



URM

YOUR FLEXIBLE PARTNER FOR RUBBER & CUSTOM MADE PRODUCTS
--DELIVERED GLOBALLY--

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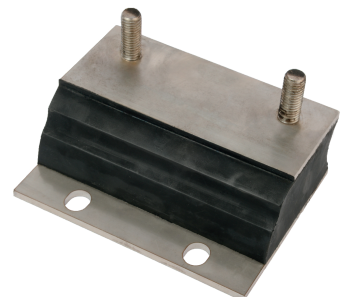
WHO ARE WE

We offer an excellent technical expertise in the rubber industry and we respond quickly to all questions from our customers. We provide professional assistance from the inquiry until delivery of your finished product. URM is your all-round rubber supplier for all rubber products that you need.

The company was founded in 1935 and has since grown into a renowned rubber company within Europe. Today, URM is your partner in the development and production of high-quality rubber molded parts. Our staff can assist you with the realization of your product. URM considers its customers as partners. We always aim for a long-term relationship and continue to look for improvement and optimization.

We have implemented internal quality and management systems that meet the toughest standards. Strict supervision and control of the raw materials guarantees a constant quality of our rubber. We also test every rubber batch to verify its physical properties. Each press is PLC controlled to ensure consistency and to optimize productivity. In this way we can deliver the best product at the best price. Our entire plant is clean and orderly, and our equipment is well maintained.

To deliver a high-quality product, a standard dimensional and visual check is performed. With the help of our inspection machines, we can also easily detect errors and inaccuracies. This is one of the reasons why URM has built up a strong international reputation. We also develop our own molds, making us very fast and flexible.



RUBBER HOSES AND ELBOWS

URM specializes in the production of rubber hoses and elbows in contact with coolants, oil or air for applications such as engine inlet and outlet, EGR, turbocharger and other hoses. Made in standard qualities such as silicone or EPDM, but if desired also in high-quality materials such as HNBR or VITON. In order to offer our customers the most effective solution for their application we are always searching for new developments.



SILICONE BESPOKE HOSES



- Silicone hose with heat shield: The shield reflects the excessive heat and protects the outer silicone layer.
- New silicone ink marking for meta-aramid reinforced hoses: Permanent black markings made in hoses as per client requirement
- Extremely flexible hoses with stainless steel wire embedded, for high positive and negative pressures.

SILICONE COOLANT HOSES



We offer silicone coolant hoses in a range of shapes, colours and sizes. The hoses generally have 3-4 plies of polyester fabric. The layers can be increased or decreased depending on the working pressure requirements.

- Temperature range: -50 to 180 degrees Celsius.
- Good resistance to weather and ozone, and resists corrosion from coolant and heat transfer.
- Available with the option of fluorosilicone or FKM inner lining, for increased oil/ acid/fuel resistance.

HOSES FOR ORGANIC ACID BASED COOLANTS



- We offer a special range of hoses, for resistance to organic acid based coolants, which contain sebacate or 2-ethylhexanoic acid.
- These extended life anti-freeze coolants which are extremely corrosive in nature, require hoses of specially designed materials.
- Using normal blue coolant hoses of the standard material for these coolants, will result in pre-mature failures

TURBO CHARGER HOSES



- The hoses are ideal for connections between engine mounted charge air cooler system parts.
- Available in a range of straight or convoluted shapes. The hoses are flexible enough to endure the vibrations caused due to these misalignments/ compressions/ 3-axial movements.
- Temperature range: -50 to + 250 degrees Celsius if reinforced with metaramid and -56 + 180 degrees Celsius, if reinforced with polyester;
- Available with the option of fluorosilicone or FKM inner lining for added oil, acid fuel resistance-Hoses with metal fitting and crimped ends can also be developed as per your requirement.

EPDM RADIATOR AND AIR-CLEANER HOSES



Suction/Vacuum hoses, radiator hoses, air and water hoses for automotive and industrial applications. Usually made of EPDM. Available in a wide range of standards shapes and sizes. But we also produce bespoke hose with 1 or more textile inserts. We also have EPDM corrugated hoses; for air-cleaner applications in Automotive Filters. These hoses have a higher than usual bend radius for trickier connections, high vibrations and vacuum pressure resistance.

- The continuous service temperature of EPDM hoses is -30 degrees Celsius to +120 degrees Celsius maximum, with peak temperatures of 150 degrees Celsius.
- We also supply EPDM-Peroxide cured hoses, where exceptional compression set and heat resistance is needed.

OTHER ORGANIC RUBBER HOSES



- We also supply hoses intended to come into contact with air/water/fuel/oil/acids. In a range of materials such as Chloroprene, NBR, NBR-PVC, HNBR, VAMAC, VITON or CSM.
- The hoses can be manufactured with a combination of different rubber qualities. For example an inner layer in nitrile (because of the oil resistance) and an outer layer in chloroprene (because of the good UV resistance). Based on customer requirements and request.

FOR ALL OUR EPDM AND ORGANIC RUBBER HOSES



- The hoses are either reinforced, or not. The non reinforced hoses which have relatively lower pressure resistance, are usually used by industrial OEMs, like washing machine manufacturers.
- For the reinforcement, we use polyester, kevlar or aramid depending on the working temperatures/pressures.
- The hoses can come with either 1- 7 layers of fabric, depending on the pressure resistance when required steel or stainless steel wire plies can also be incorporated for exceptional pressure or vacuum pressure requirements.

MARINE WET EXHAUST HOSE



- URM offer a range of high end silicone straight/elbow/bellow hoses for use in marine applications.
- Exceeds SAEJ2006-R3 requirements.
- For usage temperature up to 180 degrees Celsius, the hose is 4-6 polyester layer reinforced silicone.
- For higher temperature up to 260 degrees Celsius, the hose is 4-6 polyester meta-aramid layer reinforced silicone.

FOOD GRADE HOSES



- Hoses for food applications are usually made from silicone rubber. They are not only very high temperature resistance, but also extremely cold resistant due to the very low glass transition temperature. Available in different hardness and colors or even transparent so that one can see through it.
- Food grade silicone hoses show excellent heat resistance, cold flexibility, dielectric properties and especially good resistance to weather, ozone and UV rays.
- Food grade silicone hoses formulations are designed specifically for use with food products. FDA approved silicone has reduced food taint and very low bacteria build up resulting in ultimately lower maintenance costs.
- The temperature range is between -50°C + 180°C.

FLAME-RETARDANT SILICONE HOSES



- Tailor made hoses for public transport where fire safety and smoke emissions are the most important. According to European or international Legislation.
- Hoses used for air-conditioning, heating, ventilation, radiator coolant, brake cooling, Roof drainage and Engine applications.
- Extremely low smoke emission/ smoke toxicity.
- Temperature range: -56 to +250 degrees Celsius.

RUBBER MOLDED PRODUCTS

URM produces high quality molded rubber products and molded rubber parts. URM maintains a modern manufacturing facility along with knowledgeable, technically-oriented professionals enabling us to consistently meet all of your blueprint specifications and tolerance requirements. We utilize several different methods of rubber molding depending upon our customer's requirement. URM offers rubber molding services including: rubber compression molding, rubber transfer molding, and rubber injection molding enabling us to meet all of your product specifications.



