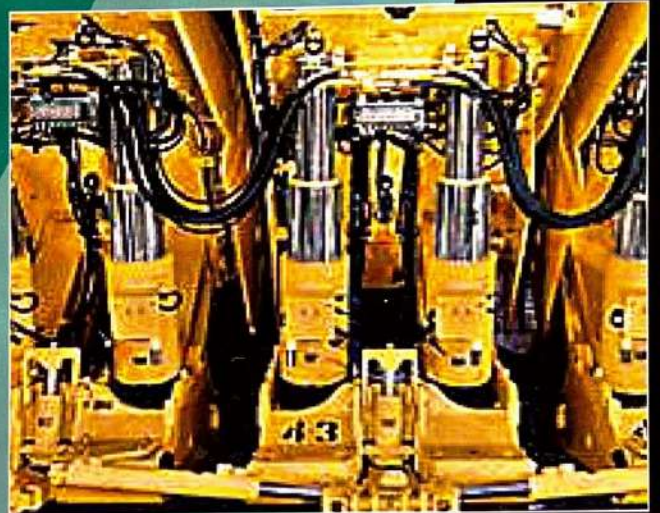




JK Pioneer



Hydraulic & Industrial Hoses



Hose Shelf life

Hose and hose assemblies are affected by exposure to ozone, oxygen, heat, sunlight, rain, and other similar environmental factors. Storage of bulk hose and hose assemblies should be in such a manner that exposure to these environmental factors is controlled as much as possible.

Hose and hose assemblies should be stored, handled, shipped and used in such a manner as to facilitate first-in first-out usage, based on manufacturing date marked on the hose or hose assembly.

Shelf life Guidelines as per BS 5244 for Hydraulic Hose & Hose assemblies

4.2 Hoses and Hose assemblies stored as separate items

4.2.1 Before fitting, all hose assemblies should be subjected to visual examination for evidences of deterioration.

4.2.2 The recommendations in Tables 1 & 2 apply to stored hoses and assemblies depending on their age.

Table 1. Test recommendations for Hoses

Age	Recommendations
Upto 3 years	Use without further testing.
3 to 5 years	Use after representative samples subjected to a proof pressure test.
5 to 8 years	Use after representative samples subjected to Proof, Impulse and Burst test, Cold bend test & Electrical tests.
Over 8 Years	Scrap

Table 2. Test recommendations for Hose Assemblies

Age	Recommendations
Upto 3 years	Use without further testing.
3 to 5 years	Use after subjecting each assembly to a pressure test of 1.5 x design working pressure & representative samples subjected to a Burst Pressure test.
5 to 8 years	As for 3 to 5 years plus Impulse Pressure test, Cold bend test & Electrical tests on representative samples.
Over 8 Years	Scrap

Hose service Life

All Rubber Hoses-Hydraulic & Industrial Hose & Assemblies have a limited life on a given application. Even though correct Hose has been selected for the application, its service life can be still adversely affected by many variable conditions.

Major factors are,

1. Continuous use at maximum rated working pressure including pressure surges.
2. Continuous use at maximum recommended operating temperature
3. Continuous use at minimum bend radius or, even lower than MBR.
4. Failure to follow proper selection, installation, maintenance.
5. External Abuse such as run over by heavy load/ Vehicle, rubbing against metallic structures, occasionally hit by Stone chips.

It is recommended

- # Inspect hose assemblies regularly for damage, cracks, leaks.
- # Replace hose with wear or damage



Description	Pages
Hose shelf life / Hose Service Life	Inner left page
Hose Bend radius & its significance	2
Hydraulic Hoses	3
Hose selection guide-STAMPER	4
Application temp guide	5
ID Chart	6
High Abrasion resistance Rhinotuff Hoses	7
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SAE100R1/ISN	10
Rhinotuff Cover SAE100R1/ISN	10
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Rhinotuff Cover SAE100R2/2SN	11
EN 857 ISN	12
Rhinotuff Cover EN 857 ISN	12
EN 857 2SN/SAE100R16	13
Rhinotuff Cover EN 857 2SN/SAE100R16	13
Constant Pressure SAE100R17	14
Constant Pressure Rhinotuff Cover SAE100R17	14
Constant Pressure SAE100R19	15
Constant Pressure Rhinotuff Cover SAE100R19	15
Jack Hose IJ100	16
SAE100R3	16
SAE100R6	17
R6HT (Hi Temperature R6)	17
Agrotrolley 1-Wire	18
Agrotrolley 2-Wire	18
Industrial Hose	19
Pneumatic Hose -Yarn Braid	20
Air water Yarn Braid	20
Rockdrill Hose- Yarn Braid	21
HD Air Drill Hose	21
Hi temperature Airdrill-Wire Braid	22
Carbon Free Hose-Yarn Braid	22
Compressor Hose for Hot Air	23
Hi Steam Hose-Wire Braid	23
Car wash Hose	24
Agriculture Spray Hose-Yarn Braid	24
Mild Chemical Hose	25
Fire extinguisher Hose for CO2 - Wire Braid	25
Sand blast Hose 10 Bar-Yarn Braid	26
Suprem Sand blast Hose 14 Bar -Yarn Braid	26
CNG Hose SAEJ30R6 & IS 15722-Yarn Braid	27
Welding Hose (Red & Blue)- Yarn Braid	27
Hardwall Petrol / Diesel Hose	28
Conversion Table	29

Hose Bend Radius & its significance:

When we bend the Hose, Hose OD at bend portion starts decreasing & the area starts flattening_ Tube & Cover at Bend portion becomes stretched & thinner & reinforcement pattern also changes, as a result Pressure resistance of a bend Hose decreases considerably_ Bend radius beyond its minimum Bend radius decreases Hose life significantly_ If the bend is severe the hose may kink.

