KOMAN

HYDRAULIC




KOMAN






# INTRODUCTION OF KOMAN

**시대는 변해도, 기업 환경은 달라도 NO.1 비즈니스 파트너, Koman 입니다**

코만은 1981년 회사 설립 이래, 오랫동안 축적된 기술과 신뢰를 바탕으로, 정밀한 품질관리 체제에서 유압용 호스 및 호스 피팅과 어댑터를 SAE, DIN, JIC 및 JIS 등의 국제 규격을 통해 생산하고 있으며, 저희들 고유의 제품은 물론 고객의 특별주문을 통해 생산하고 있습니다. 오랜 연구개발을 통해 호스 피팅 제조기술 부문에서 의장등록 11건, 실용신안 6건 및 특허 1건 등을 특허청으로부터 인증받아 보유하고 있으며, ISO 9001 품질시스템 인증 획득을 바탕으로 고객이 요구하는 최상의 제품을 공급하고 있습니다.

It's great pleasure to introduce ourselves, Koman Hydraulic Company Limited to you.
We, Koman Hydraulic Co., Ltd which was founded in 1981, have been producing high quality Hydraulic Hoses, Hydraulic Hose Fittings and Adapter under the precise quality control with the accumulated technology and confidence, according to the well known standard SAE, DIN, JIC, JIS etc. and occasionally special design by customer's request. We have certified 11 Registration of Design, 6 Utility Model and 1 Patent for the fitting manufacturing skill thanks to our efforts for many years and been providing the best quality products based on ISO 9001 Quality System Certification. We, Koman, will continue to devote ourselves to meet with customer satisfaction by providing with highest quality and best service.

# HISTORY OF KOMAN

- 1981 Established under the name of "Gyesan Hose Trading Company"
- 1988 Completion of 1st Plant in Chang-won(Hydraulic Fitting)
- 1989 Starting the export Trade
- 1999 Changing the name "Koman Hydraulic Co., Ltd"
- 1999 Acquired ISO9002
- 2003 Acquired ISO9001
- 2007 Development of Rotary hose fittings for oil-field
- 2008 Completion of Automated Production Plant in Haman
- 2012 Completion of Forging Plant
- 2012 Development of Bunkering hose fittings for offshore plant
- 2013 Completion of Hose Plant in Haman : Set-up of Affiliated R&D Institute
- 2014 Trader Prize & $10 Million Export Prize in Korea Export Award
- 2015 Completion of 2nd Automated production Plant



# EXPORTING COUNTRY



Australia Brazil Canada China Colombia Guatemala

Hongkong India Indonesia Italy Japan Malaysia

Mexico Panama Peru Philippines Sigapore South Africa

Taiwan Thailand Turkey UAE USA Vietnam

## AUTHENTICATION CERTIFICATE




ISO 9001



MSHA IC-304




Affiliated R&D Institute




Venture business




Innovation Biz




Global hidden champions

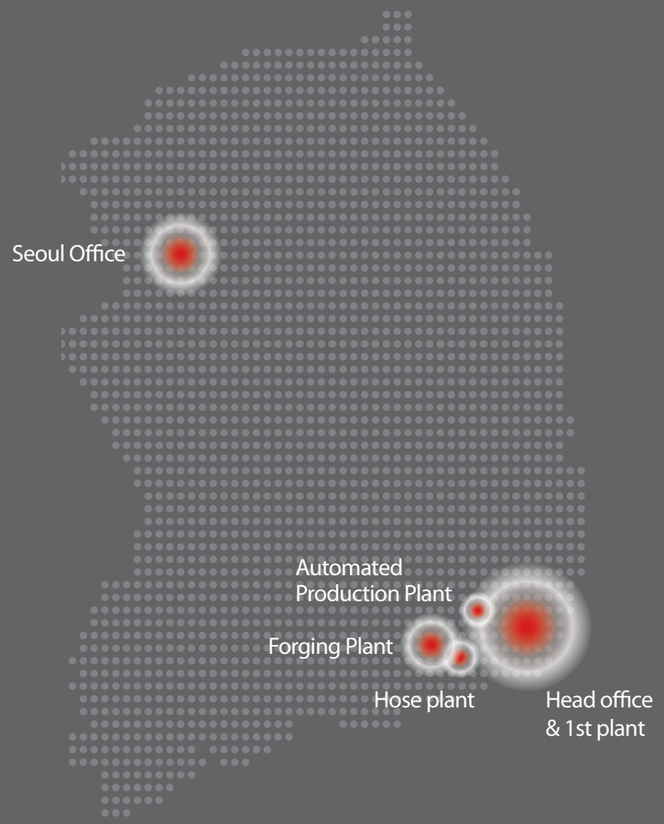
# LOCATION OF KOMAN


Head office & 1st plant


Forging Plant


Hose plant


Automated Production Plant




## 7 Major Information to Selecting a Hose

| | | |
|---|---|---|
| S | SIZE | |
| | Inside Diameter | |
| | Outside Diameter | |
| | Length | |
| T | TEMPERATURE | |
| | Highest | |
| | Lowest | |
| A | APPLICATION | |
| | Conditions of use | |
| M | METERIAL | |
| | What is going through the hose | |
| P | PRESSURE | |
| | Working Pressure | |
| E | ENDS | |
| | Style | |
| | Type | |
| | Orientation | |
| | Attachment Methods | |
| | etc | |
| D | DELIVERY | |
| | Packaging | |
| | Delivery Date | |
| | INCOTERMS | |

## Nomographic Chart

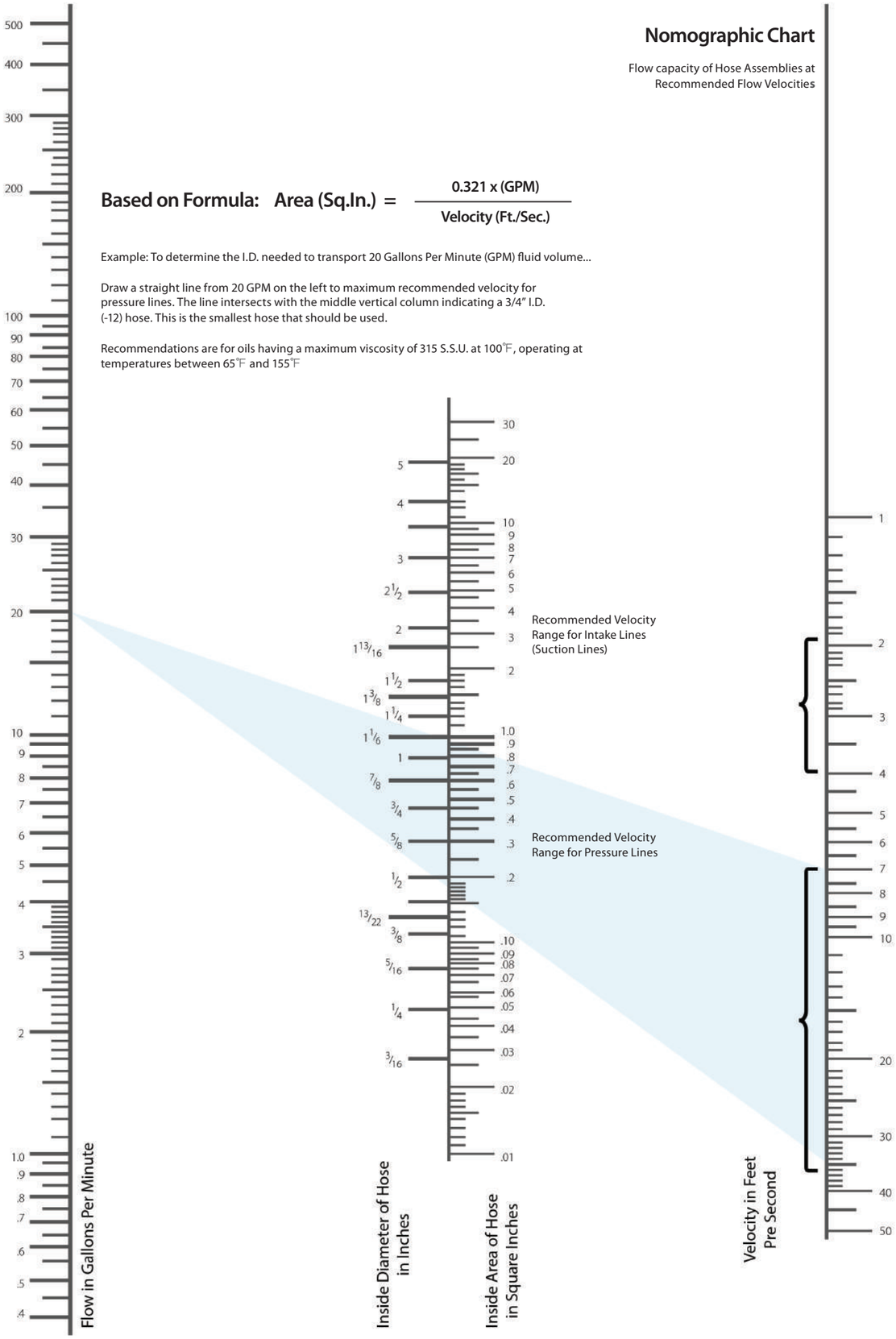
Flow capacity of Hose Assemblies at Recommended Flow Velocities