GROMMETS



- URM can manufacture and supply high quality rubber grommets. URM has the ability to produce custom rubber grommets in almost every size, shape and material specification.
- Rubber grommets are essentially rubber molded circular parts which are placed around drilled or punched holes to an opening in a surface.
- Rubber grommets mechanically protect against sharp edges providing a cushion of protection for the items which passes through the surface material.
- They protect surface openings from tearing or breaking wire, cable, tubing, piping, hoses, air lines, rope, etc...

RUBBER BELLOWS



- URM can manufacture and supply high quality rubber bellows and boots. They are flexible seals used in a range of applications for sealing dust and other environmental elements in applications with a calculated range of motion.
- URM manufacture rubber bellows and boots using a technic molding, transfer molding and rubber injection molding utilizing the most recent rubber compounds available.
- Our custom rubber bellows are designed to protect against: dust, water, oil.

GASKETS & SEALS



- URM can manufacture and supply high quality gaskets and seals.
- A gasket can be produced in any desired type of rubber gasket material: in a food grade or in a grade that is resistant to seawater or chemicals.
- URM produce gaskets in a wide range of materials, including: Nitrile (Buna-N, NBR), Silicone (VMQ), Neoprene(CR), Ethylene-Propylene (EPDM) and Viton (FKM). But we also have many grades of cellular rubber, sponge rubber and foams in our product range.

RUBBER MOULDING MATERIALS (COMPOUNDS)



URM has a large database of standard rubber compounds based on a wide selection of polymers. Hardness is possible from 20 to 90 shore A and available in a wide range of colors from basic black to soft pastel. Specially formulated versions for food or flame retardant applications, chemical resistant and others. The most common rubber polymers that we use include:

- Ethylene-Propylene (EPDM, EP)
- Chloroprene, Neoprene (CR)
- Nitrile, Buna-N (NBR)
- Silicone (VMQ)
- Viton, Fluorocarbon (FKM)
- Natural Rubber (NR)
- Styrene-Butadiene (SBR)
- Polyurethane (AU, EU)
- Fluorosilicone (FVMQ, FMQ)
- Butyl (IIR)
- Hypalon (CSM)
- Hydrogenated Nitrile (HNBR)
- Polyacrylate Acrylic (ACM)
- Ethylene Acrylic Elastomer, Vamac (AEM)
- Epichlorohydrin (ECO)
- FDA Approved (Food Grade)
- Color Compounds

RUBBER MOLDED PRODUCT LIST

URM supplies all kinds of rubber products whether standard or custom made. Our specialty is the right bespoke rubber that perfectly suits your needs.



EPDM Gaskets

Rubber Seal



NBR- Nitrile Rubber Gaskets



Fluorosilicone Gaskets



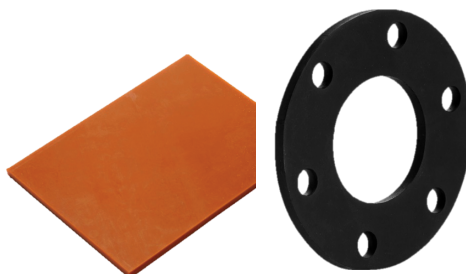
Neoprene Gaskets



OIL SEALS



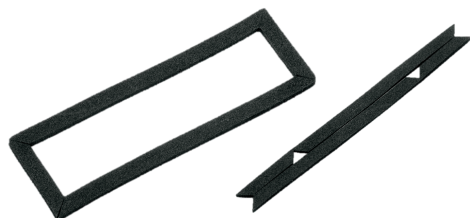
Natural Rubber Gaskets



Solid Rubber and PUR Gaskets



Rubber Bellows & Boots



Foldable Gaskets



Gland packing



Cover gaskets



Spiral wound Gaskets

VALVES

URM specializes in the production of valves such as: non-return valves, piston valves, oil stop valves, pump and valve packing. Additionally we work closely with our customers to create custom rubber sealing valves to meet their needs, industry standards and to withstand harsh, chemical conditions. These valves are manufactured from materials such as aluminium, bronze, steel,brass or stainless steel. The vulcanized rubber is a high-grade type of rubber. All rubber valves allow fluid, either a liquid or a gas, to flow through it in only one direction. The elastomeric compound offers itself to be low-maintenance, rust-free, and highly responsive to very subtle pressure changes.



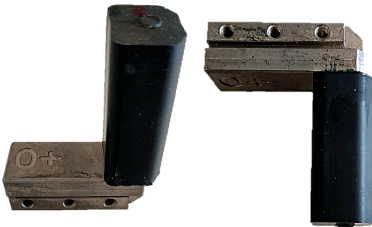
CHECK VALVES



LIFT VALVES



DUCK VALVES



ROBOT CLAW



PUMP & VALVE PACKING



OIL STOP VALVES



PISTON VALVES



RUBBER METAL PRODUCTS

URM focuses on the production of rubber products such as: Silent blocs, Bumpers, Rubber Buffer Stops, Inflatable sleeve, Mud Flaps, Cylinders, Barrels SS, Shock Absorbers, Custom made parts, Rubber power plate. URM Rubber-metal connections are most commonly used to filter vibrations and stop resonance. Metal such as brass, aluminum, steel or stainless steel can be offered with bonding to all elastomer types. URM Offers only the best quality of elastomers to ensure high endurance and parts lifetime.



SILENT BLOCS



- Silent block Bushing are very important components of an automobile, and are also known as Silent Block bushings.
- The silent block bushing is pressurized to give maximum strength & endurance.
- It comprises two concentric steel sleeves enabled with rubber that is securely bonded between them.
- The rubber is vulkanized between the 2 flat washers at constant pressure and temperature.
- The silent block bushings are specially designed for torsional movement, axial & radial load.

BUMPERS



- Rubber bumpers are used to protect constructions against impact. URM supplies both standard and custom-made buffers or bumpers. A rubber bumper can endure a high impact and is therefore widely applicable.
 - A buffer is used, amongst others:
 - as a quay protector;
 - at loading and unloading platforms;
 - on (horse) trailers and trucks;
 - in parking garages;
 - as a bumper on forklifts
 - to protect walls.

RUBBER BUFFER



- A buffer stop is constructed from a cylindrical rubber element vulcanised on a round or square steel plate.
- A buffer stop absorbs energy and reduces the transmitted impacts.
- This buffer is used where damping of moving parts of machines is required.
- A rubber buffer can be equipped with a metal screw on one or both sides.
- These buffers are used to protect moving machine parts against damage caused by impact.

INFLATABLE SLEEVE



- Inflatable seals made of rubber and equipped with a metal valve. For each application, we select the best quality rubber to ensure maximum durability.
- Designed employing modern technologies, they ensure to provide flawless and leakage proof performance.
- In addition, they are also puncture resistant in design with their ability to withstand high temperature and pressure.

Features of Inflatable Tubes Sleeves:

- Fine finishing and surface to ensure no puncture or deflation
- Easy to install and remove without much efforts
- Free from abrasion, wear and tear for a long time

MUD FLAPS



- URM supplies rubber mud flaps in various sizes. Both standard dimensions and customization possible at very fast delivery times.
- These mud flaps are mainly used in the agricultural sector and truck construction.