Most of the spec allows the flattening up to 10% of original OD & corresponding bend radius is called Minimum Bend radius of that Hose_

It is never a good idea to use a hose past the minimum bend radius. When a hose is bent beyond its rated bend radius it restricts flow, decreases the life of the hose, and may cause kinking and failure. When the hose bursts at the outside bend it will often be due to the excessive bend and there may be broken wires in the area of the failure. If it is on a vacuum or suction application the hose may be flattened out in the bend area, which can reduce or restrict flow.

When A Hose Goes Beyond Its Rated Bend Radius

- Restricts Flow
- Decreases Life of Hose
- May Cause Kinking

JK Pioneer

HYDRAULIC HOSES





Easy steps to select a proper Hydraulic hose

Proper hose selection is critical to a safe hydraulic system. JK Fenner has used term STAMPER for easy remembering these parameters. Parameters on which the Hose is selected are as per below,

S

• Size of Hose :Size of Hose is mostly known by Inside Diameter (ID) of the hose, irrespective of Outer diameter of Hose. This differs from Steel Tube, where size is OD of the Tube.
Correct ID - minimize pressure loss and ensure adequate delivery volume.
Correct OD - critical factor for coupling compatibility, routing clamps.

T

• Temperature at which Hose to work.Hose must withstand minimum and maximum temperature in system. Very High and Very low temperatures have very severe effect on Hose life
Exceeding hose temperature ratings may significantly reduce hose life. Select hose so the fluid and ambient temperatures, both static and transient, fall within the hose ratings. The effects of external heat sources should not raise the temperature of the hose above its maximum operating temperature.
Select hose, heat shields, sleeving, and other methods for these requirements, and route or shield hose to avoid hose damage from external heat sources.

A

• Application of Hose .Application of Hose & its Environmental conditions can cause hose and fitting degradation. Conditions to evaluate include, UV Rays, Saltwater, Ozone, Chemicals, Vibration, Government & industry standards, Abrasion & Bend Radius-Routing requirements.

M

• Media or, Material which Flows thru Hose. Hose must be compatible with the medium being conveyed. Compatibility must cover not just tube but the cover, Hose fittings & O rings as well. Permeation, or effusion, is seepage of fluid through the hose. Certain materials in hose construction are more permeable than others. Consider the effects of permeation when selecting hose, especially with gaseous fluids.

P

• Pressure inside the Hose. While considering Hose Pressure, it is important to know both the system working Pressure & any surge or, spikes in pressure.
Hose selection must be made so that the published working Pressure of the Hose is equal to or, greater than the maximum system pressure.
What is the Maximum operating pressure.
How much Pressure spikes or surges
How much safety factor or, Burst Pressure
How much Pressure drop allowed i.e. loss of pressure over length of Hose

E

• Ends of Hose. How Hose is connected to Port. Fittings type, termination. End connection/fittings plays major role in hose performance & fitments. Hence, End connection / fitting needs to be select with utmost care.

R

• Rate of Flow thru Hose(Flow velocity).The performance of the hose & life span depends on volume & velocity of the material conveyed through the hose. In order to achieve maximum efficiency in a hydraulic system, it is necessary to keep pressure losses (resistance to the volumetric flow) to a minimum when a fluid is conveyed. When a fluid flows through a flow line, heat is generated by friction. Thus part of the energy is lost as heat energy, which results in a pressure loss.
Under-sizing causes pressure loss.
Over-sizing adds unnecessary cost, weight, and Space.

APPLICATION TEMPERATURE LIMITS FOR JK FENNER HYDRAULIC HOSES WITH DIFFERENT FLUID MEDIA.

Hydraulic Hose service life depends on selecting Proper Hose & Hot Fluid media. Same Hose with different media works at different performance level as explained below. Following this will improve Hose life at that particular application.

Hoses	Hydraulic Oils		Water, Water/Oil Emulsion & Water/Glycol Solutions	
	Pressure Line	Return Line	Pressure Line	Return Line
R1,R2,R3,R6,R16/2SC,R17,R19 & 1SC (Normal as well as Rhinotuff cover)	+100°C (212 °F)	+100°C (212 °F)	+93°C (200 °F)	+82°C (180 °F)
R6HT	+135°C (275 °F)	+135°C (275 °F)	+107°C (225 °F)	+82°C (180 °F)

1. **DONOT** expose Hose to Maximum rated Working Pressure & Maximum rated Temperature simultaeously.
2. **DONOT** Exceed the Fluid Manufacturer recommended Maximum operating temperature for that Fluid.
3. **INTERMITTENT OPERATING TEMPERATURE** should not exceed 10% of operating time & it should be a short time temperature surge.