**Based on Formula: Area (Sq.In.) = $\frac{0.321 \times (GPM)}{Velocity\ (Ft./Sec.)}$**

Example: To determine the I.D. needed to transport 20 Gallons Per Minute (GPM) fluid volume...

Draw a straight line from 20 GPM on the left to maximum recommended velocity for pressure lines. The line intersects with the middle vertical column indicating a 3/4" I.D. (-12) hose. This is the smallest hose that should be used.

Recommendations are for oils having a maximum viscosity of 315 S.S.U. at 100℉, operating at temperatures between 65℉ and 155℉




## SAE HOSE WORKING PRESSURES (psi)

| Specification | Hose Style | Description | NOMINAL HOSE INSIDE DIAMETER in INCHES and DASH SIZE | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3/16 (-3) | 1/4 (-4) | 5/16 (-5) | 3/8 (-6) | 1/2 (-8) | 5/8 (-10) | 3/4 (-12) | 1 (-16) | 1-1/4 (-20) | 1-1/2 (-24) | 2 (-32) | 2-1/2 (-40) | 3 (-48) | 3-1/2 (-56) | 4 (-64) |
| SAE J517 | 100R1 | 1 WIRE BRAID | 3000 | 2750 | 2500 | 2250 | 2000 | 1500 | 1250 | 1000 | 625 | 500 | 375 | | | | |
| SAE J517 | 100R1 TYPE S | HIGH PRESSURE 1 WIRE BRAID | 3630 | 3260 | 3120 | 2610 | 2320 | 1890 | 1520 | 1280 | 910 | 730 | 580 | | | | |
| SAE J517 | 100R2 | 2 WIRE BRAID | 5000 | 5000 | 4250 | 4000 | 3500 | 2750 | 2250 | 2000 | 1625 | 1250 | 1125 | 1000 | | | |
| SAE J517 | 100R2 TYPE S | HIGH PRESSURE 2 WIRE BRAID | 6020 | 5800 | 5080 | 4790 | 3990 | 3630 | 3120 | 2390 | 1810 | 1310 | 1160 | 1020 | | | |
| SAE J517 | 100R3 | 2 FABRIC BRAID | 1500 | 1250 | 1200 | 1125 | 1000 | 875 | 750 | 565 | 375 | | | | | | |
| SAE J517 | 100R4 | SUCTION | | | | | | | 300 | 250 | 200 | 150 | 100 | 62 | 56 | 45 | 35 |
| SAE J517 | 100R6 | 1 FABRIC BRAID | 500 | 400 | 400 | 400 | 400 | 350 | 300 | | | | | | | | |
| SAE J517 | 100R7 | THERMOPLASTIC | 3000 | 2750 | 2500 | 2250 | 2000 | 1500 | 1250 | 1000 | | | | | | | |
| SAE J517 | 100R8 | HIGH PRESSURE THERMOPLASTIC | 5000 | 5000 | | 4000 | 3500 | 2750 | 2250 | 2000 | | | | | | | |
| SAE J517 | 100R9 | 4 WIRE SPIRAL | | | | 4500 | 4000 | | 3000 | 3000 | 2500 | 2000 | 2000 | | | | |
| SAE J517 | 100R10 | HIGH PRESSURE 4 WIRE SPIRAL | 10000 | 8750 | | 7500 | 6250 | | 5000 | 4000 | 3000 | 2500 | 2500 | | | | |
| SAE J517 | 100R11 | HIGH PRESSURE 6 WIRE SPIRAL | 12500 | 11250 | | 10000 | 7500 | | 6250 | 5000 | 3500 | 3000 | 3000 | 2500 | | | |
| SAE J517 | 100R12 | 4 WIRE SPIRAL | | | | 4000 | 4000 | 4000 | 4000 | 4000 | 3000 | 2500 | 2500 | | | | |
| SAE J517 | 100R13 | 5000 PSI WIRE SPIRAL | | | | | | | 5000 | 5000 | 5000 | 5000 | 5000 | | | | |
| SAE J517 | 100R15 | 6000 PSI WIRE SPIRAL | | | | 6000 | 6000 | | 6000 | 6000 | 6000 | 6000 | | | | | |
| SAE J517 | 100R16 | COMPACT WIRE BRAID | | 5000 | 4250 | 4000 | 3500 | 2750 | 2250 | 2000 | 1625 | | | | | | |
| SAE J517 | 100R16 TYPE S | HIGH PRESSURE COMPACT WIRE BRAID | 6020 | 5800 | 5080 | 4790 | 3990 | 3630 | 3120 | 2390 | 1810 | | | | | | |
| SAE J517 | 100R17 | 3000 PSI WIRE BRAID | | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | | | | | | | |
| SAE J517 | 100R18 | 3000 PSI THERMOPLASTIC | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | | | | | | | |

## SAE HOSE WORKING PRESSURES (psi)

| Specification | Hose Style | Description | NOMINAL HOSE INSIDE DIAMETER in INCHES and DASH SIZE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1/8 (-3) | 3/16 (-4) | 1/4 (-5) | 5/16 (-6) | 3/8 (-7) | 13/32 (-8) | 1/2 (-10) | 5/8 (-12) | 3/4 (-14) | 7/8 (-16) | 1 (-18) | 1-1/8 (-20) | 1-3/8 (-24) | 1-13/16 (-32) | 2-3/8 (-40) | 3 (-48) |
| SAE J517 | 100R5 | 1 WIRE BRAID TEXTILE COVER | | 3000 | 3000 | 2250 | | 2000 | 1750 | 1500 | | 800 | | 625 | 500 | 350 | 350 | 200 |
| SAE J517 | 100R14 | 1 WIRE BRAID PTFE | 1500 | 1500 | 1500 | 1500 | 1500 | 1000 | 800 | 800 | 800 | 800 | 800 | 600 | | | | |