PRINTING CYLINDERS



- Built up from a central metal core with rubber vulcanized on top and finished with extremely tight tolerances to ensure optimal functioning.
- These rolls can be made based on a wide range of elastomers, highly dependent on the required physical properties. As well as the type of chemicals exposed to during the specific application. These factors are crucial when it comes to the right choice of rubber for covering these roll.
- With quality products and sufficient understanding of industrial rollers, we can assure you that you are getting the best material for your application.

BARRELS SS+ RUBBERS



- Barrels are one of the most widely used equipments which are used for a wide range of purposes in several industrial utilities.
- These barrels is often constructed of stainless steel. It is commonly used to store, transport, and serve beer or other drinks.
- Our company has specially manufactured these stainless steel barrel parts using one of the most excellent quality stainless steel which makes it. These barrels are made of stainless steel. And are used to store beer or others beverages. To prevent damage to the barrels during transport, a rubber protection can be vulcanized on top.

SHOCK ABSORBERS



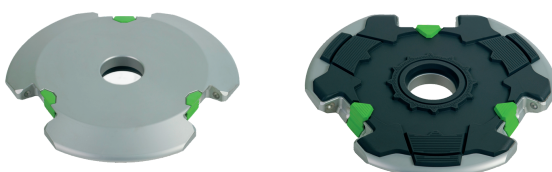
- Our range of shock absorbers meets the highest standards of quality which provides them superior performance for a longer period of time.
- Available in flexible designs and superior quality our rubber shock absorbers are offered as per the requirements of our clients at industry leading prices.
- URM provide an uncomplicated solution to controlling vibration and shock, the range of plate mountings provide the answer.
- Our isolators are designed to protect equipment and machinery from damaging vibration and shock and have an excellent capacity for energy control. Used in applications such as printing presses, road rollers, vibratory feeders, shipping containers, crushers, shaker units and industrial machinery.

CUSTOM MADE



- URM offers custom molding services for both direct manufactured parts and distributed parts.
- URM provides the most value with large-volume productions and/or large-dimensioned parts. Other size requirements and volumes are offered as distributed items.
- We work with a variety of materials, including:
- Butyl, EPDM, Neoprene, SBR, Nitrile, Natural rubber, Silicone, Viton. etc.,,

RUBBER POWER PLATE



- Power plate are one of the most widely used equipments which are used for a wide range of purposes in several industrial and automobile utilities.
- Power Plate(s) is mounted on the NT Hybrid bag(s), use the connector key to unfasten the Power Plate plug. The Power Plate can then be taken off.
- If a Power Plate is mounted on the bottom of the NT Hybrid bag use the connector key to unfasten the Power Plate plug. The Power Plate can then be taken off. These power plate used in aircraft industries.

PLUGTITE/NOZZLE ADAPTOR



- Our latest tool for use during the maintenance of hydraulic and other industrial equipment.
- Small (2-14mm)
- Medium (5-24mm)
- Large (15-45mm)
- Adaptor small (3-30mm)
- Adaptor Large (14-46mm)
- Max Plugtite (32-75mm)
- Supermax plugtite (55-125mm)
- Resistance to most oils and chemicals
- Temperature range from -25°C up to 90°C
- Does not shrink, leak or discolor
- Resistant to sunlight for greater shelf life
- Does not split/crack or deteriorate
- Easy to use. Insert, squeeze, release and apply air-gun
- The compressed rubber ensures a tight fit

CONES



- This unique product was developed by URM. We have 2 standard types namely medium and large.
- Medium has a height of 30 cl, the large version is 50 cm. For better visibility, we can provide the medium cone with 1 colored stripe, the large with 2 colored stripes.
- These stripes cannot be removed afterwards.
- Our basic colors of the cone are white and black color. These cones are packed as standard in boxes of 10 pieces. This is therefore the minimum order quantity.

EXTRUSION



- URM is a leading manufacturer of custom extruded profiles for industrial applications.
- Our extruded profile capabilities include:
 - Bumper profiles
 - Rubber frames
 - Silicone profiles
 - Cords and tubes
 - Corner and window profiles
 - Clamping profiles
 - Full rubber profiles
 - Foam rubber profiles
 - Custom designed profiles.

TECHNICAL CHEMICAL RESISTANCE

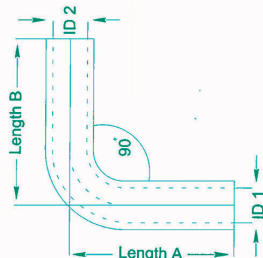
		FAIR		POOR		NOT RECOMMENDED		GOOD	
	CR	EPDM	NBR	IIR	NR/SBR	SI	FPM	PU	FSI
Acetic Acid, 5%									
Acetone									
Acetylene									
Acrylic Acid									
Air, Below 100° C									
Air, 100 - 150° C									
Alkenes									
Aluminum Salts									
Ammonia, Liquid									
Ammonium Hydroxide									
Ammonium Salts									
Aniline									
Animal Oil & Fats									
Anti-freeze Solutions									
ASTM Oil, No. 1									
ASTM Fuel B									
Beer									
Benzene									
Butane									
Butanol (Butyl Alcohol)									
Carbon Dioxide									
Chloric Acid									
Crude Oil									
Detergents									
Drinking Water									
Ethane									
Ethanol									
Ethers									
Fish Oil									
Gasoline									
Glucose									

Glycols									
Hydrogen Gas, Cold									
Hydrogen Peroxide									
Methane									
Methanol									
MEK									
Milk									
Motor Oils									
Naptha									
Natural Gas									
Nitric Acid (< 50%)									
Nitrogen									
Olive Oil									
Oxygen, Liquid									
Ozone									
Paraffins									
Phosphoric Acid Conc.									
Potassium Hydroxide									
Propane									
Sea (Salt) Water									
Sewage									
Soap Solutions									
Sodium Hydroxide									
Steam Below 150°C									
Sulfuric Acid, Conc									
Toluene									
Transformer Oil									
Transmission Fluid A									
Vegetable Oil									
Vinegar									
Water									
Wines and liquor									
Xylene									

STANDARD SIZES

STANDARD SIZES

**Straight Hoses Available
from 6mm ID to 600mm ID**



90° Elbow with Arm length 4"