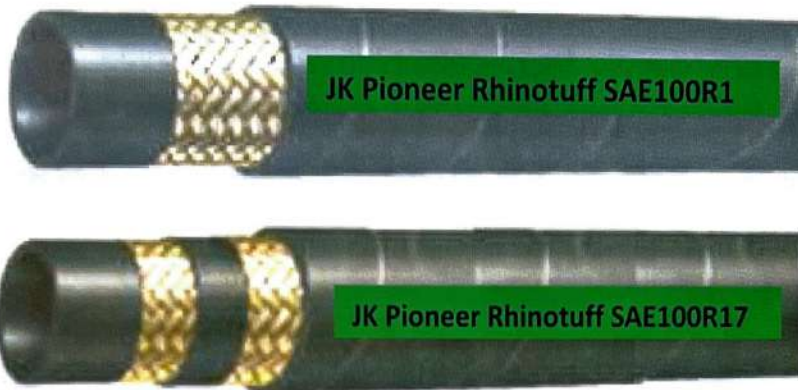
Hydraulic Hose ID Chart

"Hydraulic Hose industry has adopted a system where ID measuring & Expressed in DASH NUMBERS to indicate Hose & coupling Size.

This Dash Number denotes Hose ID in sixteenth of an inch. Exception to this is SAE100R5 & SAE100R14."

HYDRAULIC HOSE ID CHART					
DASH NO.	Metric DN	ALL Except SAE100R5 & SAE100R14		Only for SAE100R5 & SAE100R14	
		Inches	mm	Inches	mm
-2	-	1/8	3.2	-	-
-3	5	3/16	4.8	-	-
-4	6	1/4	6.4	3/16	4.8
-5	8	5/16	7.9	1/4	6.4
-6	10	3/8	9.5	5/16	7.9
-8	12	1/2	12.7	3/8	9.5
-10	16	5/8	15.9	1/2	12.7
-12	19	3/4	19	5/8	15.9
-14	22	7/8	22.2	-	-
-16	25	1	25.4	7/8	22.2
-20	31	1-1/4	31.8	1-1/8	28.6
-24	38	1-1/2	38.1	1-3/8	34.9
-32	51	2	50.8	1-13/16	46
-36	58	2-1/4	57.6	-	-
-40	63	2-1/2	63.5	2-3/8	60.3
-48	76	3	76.2	-	-
-56	89	3-1/2	88.9	-	-
-64	102	4	101.6	-	-

High Abrasion resistance Rhinotuff Hoses



JK Pioneer Hoses with Rhinotuff cover protects Hose from excessive abrasion. Hoses are 10 times better abrasion resistance compared to ISO 6945 requirement. Hoses available with Rhinotuff cover are SAE100R1/R2/R16/R17/R19/EN857 ISC/2SC.

Features:

- Cover exceeds ISO 6945 Abrasion resistance.
- MSHA Approved Cover.
- Alternate to Protective sleeves in application requiring Abrasion resistance."

SAE Recommended Practices for Hydraulic Hose & Hose assemblies

"The SAE J1273 guidelines recommend practices while selecting, routing, Fabricating, Installing, Replacing, Maintaining & Storing Hose for Fluid Power systems.

SAE J1273 Stanadrd recommends following good practices which can increase life of Hose assembly. Damaged or, worn out assemblies must be replaced immediately. Standard recommends Hose assemblies in use should be inspected regularly for leaks, Kinks, Cover Blisters, Cover Abrasions & other damages. Not Complying these recommendations may result ion serious Personal Injury or, property Damage.

These recommended pratcices take into account Safety of Human & Systems, maximising life of Hose & Hose assemblies.

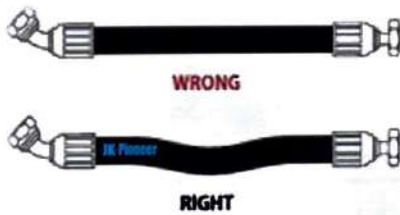
1. Select Proper Hose for the application. Simply matching ID/OD is not enough but it should be along with type of Hose.
2. Hydraulic Components selection should also be based on application Temperature, Pressure and Bend Radius. Don't exceed recommended component limits.
3. Hose must not be Stretched, Kinked, Crushed or, twisted while installing or, during its use. Hose must not be bent to less than its recommended minimum Bend Radius."

SAE Recommended Practices for Hydraulic Hose & Hose assemblies Correct Hose Assembly installation:

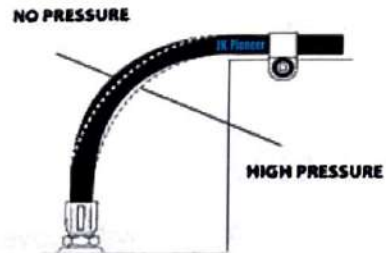
Hose Assembly installation should comply with Hose routing standard SAE J 1273.

The Following Diagrams show Proper Hose installations which provide Maximum performance & cost savings.

LENGTH CHANGE

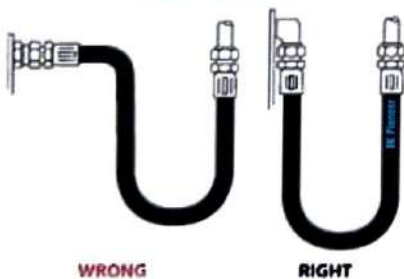


When hose installation is straight, allow enough slack in hose line to provide for length changes which will occur when pressure is applied.