## EN HOSE WORKING PRESSURES (psi)

| Specification | Hose Style | Description | NOMINAL HOSE INSIDE DIAMETER in INCHES and DASH SIZE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3/16 (-3) | 1/4 (-4) | 5/16 (-5) | 3/8 (-6) | 1/2 (-8) | 5/8 (-10) | 3/4 (-12) | 1 (-16) | 1-1/4 (-20) | 1-1/2 (-24) | 2 (-32) |
| EN 853 | 1ST | 1 WIRE BRAID STANDARD COVER | 3630 | 3265 | 3120 | 2610 | 2320 | 1890 | 1525 | 1280 | 915 | 725 | 580 |
| EN 853 | 1SN | 1 WIRE BRAID THIN COVER | 3630 | 3265 | 3120 | 2610 | 2320 | 1890 | 1525 | 1280 | 915 | 725 | 580 |
| EN 853 | 2ST | 2 WIRE BRAID STANDARD COVER | 6020 | 5800 | 5075 | 4785 | 3990 | 3625 | 3120 | 2395 | 1815 | 1305 | 1160 |
| EN 853 | 2SN | 2 WIRE BRAID THIN COVER | 6020 | 5800 | 5075 | 4785 | 3990 | 3625 | 3120 | 2395 | 1815 | 1305 | 1160 |
| EN 856 | 4SP | 4 WIRE SPIRAL | | 6530 | | 6455 | 6020 | 5080 | 5080 | 4065 | 3050 | 2685 | 2395 |
| EN 856 | 4SH | HIGH PRESSURE 4 WIRE SPIRAL | | | | | | | 6095 | 5515 | 4715 | 4210 | 3630 |
| EN 857 | 1SC | COMPACT 1 WIRE BRAID | | 3265 | 3120 | 2610 | 2325 | 1890 | 1525 | 1280 | | | |
| EN 857 | 2SC | COMPACT 2 WIRE BRAID | | 5805 | 5080 | 4790 | 3990 | 3630 | 3120 | 2395 | | | |

## PRESSURE CONVERSION CHART

| | psi | mbar | Bar | kPa | MPa | kgf/cm² |
|---|---|---|---|---|---|---|
| **psi** | 1 | 68.95 | 0.0689 | 6.895 | 0.0069 | 0.070307 |
| **mbar** | 0.0145 | 1 | 0.001 | 0.1 | 0.0001 | 1019.716 |
| **Bar** | 14.504 | 1000 | 1 | 100 | 0.1 | 1.019716 |
| **kPa** | 0.14504 | 10 | 0.01 | 1 | 0.001 | 0.010197 |
| **MPa** | 145.04 | 10,000 | 10 | 1000 | 1 | 10.197162 |
| **kgf/cm²** | 14.223393 | 980.665 | 0.980665 | 98.0665 | 0.098067 | 1 |

## LENGTH CONVERSION CHART

| | cm | m | inch | feet | yard | mile |
|---|---|---|---|---|---|---|
| **cm** | 1 | 0.01 | 0.393701 | 0.032808 | 0.010936 | 0.000006 |
| **m** | 100 | 1 | 39.370079 | 3.28084 | 1.093613 | 0.000621 |
| **inch** | 2.54 | 0.0254 | 1 | 0.083333 | 0.027778 | 0.000016 |
| **feet** | 30.48 | 0.3048 | 12 | 1 | 0.333333 | 0.000189 |
| **yard** | 91.44 | 0.9144 | 36 | 3 | 1 | 0.000568 |
| **mile** | 160934.4 | 1609.344 | 63360 | 5280 | 1760 | 1 |

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# HYDRAULIC
# HOSE



# SAE 100 R1AT / 1SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | One wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40℃ to +100℃(-40℉ to +212℉). Hot air maximum 70℃.<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R1AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.1 | 13.4 | 225 | 450 | 900 | 100 |
| 05 | 5/16" | 8 | 7.9 | 12.7 | 15.0 | 215 | 430 | 850 | 115 |
| 06 | 3/8" | 10 | 9.5 | 15.1 | 17.4 | 180 | 360 | 720 | 130 |
| 08 | 1/2" | 12 | 12.7 | 18.3 | 20.6 | 160 | 320 | 640 | 180 |
| 10 | 5/8" | 16 | 15.9 | 21.4 | 23.7 | 130 | 260 | 520 | 200 |
| 12 | 3/4" | 19 | 19.0 | 25.4 | 27.7 | 105 | 210 | 420 | 240 |
| 16 | 1" | 25 | 25.4 | 33.3 | 35.6 | 88 | 175 | 350 | 300 |
| 20 | 1 1/4" | 31 | 31.7 | 40.5 | 43.5 | 63 | 150 | 250 | 420 |
| 24 | 1 1/2" | 38 | 38.1 | 46.8 | 50.6 | 50 | 100 | 200 | 500 |
| 32 | 2" | 51 | 50.8 | 60.2 | 64.0 | 40 | 80 | 160 | 630 |



# SAE 100 R2AT / 2SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40℃ to +100℃(-40℉ to +212℉). Hot air maximum 70℃.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multi-fit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R2AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.7 | 15.0 | 400 | 800 | 1600 | 100 |
| 05 | 5/16" | 8 | 7.9 | 14.3 | 16.6 | 350 | 700 | 1400 | 115 |
| 06 | 3/8" | 10 | 9.5 | 16.7 | 19.0 | 330 | 660 | 1320 | 130 |
| 08 | 1/2" | 12 | 12.7 | 19.8 | 22.2 | 275 | 550 | 1100 | 180 |
| 10 | 5/8" | 16 | 15.9 | 23.0 | 25.4 | 250 | 500 | 1000 | 200 |
| 12 | 3/4" | 19 | 19.0 | 27.0 | 29.3 | 215 | 430 | 850 | 240 |
| 16 | 1" | 25 | 25.4 | 34.9 | 38.1 | 165 | 325 | 650 | 300 |
| 20 | 1 1/4" | 31 | 31.7 | 44.5 | 48.3 | 125 | 250 | 500 | 420 |
| 24 | 1 1/2" | 38 | 38.1 | 50.8 | 54.6 | 90 | 180 | 360 | 500 |
| 32 | 2" | 51 | 50.8 | 63.5 | 67.3 | 80 | 160 | 320 | 630 |

# SAE 100 R16

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber |
| REINFORCEMENT | Two wire braid of high tensile steel wire with protective coating |
| TEMPERATURE | -40℃ to +100℃(-40℉ to +212℉). Hot air maximum 70℃.<br>Prolonged operation at extreme temperatures will reduce hose life. |
| FITTING | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multi-fit insert fitting |
| OPTION | Smooth cover / Wrapped cover |
| FLAME RESISTANCE | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R16 HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.3 | 14.4 | 350 | 700 | 1400 | 50 |
| 05 | 5/16" | 8 | 7.9 | 13.3 | 15.7 | 297 | 594 | 1188 | 55 |
| 06 | 3/8" | 10 | 9.5 | 15.8 | 18.8 | 280 | 560 | 1120 | 65 |
| 08 | 1/2" | 12 | 12.7 | 19.0 | 21.9 | 245 | 490 | 980 | 90 |
| 10 | 5/8" | 16 | 15.9 | 22.4 | 25.4 | 192 | 384 | 768 | 100 |
| 12 | 3/4" | 19 | 19.0 | 26.2 | 28.9 | 157 | 314 | 628 | 120 |
| 16 | 1" | 25 | 25.4 | 34.0 | 36.5 | 140 | 280 | 560 | 150 |