	ID1	ID2	Length B MM (INCH)	Length A MM (INCH)	Length E MM (INCH)
	12 (1/2)	12 (1/2)	102 (4)	102 (4)	102 (4)
	15 (5/8)	15 (5/8)	102 (4)	102 (4)	102 (4)
	16 (5/8)	16 (5/8)	102 (4)	102 (4)	102 (4)
	18 (5/7)	18 (5/7)	102 (4)	102 (4)	102 (4)
	19 (3/4)	19 (3/4)	102 (4)	102 (4)	102 (4)
	22 (6/7)	22 (6/7)	102 (4)	102 (4)	102 (4)
	25 (1)	25 (1)	102 (4)	102 (4)	102 (4)
	28 (1 1/8)	28 (1 1/8)	102 (4)	102 (4)	102 (4)
	30 (1 1/6)	30 (1 1/6)	102 (4)	102 (4)	102 (4)
	32 (1 1/4)	32 (1 1/4)	102 (4)	102 (4)	102 (4)
	35 (1 3/8)	35 (1 3/8)	102 (4)	102 (4)	102 (4)
	38 (1 1/2)	38 (1 1/2)	102 (4)	102 (4)	102 (4)
	40 (1 4/7)	40 (1 4/7)	102 (4)	102 (4)	102 (4)
	42 (1 2/3)	42 (1 2/3)	102 (4)	102 (4)	102 (4)
	45 (1 7/8)	45 (1 7/8)	102 (4)	102 (4)	102 (4)
	48 (1 8/9)	48 (1 8/9)	102 (4)	102 (4)	102 (4)
	50 (8)	50 (8)	102 (4)	102 (4)	102 (4)
	54 (2 1/6)	54 (2 1/6)	102 (4)	102 (4)	102 (4)
	57 (2 1/4)	57 (2 1/4)	102 (4)	102 (4)	102 (4)
	60 (2 1/3)	60 (2 1/3)	102 (4)	102 (4)	102 (4)
	63 (2 1/2)	63 (2 1/2)	102 (4)	102 (4)	102 (4)
	70 (2 3/4)	70 (2 3/4)	102 (4)	102 (4)	102 (4)
	76 (3)	76 (3)	102 (4)	102 (4)	102 (4)
	80 (3 1/7)	80 (3 1/7)	102 (4)	102 (4)	102 (4)
	89 (3 1/2)	89 (3 1/2)	102 (4)	102 (4)	102 (4)
	gn^a: Elbow with Arm length 6"				

90° Elbow with Arm length 10"

ID1	ID2	Length A	Length B
12.7 (1/2)	12.7 (1/2)	250 (10)	250 (10)
16 (5/8)	16 (5/8)	250 (10)	250 (10)
19 (3/4)	19 (3/4)	250 (10)	250 (10)
20 (4/5)	20 (4/5)	250 (10)	250 (10)
22 (6/7)	22 (6/7)	250 (10)	250 (10)
25 (1)	25 (1)	250 (10)	250 (10)
28 (1 1/8)	28 (1 1/8)	250 (10)	250 (10)
30 (1 1/5)	30 (1 1/5)	250 (10)	250 (10)
32 (1 1/4)	32 (1 1/4)	250 (10)	250 (10)
35 (1 3/8)	35 (1 3/8)	250 (10)	250 (10)
38 (1 1/2)	38 (1 1/2)	250 (10)	250 (10)
42 (1 1/2)	42 (1 1/2)	250 (10)	250 (10)
45 (1 7/8)	45 (1 7/8)	250 (10)	250 (10)
48 (1 5/4)	48 (1 5/4)	250 (10)	250 (10)
50 (1 1/2)	50 (1 1/2)	250 (10)	250 (10)
54 (2 1/8)	54 (2 1/8)	250 (10)	250 (10)
57 (2 1/4)	57 (2 1/4)	250 (10)	250 (10)
60 (2 1/3)	60 (2 1/3)	250 (10)	250 (10)
63 (2 1/2)	63 (2 1/2)	250 (10)	250 (10)
70 (2 3/4)	70 (2 3/4)	250 (10)	250 (10)
102 (4)	102 (4)	250 (10)	250 (10)

102 (4) 102 (4) 230 (10)
90° Elbow with Arm length 12"

ID1	ID2	Length A	Length B
MM (INCH)	MM (INCH)	MM (INCH)	MM (INCH)
25 (1)	25 (1)	300 (12)	300 (12)
35 (1 3/8)	35 (1 3/8)	300 (12)	300 (12)
48 (1 8/9)	48 (1 8/9)	300 (12)	300 (12)
50 (2)	50 (2)	300 (12)	300 (12)
55 (2 1/6)	55 (2 1/6)	300 (12)	300 (12)
60 (2 1/3)	60 (2 1/3)	300 (12)	300 (12)
65 (2 5/9)	65 (2 5/9)	300 (12)	300 (12)
70 (2 3/4)	70 (2 3/4)	300 (12)	300 (12)
75 (3)	75 (3)	300 (12)	300 (12)

90° Reducer Elbow with Arm length 4"

	ID1	D2	Length A	Length B
	MM (INCH)	MM (INCH)	MM (INCH)	MM (INCH)
1	19 (3/4)	13 (1/2)	102 (4)	102 (4)
2	19 (3/4)	16 (3/8)	102 (4)	102 (4)
3	22 (5/8)	19 (3/4)	102 (4)	102 (4)
4	25 (1)	19 (3/4)	102 (4)	102 (4)
5	25 (1)	22 (5/8)	102 (4)	102 (4)
6	28 (1 1/8)	19 (3/4)	102 (4)	102 (4)
7	28 (1 1/8)	22 (5/8)	102 (4)	102 (4)
8	28 (1 1/8)	25 (1)	102 (4)	102 (4)
9	32 (1 1/4)	25 (1)	102 (4)	102 (4)
10	32 (1 1/4)	28 (1 1/8)	102 (4)	102 (4)
11	35 (1 3/8)	25 (1)	102 (4)	102 (4)
12	35 (1 3/8)	28 (1 1/8)	102 (4)	102 (4)
13	38 (1 1/2)	22 (5/8)	102 (4)	102 (4)
14	38 (1 1/2)	25 (1)	102 (4)	102 (4)
15	38 (1 1/2)	28 (1 1/8)	102 (4)	102 (4)
16	38 (1 1/2)	32 (1 1/4)	102 (4)	102 (4)
17	38 (1 1/2)	35 (1 3/8)	102 (4)	102 (4)
18	41 (1 3/8)	32 (1 1/4)	102 (4)	102 (4)
19	41 (1 3/8)	35 (1 3/8)	102 (4)	102 (4)
20	45 (1 7/8)	32 (1 1/4)	102 (4)	102 (4)
21	45 (1 7/8)	35 (1 3/8)	102 (4)	102 (4)
22	51 (2)	38 (1 1/2)	102 (4)	102 (4)
23	51 (2)	40 (1 4/7)	102 (4)	102 (4)
24	54 (2 1/8)	45 (1 7/8)	102 (4)	102 (4)
25	57 (2 1/4)	54 (2 1/8)	102 (4)	102 (4)
26	60 (2 1/8)	45 (1 7/8)	102 (4)	102 (4)
27	60 (2 1/8)	51 (2)	102 (4)	102 (4)
28	63 (2 1/2)	51 (2)	102 (4)	102 (4)
29	63 (2 1/2)	57 (2 1/4)	102 (4)	102 (4)
30	63 (2 1/2)	63 (2 1/2)	102 (4)	102 (4)
31	70 (3/4)	45 (1 7/8)	102 (4)	102 (4)
32	75 (3)	51 (2)	102 (4)	102 (4)
33	76 (3)	57 (2 1/4)	102 (4)	102 (4)
34	76 (3)	63 (2 1/2)	102 (4)	102 (4)
35	78 (3)	70 (2 3/4)	102 (4)	102 (4)
36	81 (3 3/8)	45 (1 7/8)	102 (4)	102 (4)
37	85 (1 7/8)	38 (1 1/2)	102 (4)	102 (4)
38	90 (2)	55 (2 1/8)	102 (4)	102 (4)
39	90 (2)	55 (2 1/8)	102 (4)	102 (4)
40	93 (1 7/8)	76 (3)	102 (4)	102 (4)