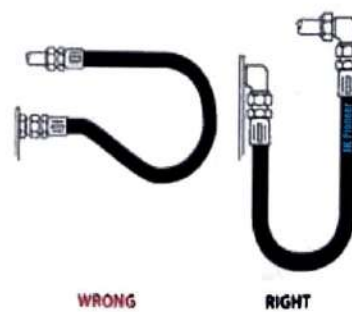


To allow for length changes when hose is pressurized, do not clamp at bends so that curves will absorb changes. Do not clamp high and low pressure lines together.

TIGHT BEND



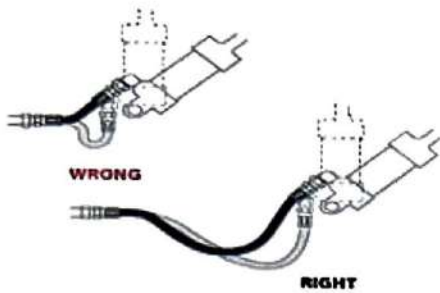
Use proper angle adapters to avoid tight bends in hose.



When radius is below the required minimum, use an angle adapter to avoid sharp bends.

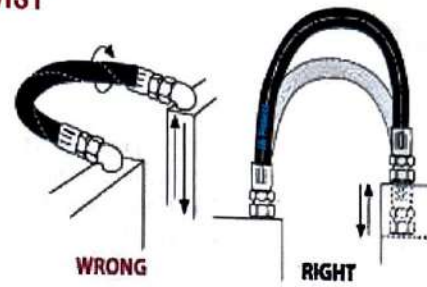


MOVEMENT / FLEXING



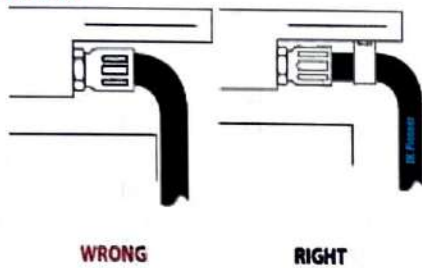
Adequate hose length is necessary to distribute movement on flexing applications and to avoid abrasion.

TWIST



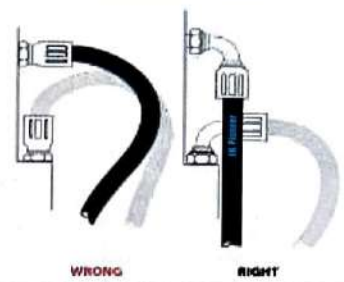
Prevent twisting and distortion by bending hose in the same plane as the motion of the port to which hose is connected.

ABRASION



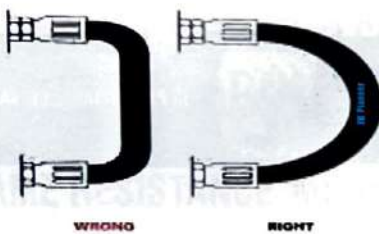
Use proper angle adapters to avoid tight bends in hose.

STRAIN



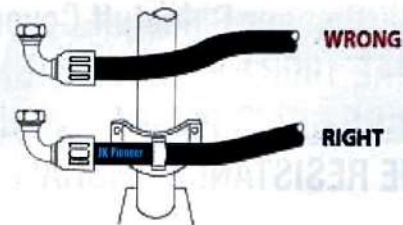
When radius is below the required minimum, use an angle adapter to avoid sharp bends.

COLLAPSE



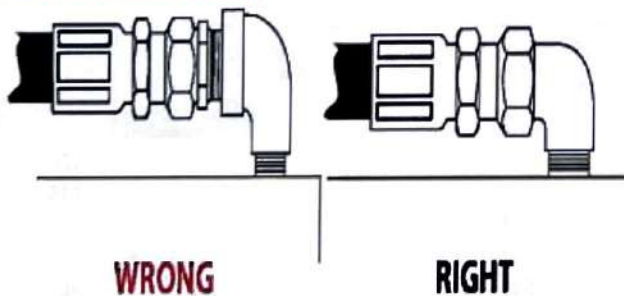
To avoid hose collapse and flow restriction, keep hose bend radius as large as possible. Refer to hose specification tables for minimum bend radius.

HIGH HEAT



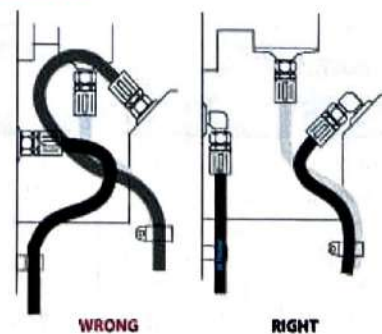
High ambient temperatures shorten hose life, so make sure hose is kept away from hot parts. Insulate the hose with sleeving if this isn't possible.

REDUCE CONNECTIONS



To avoid hose collapse and flow restriction, keep hose bend radius as large as possible. Refer to hose specification tables for minimum bend radius.

APPEARANCE



High ambient temperatures shorten hose life, so make sure hose is kept away from hot parts. Insulate the hose with sleeving if this isn't possible.