# SAE 100 R17

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber |
| REINFORCEMENT | 1/4" ~ 5/8" One high tensile steel wire braid.<br>3/4" ~ 1" Two high tensile steel wire braids |
| TEMPERATURE | -40℃ to +100℃(-40℉ to +212℉). Hot air maximum 70℃.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| FITTING | One piece hose fitting : 200 Series Non-skive type |
| | One piece hose fitting : 200 Series Non-skive type |
| OPTION | Smooth cover / Wrapped cover |
| FLAME RESISTANCE | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R17 HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 10.5 | 12.5 | 210 | 420 | 840 | 50 |
| 05 | 5/16" | 8 | 7.9 | 12.0 | 14.3 | 210 | 420 | 840 | 55 |
| 06 | 3/8" | 10 | 9.5 | 13.9 | 16.5 | 210 | 420 | 840 | 65 |
| 08 | 1/2" | 12 | 12.7 | 17.6 | 19.7 | 210 | 420 | 840 | 90 |
| 10 | 5/8" | 16 | 15.9 | 21.9 | 24.0 | 210 | 420 | 840 | 100 |
| 12 | 3/4" | 19 | 19.0 | 25.7 | 28.0 | 210 | 420 | 840 | 120 |
| 16 | 1" | 25 | 25.4 | 33.8 | 36.2 | 210 | 420 | 840 | 150 |

# PILOT

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber |
| REINFORCEMENT | One wire braid of high tensile steel wire with protective coating |
| TEMPERATURE | -40℃ to +100℃(-40℉ to +212℉). Hot air maximum 70℃.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| FITTING | One piece non skive fitting for compact hose. |

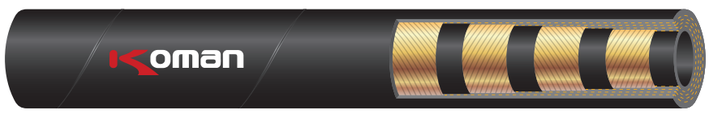
## HOSE SPECIFICATIONS FOR PILOT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 9.9 | 11.7 | 125 | 250 | 500 | 30 |
| 05 | 5/16" | 8 | 7.9 | 11.7 | 13.5 | 125 | 250 | 500 | 40 |
| 06 | 3/8" | 10 | 9.5 | 13.0 | 14.6 | 125 | 250 | 500 | 50 |
| 08 | 1/2" | 12 | 12.7 | 16.2 | 18.0 | 125 | 250 | 500 | 60 |



# SAE 100 R12

SPIRAL WIRE HYDRAULIC HOSE



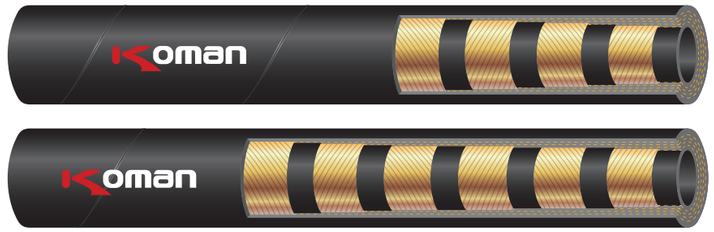

| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber |
| REINFORCEMENT | Four plies of spirally wound high tensile steel wire |
| TEMPERATURE | -40℃ to +100℃(-40℉ to +212℃). Hot air maximum 70℃.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| FITTING | One piece hose fitting : 400 Series Non-skive type |
| | Two piece hose fitting : TS99S ferrule series + Multi-fit insert fitting |

## HOSE SPECIFICATIONS FOR SAE 100R12

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 06 | 3/8" | 10 | 9.5 | 17.2 | 20.3 | 276 | 552 | 1104 | 70 |
| 08 | 1/2" | 12 | 12.7 | 20.7 | 23.8 | 276 | 552 | 1104 | 84 |
| 10 | 5/8" | 16 | 15.9 | 24.6 | 27.4 | 276 | 552 | 1104 | 110 |
| 12 | 3/4" | 19 | 19.0 | 27.7 | 30.7 | 276 | 552 | 1104 | 133 |
| 16 | 1" | 25 | 25.4 | 34.9 | 28.0 | 276 | 552 | 1104 | 185 |
| 20 | 1 1/4" | 31 | 31.7 | 43.9 | 47.0 | 207 | 414 | 828 | 265 |
| 24 | 1 1/2" | 38 | 38.1 | 50.4 | 53.5 | 172 | 344 | 688 | 320 |
| 32 | 2" | 51 | 50.8 | 63.7 | 66.7 | 172 | 344 | 688 | 450 |

# SAE 100 R13

SPIRAL WIRE HYDRAULIC HOSE




| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber |
| REINFORCEMENT | 3/4" ~1" Four high tensile steel wire spiral layers<br>1-1/4"~2" Six high tensile steel wire spiral layers |
| TEMPERATURE | -40℃ to +120℃(-40℉ to +248℉)<br>Prolonged operation at extreme temperatures will reduce hose life. |
| FITTING | One piece hose fitting : 600 Series Non-skive type |
| | Two piece hose fitting : TS99S ferrule series + Multi-fit insert fitting |
| | Interlock hose fitting : IS99S or IS66S ferrule + Interlock hose fitting |

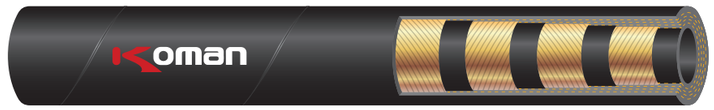
## HOSE SPECIFICATIONS FOR SAE 100R13

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 12 | 3/4" | 19 | 19 | 29.2 | 32.0 | 345 | 830 | 1380 | 240 |
| 16 | 1" | 25 | 25.4 | 35.9 | 39.2 | 345 | 830 | 1380 | 300 |
| 20 | 1 1/4" | 31 | 31.8 | 46.8 | 49.8 | 345 | 830 | 1380 | 420 |
| 24 | 1 1/2" | 38 | 38.1 | 54.0 | 57.3 | 345 | 830 | 1380 | 500 |
| 32 | 2" | 51 | 50.8 | 68.4 | 71.9 | 345 | 830 | 1380 | 630 |



# DIN EN856 4SP

SPIRAL WIRE HYDRAULIC HOSE



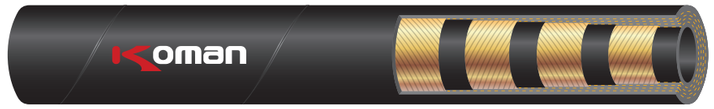

| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber |
| REINFORCEMENT | Four plies of spirally wound high tensile steel wire |
| TEMPERATURE | -40℃ to +100℃(-40℉ to +212℉)<br>Prolonged operation at extreme temperatures will reduce hose life. |
| FITTING | One piece hose fitting : 400SH Series Non-skive type |
| | Two piece hose fitting : TS99S ferrule series + Multi-fit insert fitting |

## HOSE SPECIFICATIONS FOR DIN EN 856 4SP

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 06 | 3/8" | 10 | 9.5 | 17.5 | 21.4 | 445 | 1070 | 1780 | 180 |
| 08 | 1/2" | 12 | 12.7 | 20.2 | 24.6 | 415 | 995 | 1660 | 230 |
| 10 | 5/8" | 16 | 15.9 | 23.8 | 28.2 | 350 | 840 | 1400 | 250 |
| 12 | 3/4" | 19 | 19.0 | 28.2 | 32.2 | 350 | 840 | 1400 | 300 |
| 16 | 1" | 25 | 25.4 | 35.3 | 39.7 | 280 | 670 | 1120 | 340 |
| 20 | 1 1/4" | 31 | 31.7 | 46 | 50.8 | 210 | 500 | 840 | 460 |
| 24 | 1 1/2" | 38 | 38.1 | 52.4 | 57.2 | 185 | 445 | 740 | 560 |
| 32 | 2" | 51 | 50.8 | 65.3 | 69.8 | 165 | 400 | 660 | 660 |

# DIN EN856 4SH

SPIRAL WIRE HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Four plies of spirally wound high tensile steel wire |
| **TEMPERATURE** | -40℃ to +100℃(-40℉ to +212℉)<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **FITTING** | One piece hose fitting : 400SH Series Non-skive type |
| | Two piece hose fitting : TS99S ferrule series + Multi-fit insert fitting |
| | Interlock hose fitting : IS99S Ferrule series + Interlock insert fitting |