90° Reducer Elbow with Arm length 5"

90° Reducer Elbow with Arm length 6"									
ID1	ID2	ID3	Length A MM (INCH)	Length A MM (INCH)	Length B MM (INCH)	ID1	ID2	ID3	Length A MM (INCH)
57 (2 1/4)	57 (2 1/4)	57 (2 1/4)	51 (2)	127 (5)	127 (5)	57 (2 1/4)	57 (2 1/4)	57 (2 1/4)	127 (5)
58 (2 1/4)	58 (2 1/4)	58 (2 1/4)	51 (2)	127 (5)	127 (5)	58 (2 1/4)	58 (2 1/4)	58 (2 1/4)	127 (5)
59 (2 1/4)	59 (2 1/4)	59 (2 1/4)	51 (2)	127 (5)	127 (5)	59 (2 1/4)	59 (2 1/4)	59 (2 1/4)	127 (5)
60 (2 1/4)	60 (2 1/4)	60 (2 1/4)	51 (2)	127 (5)	127 (5)	60 (2 1/4)	60 (2 1/4)	60 (2 1/4)	127 (5)
61 (2 1/4)	61 (2 1/4)	61 (2 1/4)	51 (2)	127 (5)	127 (5)	61 (2 1/4)	61 (2 1/4)	61 (2 1/4)	127 (5)
62 (2 1/4)	62 (2 1/4)	62 (2 1/4)	51 (2)	127 (5)	127 (5)	62 (2 1/4)	62 (2 1/4)	62 (2 1/4)	127 (5)
63 (2 1/4)	63 (2 1/4)	63 (2 1/4)	51 (2)	127 (5)	127 (5)	63 (2 1/4)	63 (2 1/4)	63 (2 1/4)	127 (5)
64 (2 1/4)	64 (2 1/4)	64 (2 1/4)	51 (2)	127 (5)	127 (5)	64 (2 1/4)	64 (2 1/4)	64 (2 1/4)	127 (5)
65 (2 1/4)	65 (2 1/4)	65 (2 1/4)	51 (2)	127 (5)	127 (5)	65 (2 1/4)	65 (2 1/4)	65 (2 1/4)	127 (5)
66 (2 1/4)	66 (2 1/4)	66 (2 1/4)	51 (2)	127 (5)	127 (5)	66 (2 1/4)	66 (2 1/4)	66 (2 1/4)	127 (5)
67 (2 1/4)	67 (2 1/4)	67 (2 1/4)	51 (2)	127 (5)	127 (5)	67 (2 1/4)	67 (2 1/4)	67 (2 1/4)	127 (5)
68 (2 1/4)	68 (2 1/4)	68 (2 1/4)	51 (2)	127 (5)	127 (5)	68 (2 1/4)	68 (2 1/4)	68 (2 1/4)	127 (5)
69 (2 1/4)	69 (2 1/4)	69 (2 1/4)	51 (2)	127 (5)	127 (5)	69 (2 1/4)	69 (2 1/4)	69 (2 1/4)	127 (5)
70 (2 1/4)	70 (2 1/4)	70 (2 1/4)	51 (2)	127 (5)	127 (5)	70 (2 1/4)	70 (2 1/4)	70 (2 1/4)	127 (5)
71 (2 1/4)	71 (2 1/4)	71 (2 1/4)	51 (2)	127 (5)	127 (5)	71 (2 1/4)	71 (2 1/4)	71 (2 1/4)	127 (5)
72 (2 1/4)	72 (2 1/4)	72 (2 1/4)	51 (2)	127 (5)	127 (5)	72 (2 1/4)	72 (2 1/4)	72 (2 1/4)	127 (5)
73 (2 1/4)	73 (2 1/4)	73 (2 1/4)	51 (2)	127 (5)	127 (5)	73 (2 1/4)	73 (2 1/4)	73 (2 1/4)	127 (5)
74 (2 1/4)	74 (2 1/4)	74 (2 1/4)	51 (2)	127 (5)	127 (5)	74 (2 1/4)	74 (2 1/4)	74 (2 1/4)	127 (5)
75 (2 1/4)	75 (2 1/4)	75 (2 1/4)	51 (2)	127 (5)	127 (5)	75 (2 1/4)	75 (2 1/4)	75 (2 1/4)	127 (5)
76 (3)	76 (3)	76 (3)	51 (2)	127 (5)	127 (5)	76 (3)	76 (3)	76 (3)	127 (5)
77 (3)	77 (3)	77 (3)	51 (2)	127 (5)	127 (5)	77 (3)	77 (3)	77 (3)	127 (5)
78 (3)	78 (3)	78 (3)	51 (2)	127 (5)	127 (5)	78 (3)	78 (3)	78 (3)	127 (5)
79 (3)	79 (3)	79 (3)	51 (2)	127 (5)	127 (5)	79 (3)	79 (3)	79 (3)	127 (5)
80 (3)	80 (3)	80 (3)	51 (2)	127 (5)	127 (5)	80 (3)	80 (3)	80 (3)	127 (5)
81 (3)	81 (3)	81 (3)	51 (2)	127 (5)	127 (5)	81 (3)	81 (3)	81 (3)	127 (5)
82 (3)	82 (3)	82 (3)	51 (2)	127 (5)	127 (5)	82 (3)	82 (3)	82 (3)	127 (5)
83 (3 1/4)	83 (3 1/4)	83 (3 1/4)	51 (2)	127 (5)	127 (5)	83 (3 1/4)	83 (3 1/4)	83 (3 1/4)	127 (5)
84 (3 1/4)	84 (3 1/4)	84 (3 1/4)	51 (2)	127 (5)	127 (5)	84 (3 1/4)	84 (3 1/4)	84 (3 1/4)	127 (5)
85 (3 1/4)	85 (3 1/4)	85 (3 1/4)	51 (2)	127 (5)	127 (5)	85 (3 1/4)	85 (3 1/4)	85 (3 1/4)	127 (5)
86 (3 1/4)	86 (3 1/4)	86 (3 1/4)	51 (2)	127 (5)	127 (5)	86 (3 1/4)	86 (3 1/4)	86 (3 1/4)	127 (5)
87 (3 1/4)	87 (3 1/4)	87 (3 1/4)	51 (2)	127 (5)	127 (5)	87 (3 1/4)	87 (3 1/4)	87 (3 1/4)	127 (5)
88 (3 1/4)	88 (3 1/4)	88 (3 1/4)	51 (2)	127 (5)	127 (5)	88 (3 1/4)	88 (3 1/4)	88 (3 1/4)	127 (5)
89 (3 1/4)	89 (3 1/4)	89 (3 1/4)	51 (2)	127 (5)	127 (5)	89 (3 1/4)	89 (3 1/4)	89 (3 1/4)	127 (5)