**JK Pioneer SAE 100R1 AT/EN 853 1SN
1- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube:
Reinforcement:
Cover:
Working Temperature:
MAIN APPLICATIONS

Specially compounded Oil resistance NBR-Black
One Braid of High Tensile Steel wire.
Oil & Ozone resistance NBR/PVC -Black.(CR Cover available on request) MSHA certified.
-40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.
Conforms to SAE100R1/EN853 1SN & ISO 1436-1 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
3 R1	3/16	4.8	11.7	9.5	3625	250	14500	1000	90
4 R1	1/4	6.3	13.4	11.2	3265	225	13060	900	100
5 R1	5/16	8.0	15	12.6	3120	215	12480	860	115
6 R1	3/8	9.5	17.3	15.2	2610	180	10440	720	125
8 R1	1/2	12.5	20.5	18.4	2320	160	9280	640	180
10 R1	5/8	15.9	23.5	21.3	1885	130	7540	520	205
12 R1	3/4	19.0	27.6	25.4	1525	105	6100	420	240
16 R1	1	25.0	36	33.3	1275	88	5100	352	300
20 R1	1-1/4	31.5	44	40.5	915	63	3660	252	420
24 R1	1-1/2	38.0	49.8	47	725	50	2900	200	500
32 R1	2	51.0	65	61	580	40	2320	160	630

**JK Pioneer Rhinotuff Cover
SAE 100R1 AT/EN 853 1SN
1- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube:
Reinforcement:
Cover:
Working Temperature:
MAIN APPLICATIONS

Specially compounded Oil resistance NBR-Black
One Braid of High Tensile Steel wire.
High Abrasion resistance,Oil & Ozone resistance Synthetic Rubber- MSHA certified.
-40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water. Conforms to SAE100R1/EN853 1SN & ISO 1436-1 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
4 R1 Rhinotuff	1/4	6.3	13.4	11.2	3265	225	13060	900	100
5 R1 Rhinotuff	5/16	8.0	15	12.6	3120	215	12480	860	115
6 R1 Rhinotuff	3/8	9.5	17.3	15.2	2610	180	10440	720	125
8 R1 Rhinotuff	1/2	12.5	20.5	18.4	2320	160	9280	640	180
10 R1 Rhinotuff	5/8	15.9	23.5	21.3	1885	130	7540	520	205
12 R1 Rhinotuff	3/4	19.0	27.6	25.4	1525	105	6100	420	240
16 R1 Rhinotuff	1	25.0	36	33.3	1275	88	5100	352	300
20 R1 Rhinotuff	1-1/4	31.5	44	40.5	915	63	3660	252	420
24 R1 Rhinotuff	1-1/2	38.0	49.8	47	725	50	2900	200	500
32 R1 Rhinotuff	2	51.0	65	61	580	40	2320	160	630



**JK Pioneer SAE 100R2 AT/EN 853 2SN
2- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: Oil & Ozone resistance NBR/PVC -Black. (CR Cover available on request) MSHA Certified.
Working Temperature: -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS High pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.
 Conforms to SAE100R2/EN853 2SN & ISO 1436-2 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R2	1/4	6.3	15.0	13.1	5800	400	23200	1600	100
5 R2	5/16	8.0	16.4	14.2	5075	350	20300	1400	115
6 R2	3/8	9.5	19.0	16.7	4785	330	19140	1320	125
8 R2	1/2	12.5	22.2	19.9	4000	275	16000	1100	180
10 R2	5/8	15.9	25.2	23.0	3625	250	14500	1000	205
12 R2	3/4	19.0	29.0	26.9	3120	215	12480	860	240
16 R2	1	25.0	37.0	35.0	2395	165	9580	660	300
20 R2	1-1/4	31.5	47.3	43.8	1815	125	7260	500	420
24 R2	1-1/2	38.0	54.4	50.5	1305	90	5220	360	500
32 R2	2	50.0	66.8	63.0	1160	80	4640	320	630

**JK Pioneer Rhinotuff Cover
SAE 100R2 AT/EN 853 2SN
2- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: High Abrasion resistance, Oil & Ozone resistance Synthetic Rubber- MSHA certified.
Working Temperature: -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS High pressure hydraulic lines, fuel oil, antifreeze solutions,air and water. Conforms to SAE100R2/EN853 2SN & ISO 1436-2 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R2 Rhinotuff	1/4	6.3	15.0	13.1	5800	400	23200	1600	100
5 R2 Rhinotuff	5/16	8.0	16.4	14.2	5075	350	20300	1400	115
6 R2 Rhinotuff	3/8	9.5	19.0	16.7	4785	330	19140	1320	125
8 R2 Rhinotuff	1/2	12.5	22.2	19.9	4000	275	16000	1100	180
10 R2 Rhinotuff	5/8	15.9	25.2	23.0	3625	250	14500	1000	205
12 R2 Rhinotuff	3/4	19.0	29.0	26.9	3120	215	12480	860	240
16 R2 Rhinotuff	1	25.0	37.0	35.0	2395	165	9580	660	300
20 R2 Rhinotuff	1-1/4	31.5	47.3	43.8	1815	125	7260	500	420
24 R2 Rhinotuff	1-1/2	38.0	54.4	50.5	1305	90	5220	360	500
32 R2 Rhinotuff	2	50.0	66.8	63.0	1160	80	4640	320	630

JK Pioneer COMPACT HOSES EN 857 1SC
1- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER



Tube:
Reinforcement:
Cover:
Working Temperature:
MAIN APPLICATIONS

Specially compounded Oil resistance NBR-Black
 One Braid of High Tensile Steel wire.
 Oil & Ozone resistance NBR/PVC -Black.(CR Cover available on request) MSHA certified.
 -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
 Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.
 Conforms to EN 857 1SC Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
4 1SC	1/4	6.3	12.6	10.4	3250	225	13000	900	75
5 1SC	5/16	8.0	13.8	11.7	3100	215	12400	860	85
6 1SC	3/8	9.5	15.9	13.8	2610	180	10440	720	90
8 1SC	1/2	12.5	19.2	17.2	2320	160	9280	640	130
10 1SC	5/8	15.9	22.7	20.6	1885	130	7540	520	150
12 1SC	3/4	19.0	26.2	24	1525	105	6100	420	180
16 1SC	1	25.0	33.5	31.4	1275	88	5100	352	230
20 1SC	1-1/4	31.5	41.3	38.8	915	63	3660	252	315
24 1SC	1-1/2	38.0	48.2	44.8	725	50	2900	200	375
32 1SC	2	50.0	61.8	58.5	580	40	2320	160	475

JK Pioneer Rhinotuff Cover
COMPACT HOSES EN857 1SC
1- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER



Tube:
Reinforcement:
Cover:
Working Temperature:
MAIN APPLICATIONS

Specially compounded Oil resistance NBR-Black
 One Braid of High Tensile Steel wire.
 High Abrasion resistance,Oil & Ozone resistance Synthetic Rubber- MSHA certified.
 -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
 Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.
 Conforms to EN 857 1SC Specifications up to 1". Rest three sizes 1-1/4" - 2" JK Proprietary spec.
 Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
4 1SC Rhinotuff	1/4	6.3	12.6	10.4	3250	225	13000	900	75
5 1SC Rhinotuff	5/16	8.0	13.8	11.7	3100	215	12400	860	85
6 1SC Rhinotuff	3/8	9.5	15.9	13.8	2610	180	10440	720	90
8 1SC Rhinotuff	1/2	12.5	19.2	17.2	2320	160	9280	640	130
10 1SC Rhinotuff	5/8	15.9	22.7	20.6	1885	130	7540	520	150
12 1SC Rhinotuff	3/4	19.0	26.2	24	1525	105	6100	420	180
16 1SC Rhinotuff	1	25.0	33.5	31.4	1275	88	5100	352	230
20 1SC Rhinotuff	1-1/4	31.5	41.3	38.8	915	63	3660	252	315
24 1SC Rhinotuff	1-1/2	38.0	48.2	44.8	725	50	2900	200	375
32 1SC Rhinotuff	2	50.0	61.8	58.5	580	40	2320	160	475

**JK Pioneer SAE 100R16/EN 857 2SC
2- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.
Working Temperature: -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS High pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.
 Conforms to SAE100R16/EN857 2SC Specifications UP TO 1-1/4".
 Rest two sizes 1-1/2" - 2" JK Proprietary spec. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 2SC	1/4	6.3	14.1	11.9	5800	400	23200	1600	75
5 2SC	5/16	8.0	15.1	13.1	5075	350	20300	1400	85
6 2SC	3/8	9.5	17.5	15.5	4780	330	19120	1320	90
8 2SC	1/2	12.5	20.9	19	4000	275	16000	1100	90
10 2SC	5/8	15.9	24.2	22.2	3625	250	14500	1000	100
12 2SC	3/4	19.0	27.9	25.7	3120	215	12480	860	120
16 2SC	1	25.0	36	33.2	2395	165	9580	660	150
20 2SC	1-1/4	31.5	43.5	41.5	1810	125	7240	500	210
24 2SC	1-1/2	38.0	51.3	48	1450	100	5800	400	300
32 2SC	2	50.0	63.8	61.6	1305	90	5220	360	400

**JK Pioneer Rhinotuff Cover
COMPACT HOSE SAE 100R16/EN 857 2SC
2- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: High Abrasion resistance, Oil & Ozone resistance Synthetic Rubber- MSHA certified.
Working Temperature: -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS High pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.
 Conforms to SAE100R16/EN857 2SC Specifications UP TO 1-1/4".
 Rest two sizes 1-1/2" - 2" JK Proprietary spec. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 2SC Rhinotuff	1/4	6.3	14.1	11.9	5800	400	23200	1600	75
5 2SC Rhinotuff	5/16	8.0	15.1	13.1	5075	350	20300	1400	85
6 2SC Rhinotuff	3/8	9.5	17.5	15.5	4780	330	19120	1320	90
8 2SC Rhinotuff	1/2	12.5	20.9	19	4000	275	16000	1100	90
10 2SC Rhinotuff	5/8	15.9	24.2	22.2	3625	250	14500	1000	100
12 2SC Rhinotuff	3/4	19.0	27.9	25.7	3120	215	12480	860	120
16 2SC Rhinotuff	1	25.0	36	33.2	2395	165	9580	660	150
20 2SC Rhinotuff	1-1/4	31.5	43.5	41.5	1810	125	7240	500	210
24 2SC Rhinotuff	1-1/2	38.0	51.3	48	1450	100	5800	400	300
32 2SC Rhinotuff	2	50.0	63.8	61.6	1305	90	5220	360	400