## HOSE SPECIFICATIONS FOR DIN EN 856 4SH

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 12 | 3/4" | 19 | 19.0 | 28.4 | 32.2 | 420 | 1000 | 1680 | 280 |
| 16 | 1" | 25 | 25.4 | 35.2 | 39.7 | 380 | 910 | 1520 | 340 |
| 20 | 1 1/4" | 31 | 31.7 | 41.9 | 50.8 | 345 | 830 | 1380 | 460 |
| 24 | 1 1/2" | 38 | 38.1 | 48.8 | 57.2 | 290 | 700 | 1160 | 560 |
| 32 | 2" | 51 | 50.8 | 63.2 | 69.8 | 250 | 600 | 1000 | 700 |



# 1SC DIN EN 857

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | One wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40°C to +100°C(-40°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR 1SC HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 10.4 | 12.2 | 225 | 450 | 900 | 100 |
| 05 | 5/16" | 8 | 7.9 | 11.5 | 13.6 | 215 | 430 | 850 | 115 |
| 06 | 3/8" | 10 | 9.5 | 13.6 | 15.5 | 180 | 360 | 720 | 130 |
| 08 | 1/2" | 12 | 12.7 | 17 | 19 | 160 | 320 | 640 | 180 |
| 10 | 5/8" | 16 | 15.9 | 20.4 | 22.4 | 130 | 260 | 520 | 200 |
| 12 | 3/4" | 19 | 19.0 | 23.8 | 25.8 | 105 | 210 | 420 | 240 |
| 16 | 1" | 25 | 25.4 | 31.3 | 33.4 | 88 | 175 | 350 | 300 |

# 2SC DIN EN 857

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40°C to +100°C(-40°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR 2SC HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.3 | 13.4 | 400 | 800 | 1600 | 100 |
| 05 | 5/16" | 8 | 7.9 | 12.9 | 15.0 | 350 | 700 | 1400 | 115 |
| 06 | 3/8" | 10 | 9.5 | 15.0 | 17.1 | 330 | 660 | 1320 | 130 |
| 08 | 1/2" | 12 | 12.7 | 18.6 | 20.7 | 275 | 550 | 1100 | 180 |
| 10 | 5/8" | 16 | 15.9 | 21.7 | 23.8 | 250 | 500 | 1000 | 200 |
| 12 | 3/4" | 19 | 19.0 | 25.6 | 27.7 | 215 | 430 | 850 | 240 |
| 16 | 1" | 25 | 25.4 | 33.3 | 35.5 | 165 | 325 | 650 | 300 |





# JACK HOSE

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40°C to +100°C(-40°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR JACK HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.8 | 15 | 700 | 1050 | 1400 | 100 |
| 06 | 3/8" | 10 | 9.5 | 16.7 | 18.9 | 700 | 1050 | 1400 | 130 |

# SUPER HIGH ABRASION RESISTANT
# SAE 100 R1AT / 1SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber with UHMW film |
| **REINFORCEMENT** | One wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40°C to +100°C(-40°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R1AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.1 | 13.4 | 225 | 450 | 900 | 100 |
| 05 | 5/16" | 8 | 7.9 | 12.7 | 15.0 | 215 | 430 | 850 | 115 |
| 06 | 3/8" | 10 | 9.5 | 15.1 | 17.4 | 180 | 360 | 720 | 130 |
| 08 | 1/2" | 12 | 12.7 | 18.3 | 20.6 | 160 | 320 | 640 | 180 |
| 10 | 5/8" | 16 | 15.9 | 21.4 | 23.7 | 130 | 260 | 520 | 200 |
| 12 | 3/4" | 19 | 19.0 | 25.4 | 27.7 | 105 | 210 | 420 | 240 |
| 16 | 1" | 25 | 25.4 | 33.3 | 35.6 | 88 | 175 | 350 | 300 |
| 20 | 1.1/4" | 31 | 31.7 | 40.5 | 43.5 | 63 | 150 | 250 | 420 |
| 24 | 1.1/2" | 38 | 38.1 | 46.8 | 50.6 | 50 | 100 | 200 | 500 |
| 32 | 2" | 51 | 50.8 | 60.2 | 64.0 | 40 | 80 | 160 | 630 |



# SUPER HIGH ABRASION RESISTANT
# SAE 100 R2AT / 2SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE



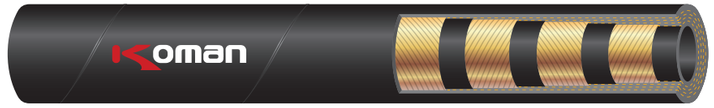

| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber with UHMW film |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -40°C to +100°C(-40°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R2AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.7 | 15.0 | 400 | 800 | 1600 | 100 |
| 05 | 5/16" | 8 | 7.9 | 14.3 | 16.6 | 350 | 700 | 1400 | 115 |
| 06 | 3/8" | 10 | 9.5 | 16.7 | 19.0 | 330 | 660 | 1320 | 130 |
| 08 | 1/2" | 12 | 12.7 | 19.8 | 22.2 | 275 | 550 | 1100 | 180 |
| 10 | 5/8" | 16 | 15.9 | 23.0 | 25.4 | 250 | 500 | 1000 | 200 |
| 12 | 3/4" | 19 | 19.0 | 27.0 | 29.3 | 215 | 430 | 850 | 240 |
| 16 | 1" | 25 | 25.4 | 34.9 | 38.1 | 165 | 325 | 650 | 300 |
| 20 | 1.1/4" | 31 | 31.7 | 44.5 | 48.3 | 125 | 250 | 500 | 420 |
| 24 | 1.1/2" | 38 | 38.1 | 50.8 | 54.6 | 90 | 180 | 360 | 500 |
| 32 | 2" | 51 | 50.8 | 63.5 | 67.3 | 80 | 160 | 320 | 630 |

# SUPER HIGH ABRASION RESISTANT
# SAE 100 R12

SPIRAL WIRE HYDRAULIC HOSE




| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber with UHMW film |
| REINFORCEMENT | Four plies of spirally wound high tensile steel wire |
| TEMPERATURE | -40°C to +120°C(-40°F to +248°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| FITTING | One piece hose fitting : 400 Series Non-skive type |
| | Two piece hose fitting : TS99S ferrule series + Multifit insert fitting |

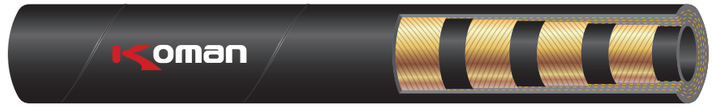
## HOSE SPECIFICATIONS FOR SAE 100R12

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 06 | 3/8" | 10 | 9.5 | 17.2 | 20.3 | 276 | 552 | 1104 | 70 |
| 08 | 1/2" | 12 | 12.7 | 20.7 | 23.8 | 276 | 552 | 1104 | 84 |
| 10 | 5/8" | 16 | 15.9 | 24.6 | 27.4 | 276 | 552 | 1104 | 110 |
| 12 | 3/4" | 19 | 19.0 | 27.7 | 30.7 | 276 | 552 | 1104 | 133 |
| 16 | 1" | 25 | 25.4 | 34.9 | 28.0 | 276 | 552 | 1104 | 185 |
| 20 | 1.1/4" | 31 | 31.7 | 43.9 | 47.0 | 207 | 414 | 828 | 265 |
| 24 | 1.1/2" | 38 | 38.1 | 50.4 | 53.5 | 172 | 344 | 688 | 320 |
| 32 | 2" | 51 | 50.8 | 63.7 | 66.7 | 172 | 344 | 688 | 450 |