102 (4)	76 (3)	150 (6)	150 (6)
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102 (4)	89 (3 1/2)	150 (6)	150 (6)
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Straight Reducer

Length 4"	ID1		ID2		Length	
	MM (INCH)	MM (INCH)	MM (INCH)	MM (INCH)	MM (INCH)	MM (INCH)
	14 (5/8)	9 (13/32)	10 (4)	12 (4)	10 (4)	12 (4)
	14 (5/8)	13 (1/2)	12 (4)	14 (4)	12 (4)	14 (4)
	19 (3/4)	16 (5/8)	12 (4)	14 (4)	12 (4)	14 (4)
	22 (6/7)	17 (5/8)	12 (4)	14 (4)	12 (4)	14 (4)
	23 (6/7)	19 (3/4)	12 (4)	14 (4)	12 (4)	14 (4)
	25 (1)	18 (5/8)	12 (4)	14 (4)	12 (4)	14 (4)
	25 (1)	19 (3/4)	12 (4)	14 (4)	12 (4)	14 (4)
	25 (1)	22 (6/7)	12 (4)	14 (4)	12 (4)	14 (4)
	28 (1 1/8)	19 (3/4)	12 (4)	14 (4)	12 (4)	14 (4)
	28 (1 1/8)	22 (6/7)	12 (4)	14 (4)	12 (4)	14 (4)
	28 (1 1/8)	25 (1)	12 (4)	14 (4)	12 (4)	14 (4)
	32 (1 1/4)	25 (1)	12 (4)	14 (4)	12 (4)	14 (4)
	32 (1 1/4)	28 (1 1/8)	12 (4)	14 (4)	12 (4)	14 (4)
	35 (1 3/8)	19 (3/4)	12 (4)	14 (4)	12 (4)	14 (4)
	35 (1 3/8)	22 (6/7)	12 (4)	14 (4)	12 (4)	14 (4)
	35 (1 3/8)	25 (1)	12 (4)	14 (4)	12 (4)	14 (4)
	35 (1 3/8)	28 (1 1/8)	12 (4)	14 (4)	12 (4)	14 (4)
	35 (1 3/8)	32 (1 1/4)	12 (4)	14 (4)	12 (4)	14 (4)
	36 (1 1/2)	22 (6/7)	12 (4)	14 (4)	12 (4)	14 (4)
	36 (1 1/2)	25 (1)	12 (4)	14 (4)	12 (4)	14 (4)
	36 (1 1/2)	28 (1 1/8)	12 (4)	14 (4)	12 (4)	14 (4)
	36 (1 1/2)	32 (1 1/4)	12 (4)	14 (4)	12 (4)	14 (4)
	38 (1 1/2)	35 (1 3/8)	12 (4)	14 (4)	12 (4)	14 (4)
	41 (1 3/5)	42 (1 2/3)	12 (4)	14 (4)	12 (4)	14 (4)
	41 (1 3/5)	32 (1 1/4)	12 (4)	14 (4)	12 (4)	14 (4)
	45 (1 7/8)	35 (1 3/8)	12 (4)	14 (4)	12 (4)	14 (4)
	45 (1 7/8)	38 (1 1/2)	12 (4)	14 (4)	12 (4)	14 (4)

	(%)	(%)	(%)
45 (17/9)	38 (1 1/2)	102 (4)	

45° Elbow with Arm length 6"

ID1	ID2	Length A MM (INCH)	Length B MM (INCH)	Length C MM (INCH)
18 (5/7)	18 (5/7)	150 (6)	150 (6)	150 (6)
19 (3/4)	19 (3/4)	150 (6)	150 (6)	150 (6)
20 (4/5)	20 (4/5)	150 (6)	150 (6)	150 (6)
25 (1)	25 (1)	150 (6)	150 (6)	150 (6)
30 (1 1/6)	30 (1 1/6)	150 (6)	150 (6)	150 (6)
32 (1 1/4)	32 (1 1/4)	150 (6)	150 (6)	150 (6)
38 (1 1/2)	38 (1 1/2)	150 (6)	150 (6)	150 (6)
40 (1 4/7)	40 (1 4/7)	150 (6)	150 (6)	150 (6)
45 (1 7/9)	45 (1 7/9)	150 (6)	150 (6)	150 (6)
51 (2)	51 (2)	150 (6)	150 (6)	150 (6)
54 (2 1/8)	54 (2 1/8)	150 (6)	150 (6)	150 (6)
57 (2 1/4)	57 (2 1/4)	150 (6)	150 (6)	150 (6)
61 (2 2/5)	61 (2 2/5)	150 (6)	150 (6)	150 (6)
63 (2 1/2)	63 (2 1/2)	150 (6)	150 (6)	150 (6)
65 (2 5/9)	65 (2 5/9)	150 (6)	150 (6)	150 (6)
70 (2 3/4)	70 (2 3/4)	150 (6)	150 (6)	150 (6)
76 (3)	76 (3)	150 (6)	150 (6)	150 (6)
83 (3 1/4)	83 (3 1/4)	150 (6)	150 (6)	150 (6)
89 (3 1/2)	89 (3 1/2)	150 (6)	150 (6)	150 (6)
102 (4)	102 (4)	150 (6)	150 (6)	150 (6)

102 (4)	102 (4)	150 (6)	150 (6)
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Technical drawing of a tapered shaft. The drawing shows a shaft with a larger diameter $D1$ at the bottom and a smaller diameter $D2$ at the top. The length of the shaft is labeled as $Length$. The shaft is shown in a perspective view with dashed lines indicating the internal structure.

15° Reducer Elbow with Arm length 6"

ID1	ID2	Length A	Length B
57 (2/14)	51 (2)	150 (6)	150 (6)
76 (3)	51 (2)	150 (6)	150 (6)
76 (3/12)	51 (2)	150 (6)	150 (6)
63 (2/12)	57 (2/14)	150 (6)	150 (6)
70 (2/34)	57 (2/14)	150 (6)	150 (6)
76 (3)	51 (2)	150 (6)	150 (6)
76 (3/14)	63 (2/12)	150 (6)	150 (6)
88 (3/12)	63 (2/12)	150 (6)	150 (6)
102 (4)	89 (3/12)	150 (6)	150 (6)