**JK Pioneer CONSTANT PRESSURE
COMPACT HOSE SAE 100R17/ISO11237
R17 WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: One or, Two Braid of High Tensile Steel wire.
Cover: Oil, Abrasion & Ozone resistance NBR/PVC -Black. (CR Cover available on request) MSHA Certified.
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications.
 Cover Finish available from 1/4" to 1" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			PSI	BAR	PSI	BAR	
4 R17	1/4	6.3	12.60	10.40	3050.00	210.00	12200.00	840.00	50.00
5 R17	5/16	8.0	14.50	12.30	3050.00	210.00	12200.00	840.00	55.00
6 R17	3/8	9.5	16.40	14.40	3050.00	210.00	12200.00	840.00	65.00
8 R17	1/2	12.5	20.10	18.20	3050.00	210.00	12200.00	840.00	90.00
10 R17	5/8	15.9	24.90	22.90	3050.00	210.00	12200.00	840.00	100.00
12 R17	3/4	19.0	29.00	26.90	3050.00	210.00	12200.00	840.00	120.00
16 R17	1	25.0	36.96	34.50	3050.00	210.00	12200.00	840.00	150.00

**JK Pioneer Rhinotuff Cover
CONSTANT PRESSURE COMPACT HOSE
SAE 100R17/ISO11237
R17 WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: One or, Two Braid of High Tensile Steel wire.
Cover: High Abrasion resistance, Oil & Ozone resistance Synthetic Rubber- MSHA certified.
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications.
 Cover Finish available from 1/4" to 1" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			PSI	BAR	PSI	BAR	
4 R17 Rhinotuff	1/4	6.3	12.60	10.40	3050.00	210.00	12200.00	840.00	50.00
5 R17 Rhinotuff	5/16	8.0	14.50	12.30	3050.00	210.00	12200.00	840.00	55.00
6 R17 Rhinotuff	3/8	9.5	16.40	14.40	3050.00	210.00	12200.00	840.00	65.00
8 R17 Rhinotuff	1/2	12.5	20.10	18.20	3050.00	210.00	12200.00	840.00	90.00
10 R17 Rhinotuff	5/8	15.9	24.90	22.90	3050.00	210.00	12200.00	840.00	100.00
12 R17 Rhinotuff	3/4	19.0	29.00	26.90	3050.00	210.00	12200.00	840.00	120.00
16 R17 Rhinotuff	1	25.0	36.96	34.50	3050.00	210.00	12200.00	840.00	150.00

**JK Pioneer CONSTANT PRESSURE
COMPACT HOSE SAE 100R19/ISO11237 R19
WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: Oil, Abrasion & Ozone resistance NBR/PVC -Black. (CR Cover available on request) MSHA Certified.
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R19	1/4	6.30	14.10	12.00	4050	280.00	16200.00	1120.00	50.00
5 R19	5/16	8.00	15.10	13.10	4050	280.00	16200.00	1120.00	55.00
6 R19	3/8	9.50	17.50	15.50	4050	280.00	16200.00	1120.00	65.00
8 R19	1/2	12.50	21.10	19.00	4050	280.00	16200.00	1120.00	90.00
10 R19	5/8	15.90	25.50	23.20	4050	280.00	16200.00	1120.00	100.00
12 R19	3/4	19.00	29.20	26.60	4050	280.00	16200.00	1120.00	120.00

**JK Pioneer Rhinotuff Cover
CONSTANT PRESSURE COMPACT HOSE
SAE 100R19/ISO11237 R19
WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: Oil, Abrasion & Ozone resistance NBR/PVC -Black. (CR Cover available on request) MSHA Certified.
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R19 Rhinotuff	1/4	6.30	14.10	12.00	4050	280.00	16200.00	1120.00	50.00
5 R19 Rhinotuff	5/16	8.00	15.10	13.10	4050	280.00	16200.00	1120.00	55.00
6 R19 Rhinotuff	3/8	9.50	17.50	15.50	4050	280.00	16200.00	1120.00	65.00
8 R19 Rhinotuff	1/2	12.50	21.10	19.00	4050	280.00	16200.00	1120.00	90.00
10 R19 Rhinotuff	5/8	15.90	25.50	23.20	4050	280.00	16200.00	1120.00	100.00
12 R19 Rhinotuff	3/4	19.00	29.20	26.60	4050	280.00	16200.00	1120.00	120.00



**JK Pioneer JACK HOSE IJ100
Spec 2- WIRE BRAID HYDRAULIC HOSE
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High Tensile Steel wire.
Cover: Oil, Abrasion & Ozone resistance NBR/PVC –Black. MSHA Certified.
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.
MAIN APPLICATIONS Industrial Jack application.
 Conforms to IJ100 R17 Specifications.
 Cover Finish available in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 JACK Hose	1/4	6.3	15.0	13.1	10500.00	725.00	21000.00	1450.00	100.00
6 JACK Hose	3/8	9.5	19.0	16.7	10500.00	725.00	21000.00	1450.00	125.00

**JK Pioneer SAE 100R6
1-YARN BRAID
HYDRAULIC HOSE**



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: One Braid of High tenacity yarn.
Cover: Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request)
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max T = +70 °C.
MAIN APPLICATIONS Hydraulic Applications in Low pressure lines, return lines & drain lines. Fuel oil, antifreeze solutions, air and water. Conforms to SAE100R6 Specification.

