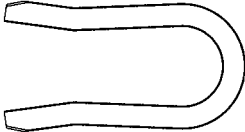
	PART NUMBER	T1	T2
	STBV6504-0606	3/8	3/8
	STBV6504-0808	1/2	1/2
	STBV6504-1212	3/4	3/4
	STBV6504-1616	1	1
	STBV6504-2020	1 1/4	1 1/4
	STBV6504-2424	1 1/2	1 1/2
	STBV6504-3232	2	2

## STBV6565 Standard Stecko F-ST / F-ST Swivel Ball Valve


	PART NUMBER	T1	T2
	STBV6565-0404	1/4	1/4
	STBV6565-0606	3/8	3/8
	STBV6565-0808	1/2	1/2
	STBV6565-1212	3/4	3/4
	STBV6565-1616	1	1
	STBV6565-2020	1 1/4	1 1/4
	STBV6565-2424	1 1/2	1 1/2
STBV6565-3232	2	2	



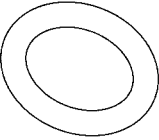
## ST6502 Standard Stecko Staple (Carbon Steel)

	PART NUMBER	SIZE
	ST0364-04CS	1/4
	ST0364-06CS	3/8
	ST0364-08CS	1/2
	ST0364-12CS	3/4
	ST0364-16CS	1
	ST0364-20CS	1 1/4
	ST0364-24CS	1 1/2
	ST0364-32CS	2

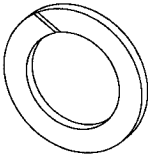
## ST0364 Standard Stecko Staple (Stainless)

	PART NUMBER	SIZE
	ST0364-04SS	1/4
	ST0364-06SS	3/8
	ST0364-08SS	1/2
	ST0364-12SS	3/4
	ST0364-16SS	1
	ST0364-20SS	1 1/4
	ST0364-24SS	1 1/2
	ST0364-32SS	2
	ST0364-40SS	2 1/2

## OST Standard Stecko O-Ring

	PART NUMBER	SIZE
	OST-04	¼
	OST-06	⅜
	OST-08	½
	OST-12	¾
	OST-16	1
	OST-20	1¼
	OST-24	1½
	OST-32	2
	OST-40	2½
	OST-48	3

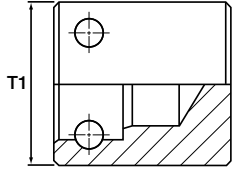
## BST Standard Stecko Backup Ring

	PART NUMBER	SIZE
	BST-04	¼
	BST-06	⅜
	BST-08	½
	BST-12	¾
	BST-16	1
	BST-20	1¼
	BST-24	1½
	BST-32	2

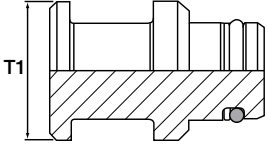


## Super Stecko Adaptors

### SST0304C Female Cap

	PART NUMBER	T1
	SST0304C-08	1/2
	SST0304C-12	3/4
	SST0304C-16	1
	SST0304C-20	1 1/4
	SST0304C-24	1 1/2
	SST0304C-32	2

### SST2408 Male Plug

	PART NUMBER	T1
	SST2408-12	3/4
	SST2408-16	1
	SST2408-20	1 1/4
	SST2408-24	1 1/2



## SST5000 F-SST/F-SST Straight

	PART NUMBER	T1	T2
	SST5000-0808	1/2	1/2
	SST5000-1212	3/4	3/4
	SST5000-1616	1	1
	SST5000-2020	1 1/4	1 1/4
	SST5000-2016	1 1/4	1
	SST5000-2424	1 1/2	1 1/2
	SST5000-2412	1 1/2	3/4
	SST5000-2416	1 1/2	1
	SST5000-2420	1 1/2	1 1/4
	SST5000-2432	1 1/2	2
	SST5000-3232	2	2
	SST5000-3216	2	1
	SST5000-3220	2	1 1/4
	SST5000-3224	2	1 1/2