Length 5"	Length 6"	Length 7"	Length 8"	Length 9"	Length 10"
19 (3/4)	25 (1)	35 (1 3/8)	45 (1 1/2)	55 (1 7/8)	65 (2)
28 (1 1/8)	38 (1 1/2)	48 (1 7/8)	58 (2 1/8)	68 (2 3/8)	78 (2 7/8)
38 (1 1/2)	48 (1 7/8)	58 (2 1/8)	68 (2 3/8)	78 (2 7/8)	88 (3 1/8)
48 (1 7/8)	58 (2 1/8)	68 (2 3/8)	78 (2 7/8)	88 (3 1/8)	98 (3 5/8)
58 (2 1/8)	68 (2 3/8)	78 (2 7/8)	88 (3 1/8)	98 (3 5/8)	108 (4)
68 (2 3/8)	78 (2 7/8)	88 (3 1/8)	98 (3 5/8)	108 (4)	118 (4 1/4)
78 (2 7/8)	88 (3 1/8)	98 (3 5/8)	108 (4)	118 (4 1/4)	128 (4 3/4)
88 (3 1/8)	98 (3 5/8)	108 (4)	118 (4 1/4)	128 (4 3/4)	138 (4 7/8)
98 (3 5/8)	108 (4)	118 (4 1/4)	128 (4 3/4)	138 (4 7/8)	148 (5 1/8)
108 (4)	118 (4 1/4)	128 (4 3/4)	138 (4 7/8)	148 (5 1/8)	158 (5 3/8)
118 (4 1/4)	128 (4 3/4)	138 (4 7/8)	148 (5 1/8)	158 (5 3/8)	168 (5 7/8)
128 (4 3/4)	138 (4 7/8)	148 (5 1/8)	158 (5 3/8)	168 (5 7/8)	178 (6 1/8)
138 (4 7/8)	148 (5 1/8)	158 (5 3/8)	168 (5 7/8)	178 (6 1/8)	188 (6 3/8)
148 (5 1/8)	158 (5 3/8)	168 (5 7/8)	178 (6 1/8)	188 (6 3/8)	198 (6 5/8)
158 (5 3/8)	168 (5 7/8)	178 (6 1/8)	188 (6 3/8)	198 (6 5/8)	208 (6 7/8)
168 (5 7/8)	178 (6 1/8)	188 (6 3/8)	198 (6 5/8)	208 (6 7/8)	218 (7 1/8)
178 (6 1/8)	188 (6 3/8)	198 (6 5/8)	208 (6 7/8)	218 (7 1/8)	228 (7 3/8)
188 (6 3/8)	198 (6 5/8)	208 (6 7/8)	218 (7 1/8)	228 (7 3/8)	238 (7 5/8)
198 (6 5/8)	208 (6 7/8)	218 (7 1/8)	228 (7 3/8)	238 (7 5/8)	248 (7 7/8)
208 (6 7/8)	218 (7 1/8)	228 (7 3/8)	238 (7 5/8)	248 (7 7/8)	258 (8 1/8)
218 (7 1/8)	228 (7 3/8)	238 (7 5/8)	248 (7 7/8)	258 (8 1/8)	268 (8 3/8)
228 (7 3/8)	238 (7 5/8)	248 (7 7/8)	258 (8 1/8)	268 (8 3/8)	278 (8 5/8)
238 (7 5/8)	248 (7 7/8)	258 (8 1/8)	268 (8 3/8)	278 (8 5/8)	288 (8 7/8)
248 (7 7/8)	258 (8 1/8)	268 (8 3/8)	278 (8 5/8)	288 (8 7/8)	298 (9 1/8)
258 (8 1/8)	268 (8 3/8)	278 (8 5/8)	288 (8 7/8)	298 (9 1/8)	308 (9 3/8)
268 (8 3/8)	278 (8 5/8)	288 (8 7/8)	298 (9 1/8)	308 (9 3/8)	318 (9 5/8)
278 (8 5/8)	288 (8 7/8)	298 (9 1/8)	308 (9 3/8)	318 (9 5/8)	328 (9 7/8)
288 (8 7/8)	298 (9 1/8)	308 (9 3/8)	318 (9 5/8)	328 (9 7/8)	338 (10 1/8)
298 (9 1/8)	308 (9 3/8)	318 (9 5/8)	328 (9 7/8)	338 (10 1/8)	348 (10 3/8)
308 (9 3/8)	318 (9 5/8)	328 (9 7/8)	338 (10 1/8)	348 (10 3/8)	358 (10 5/8)
318 (9 5/8)	328 (9 7/8)	338 (10 1/8)	348 (10 3/8)	358 (10 5/8)	368 (10 7/8)
328 (9 7/8)	338 (10 1/8)	348 (10 3/8)	358 (10 5/8)	368 (10 7/8)	378 (11 1/8)
338 (10 1/8)	348 (10 3/8)	358 (10 5/8)	368 (10 7/8)	378 (11 1/8)	388 (11 3/8)
348 (10 3/8)	358 (10 5/8)	368 (10 7/8)	378 (11 1/8)	388 (11 3/8)	398 (11 5/8)
358 (10 5/8)	368 (10 7/8)	378 (11 1/8)	388 (11 3/8)	398 (11 5/8)	408 (11 7/8)
368 (10 7/8)	378 (11 1/8)	388 (11 3/8)	398 (11 5/8)	408 (11 7/8)	418 (12 1/8)
378 (11 1/8)	388 (11 3/8)	398 (11 5/8)	408 (11 7/8)	418 (12 1/8)	428 (12 3/8)
388 (11 3/8)	398 (11 5/8)	408 (11 7/8)	418 (12 1/8)	428 (12 3/8)	438 (12 5/8)
398 (11 5/8)	408 (11 7/8)	418 (12 1/8)	428 (12 3/8)	438 (12 5/8)	448 (12 7/8)
408 (11 7/8)	418 (12 1/8)	428 (12 3/8)	438 (12 5/8)	448 (12 7/8)	458 (13 1/8)
418 (12 1/8)	428 (12 3/8)	438 (12 5/8)	448 (12 7/8)	458 (13 1/8)	468 (13 3/8)
428 (12 3/8)	438 (12 5/8)	448 (12 7/8)	458 (13 1/8)	468 (13 3/8)	478 (13 5/8)
438 (12 5/8)	448 (12 7/8)	458 (13 1/8)	468 (13 3/8)	478 (13 5/8)	488 (13 7/8)
448 (12 7/8)	458 (13 1/8)	468 (13 3/8)	478 (13 5/8)	488 (13 7/8)	498 (14 1/8)
458 (13 1/8)	468 (13 3/8)	478 (13 5/8)	488 (13 7/8)	498 (14 1/8)	508 (14 3/8)
468 (13 3/8)	478 (13 5/8)	488 (13 7/8)	498 (14 1/8)	508 (14 3/8)	518 (14 5/8)
478 (13 5/8)	488 (13 7/8)	498 (14 1/8)	508 (14 3/8)	518 (14 5/8)	528 (14 7/8)
488 (13 7/8)	498 (14 1/8)	508 (14 3/8)	518 (14 5/8)	528 (14 7/8)	538 (15 1/8)
498 (14 1/8)	508 (14 3/8)	518 (14 5/8)	528 (14 7/8)	538 (15 1/8)	548 (15 3/8)
508 (14 3/8)	518 (14 5/8)	528 (14 7/8)	538 (15 1/8)	548 (15 3/8)	558 (15 5/8)
518 (14 5/8)	528 (14 7/8)	538 (15 1/8)	548 (15 3/8)	558 (15 5/8)	568 (15 7/8)
528 (14 7/8)	538 (15 1/8)	548 (15 3/8)	558 (15 5/8)	568 (15 7/8)	578 (16 1/8)