PRODUCT	HOSE ID		NOM.HOSE OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM		MM	PSI	BAR	PSI	
3 R6	3/16	4.8	11.3	500.0	34	2000	136	50.0
4 R6	1/4	6.30	12.40	400.0	28	1600	112	65.0
5 R6	5/16	8.00	14.00	400.0	28	1600	112	75.0
6 R6	3/8	9.50	15.70	400.0	28	1600	112	75.0
8 R6	1/2	12.50	19.70	400.0	28	1600	112	100.0
10 R6	5/8	15.90	23.20	350.0	24	1400	96	125.0
12 R6	3/4	19.00	26.40	300.0	21	1200	84	150.0
14 R6	7/8	22.00	29.80	215.0	15	860	60	165.0
16 R6	1	25.00	33.50	205.0	14	820	56	200.0

JK Pioneer Hi Temp SAE 100R6 1-YARN BRAID HYDRAULIC HOSE



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: One Braid of High tenacity yarn.
Cover: Oil & Ozone resistance NBR/PVC -Black. (CR Cover available on request)
Working Temperature: From -40 °C to +135 °C continuous operation. For Air max T = +100 °C.
MAIN APPLICATIONS Hydraulic Applications in Low pressure lines, return lines & drain lines. Fuel oil, antifreeze solutions, air and water. Conforms to SAE100R6 Specification.

PRODUCT	HOSE ID		NOM.HOSE OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS BAR
	INCH	MM		PSI	BAR	PSI	BAR	
3 R6HT	3/16	4.8	11.3	500.0	34	2000	136	50.0
4 R6HT	1/4	6.30	12.40	400.0	28	1600	112	65.0
5 R6HT	5/16	8.00	14.00	400.0	28	1600	112	75.0
6 R6HT	3/8	9.50	15.70	400.0	28	1600	112	75.0
8 R6HT	1/2	12.50	19.70	400.0	28	1600	112	100.0
10 R6HT	5/8	15.90	23.20	350.0	24	1400	96	125.0
12 R6HT	3/4	19.00	26.40	300.0	21	1200	84	150.0
14 R6HT	7/8	22.00	29.80	215.0	15	860	60	165.0
16 R6HT	1	25.00	33.50	205.0	14	820	56	200.0

JK Pioneer SAE 100R3 2-YARN BRAID HYDRAULIC HOSE



Tube: Specially compounded Oil resistance NBR-Black
Reinforcement: Two Braid of High tenacity yarn.
Cover: Oil & Ozone resistance NBR/PVC -Black. (CR Cover available on request)
Working Temperature: From -40 °C to +100 °C continuous operation. For Air max T = +70 °C.
MAIN APPLICATIONS Hydraulic Applications in Low pressure lines, return lines & drain lines. Fuel oil, antifreeze solutions, air and water. Conforms to SAE100R3 Specification.

PRODUCT	HOSE ID		NOM.HOSE OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS BAR
	INCH	MM		PSI	BAR	PSI	BAR	
4 R3	1/4	6.30	14.50	1250.00	86.00	5000.00	344.00	75.00
5 R3	5/16	8.00	17.50	1200.00	83.00	4800.00	332.00	100.00
6 R3	3/8	9.50	18.80	1125.00	78.00	4500.00	312.00	100.00
8 R3	1/2	12.50	23.40	1000.00	69.00	4000.00	276.00	125.00
10 R3	5/8	15.90	27.00	875.00	61.00	3500.00	244.00	140.00
12 R3	3/4	19.00	31.70	750.00	52.00	3000.00	208.00	150.00
16 R3	1	25.00	38.50	565.00	39.00	2260.00	156.00	200.00

JK Pioneer Agrotrolley Hose 1- WIRE BRAID HYDRAULIC HOSE



- Tube:** Specially compounded Oil resistance NBR-Black
- Reinforcement:** One Braid of High Tensile Steel wire.
- Cover:** Oil & Ozone resistance NBR/PVC –Black.
- Working Temperature:** -40 °C to +100 °C continuous operation.
- MAIN APPLICATIONS** Tractor Trolley Application.
- CAUTION:** Don't use this hose as a replacement of SAE100R1 Hose.
Cover Finish available ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
6 Ag Trolley 1-Wire	3/8	9.5	17.2	15.3	2450	170	7350	510	125
8 Ag Trolley 1-Wire	1/2	12.5	20.4	18.0	2000	140	6000	420	180

JK Pioneer Agrotrolley Hose 2- WIRE BRAID HYDRAULIC HOSE



- Tube:** Specially compounded Oil resistance NBR-Black
- Reinforcement:** Two Braid of High Tensile Steel wire.
- Cover:** Oil & Ozone resistance NBR/PVC –Black.
- Working Temperature:** -40 °C to +100 °C continuous operation.
- MAIN APPLICATIONS** Tractor Trolley Application.
- CAUTION:** Don't use this hose as a replacement of SAE100R1 Hose.
Cover Finish available ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
6 Ag Trolley 2-Wire	3/8	9.5	18.5	16.3	3500	245	8750	615	125
8 Ag Trolley 2-Wire	1/2	12.5	21.7	19.4	3500	245	8750	615	180