## SST5504 90° F-SST/F-SST

	PART NUMBER	T1	T2
	SST5504-2020	1 1/4	1 1/4
	SST5504-2424	1 1/2	1 1/2
	SST5504-3232	2	2
	SST5504-3224	2	1 1/2



### SST5605 F-SST / F-SST / F-SST TEE

	PART NUMBER	T1	T2	T3
	SST5605-202020	1¼	1¼	1¼
	SST5605-242424	1½	1½	1½
	SST5605-242420	1½	1½	1¼
	SST5605-323232	2	2	2
	SST5605-323216	2	2	1
	SST5605-323220	2	2	1¼
	SST5605-323224	2	2	1½

### SST6500 90° M-SST / F-SST Swivel

	PART NUMBER	T1	T2
	SST6500-1212	¾	¾
	SST6500-2020	1¼	1¼
	SST6500-2424	1½	1½
	SST6500-3232	2	2

### SST6504 M-SST / F-SST Swivel Straight

	PART NUMBER	T1	T2
	SST6504-2016	1¼	1
	SST6504-2420	1½	1¼
	SST6504-3220	2	1¼





### SSTBV6504 M-SST / F-SST Swivel Ball Valve

	PART NUMBER	T1	T2
	SSTBV6504-1212	3/4	3/4
	SSTBV6504-1616	1	1
	SSTBV6504-2020	1 1/4	1 1/4
	SSTBV6504-2424	1 1/2	1 1/2
	SSTBV6504-3232	2	2

### SSTBV6565 F-SST / F-SST Swivel Ball Valve

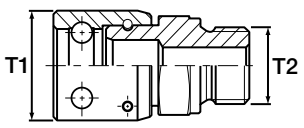
	PART NUMBER	T1	T2
	SSTBV6565-1212	3/4	3/4
	SSTBV6565-1616	1	1
	SSTBV6565-2020	1 1/4	1 1/4
	SSTBV6565-2424	1 1/2	1 1/2
	SSTBV6565-3232	2	2

### SST2404 M-SST / M-BSP Straight

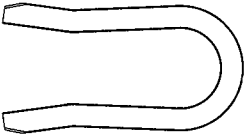
	PART NUMBER	T1	T2
	SST2404-1212	3/4	3/4 -14
	SST2404-1616	1	1 -11
	SST2404-2020	1 1/4	1 1/4 -11
	SST2404-2424	1 1/2	1 1/2 -11
	SST2404-3232	2	2 -11



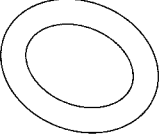
## SST6505 F-SST Swivel / M-BSPB Straight

	PART NUMBER	T1	T2
	SST6505-1212	3/4	3/4 14
	SST6505-1216	3/4	1 11
	SST6505-1616	1	1 11
	SST6505-2016	1 1/4	1 11
	SST6505-2024	1 1/4	1 1/2 11
	SST6505-2032	1 1/4	2 11
	SST6505-2424	1 1/2	1 1/2

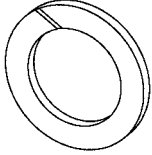
## SST0364 Staple (Stainless)

	PART NUMBER	SIZE
	SST0364-16SS	1
	SST0364-20SS	1 1/4
	SST0364-24SS	1 1/2
	SST0364-32SS	2

## OSST O-Ring

	PART NUMBER	SIZE
	OSST-08	1/2
	OSST-12	3/4
	OSST-16	1
	OSST-20	1 1/4
	OSST-24	1 1/2
	OSST-32	2

## BSST Backup Ring

	PART NUMBER	SIZE
	BSST-12	3/4
	BSST-16	1
	BSST-20	1 1/4
	BSST-24	1 1/2
	BSST-32	2



UNDERGROUND MINING CATALOG

www. **FLEXTRAL**.com