# SUPER HIGH ABRATION RESISTANT
# DIN EN856 4SH

SPIRAL WIRE HYDRAULIC HOSE




| | |
|---|---|
| TUBE | Synthetic rubber |
| COVER | Oil, weather and abrasion resistant synthetic rubber with UHMW film |
| REINFORCEMENT | Four plies of spirally wound high tensile steel wire |
| TEMPERATURE | -40°C to +100°C(-40°F to +212°F)<br>Prolonged operation at extreme temperatures will reduce hose life. |
| FITTING | One piece hose fitting : 400SH Series Non-skive type |
| | Two piece hose fitting : TS99S ferrule series + Multifit insert fitting |
| | Interlock hose fitting : IS99S Ferrule series + Interlock insert fitting |

## HOSE SPECIFICATIONS FOR DIN EN 856 4SH

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 12 | 3/4" | 19 | 19.0 | 28.4 | 32.2 | 420 | 1000 | 1680 | 280 |
| 16 | 1" | 25 | 25.4 | 35.2 | 39.7 | 380 | 910 | 1520 | 340 |
| 20 | 1.1/4" | 31 | 31.7 | 41.9 | 50.8 | 345 | 830 | 1380 | 460 |
| 24 | 1.1/2" | 38 | 38.1 | 48.8 | 57.2 | 290 | 700 | 1160 | 560 |
| 32 | 2" | 51 | 50.8 | 63.2 | 69.8 | 250 | 600 | 1000 | 700 |

# LOW TEMPERATURE -50°C/-58°F
# SAE 100 R1AT / 1SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | One wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -50°C to +100°C(-58°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R1AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.1 | 13.4 | 225 | 450 | 900 | 100 |
| 05 | 5/16" | 8 | 7.9 | 12.7 | 15.0 | 215 | 430 | 850 | 115 |
| 06 | 3/8" | 10 | 9.5 | 15.1 | 17.4 | 180 | 360 | 720 | 130 |
| 08 | 1/2" | 12 | 12.7 | 18.3 | 20.6 | 160 | 320 | 640 | 180 |
| 10 | 5/8" | 16 | 15.9 | 21.4 | 23.7 | 130 | 260 | 520 | 200 |
| 12 | 3/4" | 19 | 19.0 | 25.4 | 27.7 | 105 | 210 | 420 | 240 |
| 16 | 1" | 25 | 25.4 | 33.3 | 35.6 | 88 | 175 | 350 | 300 |
| 20 | 1.1/4" | 31 | 31.7 | 40.5 | 43.5 | 63 | 150 | 250 | 420 |
| 24 | 1.1/2" | 38 | 38.1 | 46.8 | 50.6 | 50 | 100 | 200 | 500 |
| 32 | 2" | 51 | 50.8 | 60.2 | 64.0 | 40 | 80 | 160 | 630 |



# LOW TEMPERATURE -50°C/-58°F
# SAE 100 R2AT / 2SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | -50°C to +100°C(-58°F to +212°F). Hot air maximum 70°C.<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R2AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.7 | 15.0 | 400 | 800 | 1600 | 100 |
| 05 | 5/16" | 8 | 7.9 | 14.3 | 16.6 | 350 | 700 | 1400 | 115 |
| 06 | 3/8" | 10 | 9.5 | 16.7 | 19.0 | 330 | 660 | 1320 | 130 |
| 08 | 1/2" | 12 | 12.7 | 19.8 | 22.2 | 275 | 550 | 1100 | 180 |
| 10 | 5/8" | 16 | 15.9 | 23.0 | 25.4 | 250 | 500 | 1000 | 200 |
| 12 | 3/4" | 19 | 19.0 | 27.0 | 29.3 | 215 | 430 | 850 | 240 |
| 16 | 1" | 25 | 25.4 | 34.9 | 38.1 | 165 | 325 | 650 | 300 |
| 20 | 1.1/4" | 31 | 31.7 | 44.5 | 48.3 | 125 | 250 | 500 | 420 |
| 24 | 1.1/2" | 38 | 38.1 | 50.8 | 54.6 | 90 | 180 | 360 | 500 |
| 32 | 2" | 51 | 50.8 | 63.5 | 67.3 | 80 | 160 | 320 | 630 |

# HIGH TEMPERATURE +150°C / +302°F
# SAE 100 R1AT / 1SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | One wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | 40°C to +135°C(-40°F to +275°F) constant, up to +150°C(+302°F) peak temperature.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R1AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.1 | 13.4 | 225 | 450 | 900 | 100 |
| 05 | 5/16" | 8 | 7.9 | 12.7 | 15.0 | 215 | 430 | 850 | 115 |
| 06 | 3/8" | 10 | 9.5 | 15.1 | 17.4 | 180 | 360 | 720 | 130 |
| 08 | 1/2" | 12 | 12.7 | 18.3 | 20.6 | 160 | 320 | 640 | 180 |
| 10 | 5/8" | 16 | 15.9 | 21.4 | 23.7 | 130 | 260 | 520 | 200 |
| 12 | 3/4" | 19 | 19.0 | 25.4 | 27.7 | 105 | 210 | 420 | 240 |
| 16 | 1" | 25 | 25.4 | 33.3 | 35.6 | 88 | 175 | 350 | 300 |
| 20 | 1.1/4" | 31 | 31.7 | 40.5 | 43.5 | 63 | 150 | 250 | 420 |
| 24 | 1.1/2" | 38 | 38.1 | 46.8 | 50.6 | 50 | 100 | 200 | 500 |
| 32 | 2" | 51 | 50.8 | 60.2 | 64.0 | 40 | 80 | 160 | 630 |



# HIGH TEMPERATURE +150°C / +302°F
# SAE 100 R2AT / 2SN DIN EN 853

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | 40°C to +135°C(-40°F to +275°F) constant, up to +150°C(+302°F) peak temperature.<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR R2AT HOSE

| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|---|---|
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.7 | 15.0 | 400 | 800 | 1600 | 100 |
| 05 | 5/16" | 8 | 7.9 | 14.3 | 16.6 | 350 | 700 | 1400 | 115 |
| 06 | 3/8" | 10 | 9.5 | 16.7 | 19.0 | 330 | 660 | 1320 | 130 |
| 08 | 1/2" | 12 | 12.7 | 19.8 | 22.2 | 275 | 550 | 1100 | 180 |
| 10 | 5/8" | 16 | 15.9 | 23.0 | 25.4 | 250 | 500 | 1000 | 200 |
| 12 | 3/4" | 19 | 19.0 | 27.0 | 29.3 | 215 | 430 | 850 | 240 |
| 16 | 1" | 25 | 25.4 | 34.9 | 38.1 | 165 | 325 | 650 | 300 |
| 20 | 1.1/4" | 31 | 31.7 | 44.5 | 48.3 | 125 | 250 | 500 | 420 |
| 24 | 1.1/2" | 38 | 38.1 | 50.8 | 54.6 | 90 | 180 | 360 | 500 |
| 32 | 2" | 51 | 50.8 | 63.5 | 67.3 | 80 | 160 | 320 | 630 |

# PRESSURE WASHER HOSE 1 WIRE

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | One wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | 40°C to +150°C(+302°F).<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **COLOR** | Black / Gray / Blue / Yellow |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR PRESSURE WASHER HOSE

| 1SN SPECIFICATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.1 | 13.4 | 250 | 540 | 900 | 100 |
| 05 | 5/16" | 8 | 7.9 | 12.7 | 15.0 | 220 | 510 | 850 | 115 |
| 06 | 3/8" | 10 | 9.5 | 15.1 | 17.4 | 220 | 430 | 720 | 130 |
| 08 | 1/2" | 12 | 12.7 | 18.3 | 20.6 | 220 | 385 | 640 | 180 |

| COMPACT SPECIFICATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 10.0 | 12.5 | 210 | 420 | 840 | 50 |
| 05 | 5/16" | 8 | 7.9 | 11.8 | 14.3 | 210 | 420 | 840 | 55 |
| 06 | 3/8" | 10 | 9.5 | 13.6 | 16.5 | 210 | 420 | 840 | 65 |
| 08 | 1/2" | 12 | 12.7 | 17.0 | 19.7 | 210 | 420 | 840 | 90 |



# PRESSURE WASHER HOSE 2 WIRE

STEEL WIRE BRAID HYDRAULIC HOSE




| | |
|---|---|
| **TUBE** | Synthetic rubber |
| **COVER** | Oil, weather and abrasion resistant synthetic rubber |
| **REINFORCEMENT** | Two wire braid of high tensile steel wire with protective coating |
| **TEMPERATURE** | 40°C to +150°C(+302°F).<br>Prolonged operation at extreme temperatures will reduce will hose life. |
| **FITTING** | One piece hose fitting : 200 Series Non-skive type |
| | Two piece hose fitting : TS33W ferrule series + Multifit insert fitting |
| **COLOR** | Black / Gray / Blue / Yellow |
| **OPTION** | Smooth cover / Wrapped cover |
| **FLAME RESISTANCE** | U.S MSHA Approved |

## HOSE SPECIFICATIONS FOR PRESSURE WASHER HOSE

| 2SN SPECIFICATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 12.7 | 15.0 | 400 | 960 | 1600 | 100 |
| 05 | 5/16" | 8 | 7.9 | 14.3 | 16.6 | 400 | 840 | 1400 | 115 |
| 06 | 3/8" | 10 | 9.5 | 16.7 | 19.0 | 400 | 790 | 1320 | 130 |
| 08 | 1/2" | 12 | 12.7 | 19.8 | 22.2 | 400 | 660 | 1100 | 180 |

| COMPACT SPECIFICATION | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SIZE | INCH | DN | ID | Braid | OD | Operating Pressure | Test Pressure | Burst Pressure | Min Bend Radius |
| | | | mm | mm | mm | BAR | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 11.2 | 14.4 | 400 | 960 | 1600 | 50 |
| 05 | 5/16" | 8 | 7.9 | 12.5 | 15.7 | 400 | 840 | 1400 | 55 |
| 06 | 3/8" | 10 | 9.5 | 14.9 | 18.8 | 400 | 790 | 1320 | 65 |
| 08 | 1/2" | 12 | 12.7 | 18.0 | 21.9 | 400 | 660 | 1100 | 90 |

# INDUSTRIAL
# **HOSE**



# COMPRESSED AIR HOSE

Medium duty air hose




| | |
|---|---|
| **TUBE** | Black SBR |
| **COVER** | Black SBR |
| **REINFORCEMENT** | High tensile synthetic yarn |
| **TEMPERATURE** | -30℃ to + 80℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **APPLICATION** | Delivery of air and water |

## HOSE SPECIFICATIONS FOR AIR HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 13.0 | 20 | 60 | 51 |
| 05 | 5/16" | 8 | 7.9 | 14.5 | 20 | 60 | 67 |
| 06 | 3/8" | 10 | 9.5 | 17.0 | 20 | 60 | 83 |
| 08 | 1/2" | 12 | 12.7 | 22.0 | 20 | 60 | 107 |
| 10 | 5/8" | 16 | 15.9 | 26.0 | 20 | 60 | 131 |
| 12 | 3/4" | 19 | 19.0 | 29.0 | 20 | 60 | 155 |
| 16 | 1" | 25 | 25.4 | 35.0 | 20 | 60 | 203 |



# FUEL HOSE

Fuel rubber hose




| | |
|---|---|
| **TUBE** | Black SBR |
| **COVER** | Black SBR |
| **REINFORCEMENT** | High tensile synthetic yarn |
| **TEMPERATURE** | -20℃ to + 110℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **APPLICATION** | Transfer or delivery of petroleum oil based - suitable for fuel, diesel, gasoline etc. |

## HOSE SPECIFICATIONS FOR FUEL HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 04 | 1/4" | 6 | 6.4 | 13.0 | 10 | 30 | 45 |
| 05 | 5/16" | 8 | 7.9 | 15.0 | 10 | 30 | 65 |
| 06 | 3/8" | 10 | 9.5 | 17.0 | 10 | 30 | 75 |
| 08 | 1/2" | 12 | 12.7 | 21.0 | 10 | 30 | 90 |
| 10 | 5/8" | 16 | 15.9 | 26.0 | 10 | 30 | 115 |
| 12 | 3/4" | 19 | 19.0 | 28.0 | 10 | 30 | 135 |
| 16 | 1" | 25 | 25.4 | 35.0 | 10 | 30 | 165 |

# WELDING HOSE

Twin welding hose



| | |
|---|---|
| **TUBE** | Black SBR |
| **COVER** | Black SBR |
| **REINFORCEMENT** | High tensile synthetic yarn |
| **TEMPERATURE** | -25℃ to + 75℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **APPLICATION** | Oxygen, acetylene, propane, argon etc. |
| **COLOR** | RED & GREEN |

## HOSE SPECIFICATIONS FOR WELDING HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 03 | 3/16" | 5 | 4.7 | 12.0 | 20 | 60 | 57 |
| 05 | 5/16" | 8 | 7.8 | 15.0 | 20 | 60 | 95 |



# STEAM HOSE

Steam hose



| | |
|---|---|
| **TUBE** | EPM rubber, resistant to steam up 208℃ |
| **COVER** | Abrasion, heat , steam oil, ozone and weather resistant |
| **REINFORCEMENT** | High tensile two steel wire braids |
| **TEMPERATURE** | -40℃ to + 208℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **APPLICATION** | Super heated steam services |
| **COLOR** | RED |

## HOSE SPECIFICATIONS FOR STEAM HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 08 | 1/2" | 12 | 12.7 | 25.0 | 17 | 170 | 180 |
| 10 | 5/8" | 16 | 15.9 | 28.5 | 17 | 170 | 200 |
| 12 | 3/4" | 19 | 19.0 | 32.0 | 17 | 170 | 240 |
| 16 | 1" | 25 | 25.4 | 38.5 | 17 | 170 | 300 |
| 20 | 1 1/4" | 31 | 31.7 | 46.0 | 17 | 170 | 400 |
| 24 | 1 1/2" | 38 | 38.1 | 52.0 | 17 | 170 | 500 |
| 32 | 2" | 51 | 50.8 | 67.0 | 17 | 170 | 650 |

# SANDBLAST HOSE

Sandblast hose




| | |
|---|---|
| **TUBE** | Abrasion resistant conductive natural rubber |
| **COVER** | Abrasion ozone and weather resistant |
| **REINFORCEMENT** | High tensile synthetic textile and antistatic cooper wire |
| **TEMPERATURE** | -40℃ to + 70℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **APPLICATION** | Cleaning and blasting metal, stone and concrete surface |
| **COLOR** | BLACK |

## HOSE SPECIFICATIONS FOR SANDBLAST

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 08 | 1/2" | 12 | 12.7 | 27 | 12 | 36 | 127 |
| 10 | 5/8" | 16 | 15.9 | 30 | 12 | 36 | 160 |
| 12 | 3/4" | 19 | 19.0 | 33 | 12 | 36 | 190 |
| 16 | 1" | 25 | 25.4 | 39 | 12 | 36 | 254 |
| 20 | 1 1/4" | 31 | 31.7 | 48 | 12 | 36 | 320 |
| 24 | 1 1/2" | 38 | 38.1 | 56 | 12 | 36 | 380 |
| 32 | 2" | 51 | 50.8 | 69 | 12 | 36 | 510 |



# OIL SUCTION AND DELIVERY

Oil S&D hose




| | |
|---|---|
| **TUBE** | Oil and petrol resistant, conductive synthetic nitrile black rubber |
| **COVER** | Oil, weater, ozone, abrasion and sea water resistant |
| **REINFORCEMENT** | High tensile synthetic textile, steel wire helix and antistatic cooper wire |
| **TEMPERATURE** | -35℃ to + 70℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| **APPLICATION** | Suction and discharge of petroleum products |
| **COLOR** | BLACK |

## HOSE SPECIFICATIONS FOR OIL S&D HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 16 | 1" | 25 | 25.4 | 36 | 10 | 30 | 152 |
| 20 | 1 1/4" | 31 | 32.0 | 43 | 10 | 30 | 192 |
| 24 | 1 1/2" | 38 | 38.0 | 49 | 10 | 30 | 228 |
| 32 | 2" | 51 | 50.8 | 63 | 10 | 30 | 306 |
| 40 | 2 1/2" | 64 | 63.5 | 76 | 10 | 30 | 381 |
| 48 | 3" | 76 | 76.2 | 89 | 10 | 30 | 457 |
| 56 | 3 1/2" | 90 | 90.0 | 105 | 10 | 30 | 540 |
| 64 | 4" | 100 | 101.6 | 117 | 10 | 30 | 610 |
| 80 | 5" | 127 | 127.0 | 145 | 10 | 30 | 762 |
| 96 | 6" | 152 | 152.4 | 170 | 10 | 30 | 915 |

# CONCRETE PUMPING HOSE 85BAR

Concrete pump hose 85BAR




| | |
|---|---|
| TUBE | Abrasion resistant, special conductive natural and CBR rubber |
| COVER | Abrasion ozone and weather resistant |
| REINFORCEMENT | High tensile steel cords |
| TEMPERATURE | -35℃ to + 70℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| APPLICATION | Placement of concrete to the casting location |
| COLOR | BLACK |

## HOSE SPECIFICATIONS FOR CONCRETE HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 32 | 2" | 50 | 50.8 | 70 | 85 | 200 | 508 |
| 40 | 2 1/2" | 65 | 63.5 | 87 | 85 | 200 | 635 |
| 48 | 3" | 75 | 76.2 | 99 | 85 | 200 | 762 |
| 64 | 4" | 101.6 | 101.6 | 125.6 | 85 | 200 | 1016 |
| 80 | 5" | 125 | 127 | 153 | 85 | 200 | 1270 |



# CONCRETE PUMPING HOSE 100BAR

Concrete pump hose 100BAR

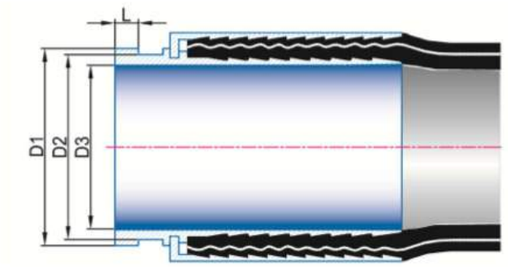



| | |
|---|---|
| TUBE | Abrasion resistant, special conductive natural and CBR rubber |
| COVER | Abrasion ozone and weather resistant |
| REINFORCEMENT | High tensile steel cords |
| TEMPERATURE | -35℃ to + 70℃<br>Prolonged operation at extreme temperatures will reduce hose life. |
| APPLICATION | Placement of concrete to the casting location |
| COLOR | BLACK |

## HOSE SPECIFICATIONS FOR CONCRETE HOSE

| SIZE | INCH | DN | ID | OD | Operating Pressure | Burst Pressure | Min Bend Radius |
|---|---|---|---|---|---|---|---|
| | | | mm | mm | BAR | BAR | mm |
| 32 | 2" | 50 | 50.8 | 70 | 100 | 200 | 508 |
| 40 | 2 1/2" | 65 | 63.5 | 87 | 100 | 200 | 635 |
| 48 | 3" | 75 | 76.2 | 99 | 100 | 200 | 762 |
| 64 | 4" | 101.6 | 101.6 | 125.6 | 100 | 200 | 1016 |
| 80 | 5" | 125 | 127 | 153 | 100 | 200 | 1270 |

# CONCRETE PUMPING HOSE CRIMP FITTING




| | |
|---|---|
| **MATERIAL** | Carbon steel |
| **HEAT TREATMENT** | Stem : Carburized to specified hardness and depth as per drawings<br>Ferrule : Annealing treatment |
| **PLATING** | Stem : None<br>Ferrule : Silver color Zinc plating / Chrome free |
| **PRESSURE** | The safe working pressure is 100bar |

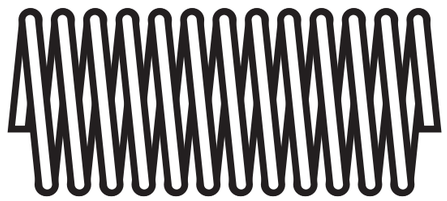
## FITTING SPECIFICATIONS FOR CONCRETE HOSE

| CONNECTION | HOSE | D1 | D2 | D3 | L |
|---|---|---|---|---|---|
| INCH | INCH | mm | mm | mm | mm |
| 3.0 | 2.5 | 88.9 | 84.9 | 65.0 | 16.0 |
| 3.25 | 3.0 | 97.2 | 89.3 | 79.0 | 16.0 |
| 4.5 | 4.0 | 127.0 | 115.0 | 101.5 | 17.0 |
| 5.5 | 5.0 | 148.0 | 139.0 | 124.5 | 17.0 |



# SPRING GUARD

Steel spring guard



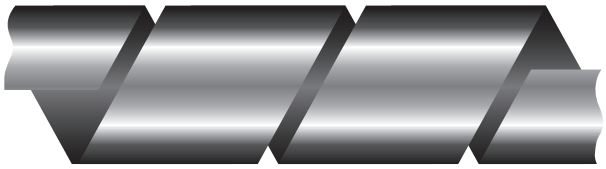
| | |
|---|---|
| **MATERIAL** | Galvanized apring wire |
| **APPLICATION** | The wire armoring is used to help protect hose assemblies from external mechanical damage by stuffing and cutting from sharp rock or other abrasive surface. |
| **COLOR** | Yellow or white |

## SPECIFICATIONS FOR STEEL SPRING GUARD

| SIZE | ID | WIRE | LENGTH |
|---|---|---|---|
| | mm | mm | MT |
| SG-04 | 16.3 | 1.6 | 1.3 |
| SG-06 | 21.5 | 1.6 | 1.3 |
| SG-08 | 24.2 | 1.6 | 1.3 |
| SG-12 | 33.0 | 2.3 | 1.3 |
| SG-16 | 40.0 | 2.5 | 1.3 |
| SG-20 | 47.8 | 2.8 | 1.3 |
| SG-24 | 55.0 | 2.8 | 1.3 |
| SG-32 | 68.0 | 2.8 | 1.3 |

# ARMOR GUARD

Armor guard



| | |
|---|---|
| **MATERIAL** | Polyethylene |
| **APPLICATION** | The wire armoring is used to help protect hose assemblies from external mechanical damage by stuffing and cutting from sharp rock or other abrasive surface. |
| **COLOR** | BLACK |

## SPECIFICATIONS FOR ARMOR GUARD

| SIZE | ID | WIRE | LENGTH |
|---|---|---|---|
| | mm | mm | MT |
| PG-04 | 14.0 | 18.0 | 2.0 |
| PG-06 | 16.0 | 22.0 | 2.0 |
| PG-08 | 21.0 | 27.0 | 2.0 |
| PG-12 | 27.0 | 33.0 | 2.0 |
| PG-16 | 31.0 | 37.0 | 2.0 |
| PG-20 | 43.0 | 52.0 | 2.0 |