538 (15 1/8)	548 (15 3/8)	558 (15 5/8)	568 (15 7/8)	578 (16 1/8)	588 (16 3/8)
548 (15 3/8)	558 (15 5/8)	568 (15 7/8)	578 (16 1/8)	588 (16 3/8)	598 (16 5/8)
558 (15 5/8)	568 (15 7/8)	578 (16 1/8)	588 (16 3/8)	598 (16 5/8)	608 (16 7/8)
568 (15 7/8)	578 (16 1/8)	588 (16 3/8)	598 (16 5/8)	608 (16 7/8)	618 (17 1/8)
578 (16 1/8)	588 (16 3/8)	598 (16 5/8)	608 (16 7/8)	618 (17 1/8)	628 (17 3/8)
588 (16 3/8)	598 (16 5/8)	608 (16 7/8)	618 (17 1/8)	628 (17 3/8)	638 (17 5/8)
598 (16 5/8)	608 (16 7/8)	618 (17 1/8)	628 (17 3/8)	638 (17 5/8)	648 (17 7/8)
608 (16 7/8)	618 (17 1/8)	628 (17 3/8)	638 (17 5/8)	648 (17 7/8)	658 (18 1/8)
618 (17 1/8)	628 (17 3/8)	638 (17 5/8)	648 (17 7/8)	658 (18 1/8)	668 (18 3/8)
628 (17 3/8)	638 (17 5/8)	648 (17 7/8)	658 (18 1/8)	668 (18 3/8)	678 (18 5/8)
638 (17 5/8)	648 (17 7/8)	658 (18 1/8)	668 (18 3/8)	678 (18 5/8)	688 (18 7/8)
648 (17 7/8)	658 (18 1/8)	668 (18 3/8)	678 (18 5/8)	688 (18 7/8)	698 (19 1/8)
658 (18 1/8)	668 (18 3/8)	678 (18 5/8)	688 (18 7/8)	698 (19 1/8)	708 (19 3/8)
668 (18 3/8)	678 (18 5/8)	688 (18 7/8)	698 (19 1/8)	708 (19 3/8)	718 (19 5/8)
678 (18 5/8)	688 (18 7/8)	698 (19 1/8)	708 (19 3/8)	718 (19 5/8)	728 (19 7/8)
688 (18 7/8)	698 (19 1/8)	708 (19 3/8)	718 (19 5/8)	728 (19 7/8)	738 (20 1/8)
698 (19 1/8)	708 (19 3/8)	718 (19 5/8)	728 (19 7/8)	738 (20 1/8)	748 (20 3/8)
708 (19 3/8)	718 (19 5/8)	728 (19 7/8)	738 (20 1/8)	748 (20 3/8)	758 (20 5/8)
718 (19 5/8)	728 (19 7/8)	738 (20 1/8)	748 (20 3/8)	758 (20 5/8)	768 (20 7/8)
728 (19 7/8)	738 (20 1/8)	748 (20 3/8)	758 (20 5/8)	768 (20 7/8)	778 (21 1/8)
738 (20 1/8)	748 (20 3/8)	758 (20 5/8)	768 (20 7/8)	778 (21 1/8)	788 (21 3/8)
748 (20 3/8)	758 (20 5/8)	768 (20 7/8)	778 (21 1/8)	788 (21 3/8)	798 (21 5/8)
758 (20 5/8)	768 (20 7/8)	778 (21 1/8)	788 (21 3/8)	798 (21 5/8)	808 (21 7/8)
768 (20 7/8)	778 (21 1/8)	788 (21 3/8)	798 (21 5/8)	808 (21 7/8)	818 (22 1/8)
778 (21 1/8)	788 (21 3/8)	798 (21 5/8)	808 (21 7/8)	818 (22 1/8)	828 (22 3/8)
788 (21 3/8)	798 (21 5/8)	808 (21 7/8)	818 (22 1/8)	828 (22 3/8)	838 (22 5/8)
798 (21 5/8)	808 (21 7/8)	818 (22 1/8)	828 (22 3/8)	838 (22 5/8)	848 (22 7/8)
808 (21 7/8)	818 (22 1/8)	828 (22 3/8)	838 (22 5/8)	848 (22 7/8)	858 (23 1/8)
818 (21 7/8)	828 (22 3/8)	838 (22 5/8)	848 (22 7/8)	858 (23 1/8)	868 (23 3/8)
828 (22 1/8)	838 (22 5/8)	848 (22 7/8)	858 (23 1/8)	868 (23 3/8)	878 (23 5/8)
838 (22 3/8)	848 (22 7/8)	858 (23 1/8)	868 (23 3/8)	878 (23 5/8)	888 (23 7/8)
848 (22 5/8)	858 (23 1/8)	868 (23 3/8)	878 (23 5/8)	888 (23 7/8)	898 (24 1/8)
858 (22 7/8)	868 (23 3/8)	878 (23 5/8)	888 (23 7/8)	898 (24 1/8)	908 (24 3/8)
868 (23 1/8)	878 (23 5/8)	888 (23 7/8)	898 (24 1/8)	908 (24 3/8)	918 (24 5/8)
878 (23 3/8)	888 (23 7/8)	898 (24 1/8)	908 (24 3/8)	918 (24 5/8)	928 (24 7/8)
888 (23 5/8)	898 (24 1/8)	908 (24 3/8)	918 (24 5/8)	928 (24 7/8)	938 (25 1/8)
898 (23 7/8)	908 (24 3/8)	918 (24 5/8)	928 (24 7/8)	938 (25 1/8)	948 (25 3/8)
908 (24 1/8)	918 (24 5/8)	928 (24 7/8)	938 (25 1/8)	948 (25 3/8)	958 (25 5/8)
918 (24 3/8)	928 (24 7/8)	938 (25 1/8)	948 (25 3/8)	958 (25 5/8)	968 (25 7/8)
928 (24 5/8)	938 (25 1/8)	948 (25 3/8)	958 (25 5/8)	968 (25 7/8)	978 (26 1/8)
938 (24 7/8)	948 (25 3/8)	958 (25 5/8)	968 (25 7/8)	978 (26 1/8)	988 (26 3/8)
948 (25 1/8)	958 (25 5/8)	968 (25 7/8)	978 (26 1/8)	988 (26 3/8)	998 (26 5/8)
958 (25 3/8)	968 (25 7/8)	978 (26 1/8)	988 (26 3/8)	998 (26 5/8)	1008 (26 7/8)

135° Elbow

ID1	ID2	Length A	Length B	MM (INCH)	MM (INCH)	MM (INCH)	MM (INCH)
25 (1)	25 (1)	75 (3)	75 (3)	160 (6.27)	160 (6.27)	160 (6.27)	160 (6.27)
28 (1.1)	28 (1.1)	170 (6.23)	170 (6.23)	90 (3.12)	90 (3.12)	90 (3.12)	90 (3.12)
32 (1.1)	32 (1.1)	102 (4)	102 (4)	140 (5.5)	140 (5.5)	140 (5.5)	140 (5.5)
35 (1.3)	35 (1.3)	102 (4)	102 (4)	140 (5.5)	140 (5.5)	140 (5.5)	140 (5.5)
41 (1.7)	41 (1.7)	102 (4)	102 (4)	140 (5.5)	140 (5.5)	140 (5.5)	140 (5.5)
45 (1.8)	45 (1.8)	102 (4)	102 (4)	140 (5.5)	140 (5.5)	140 (5.5)	140 (5.5)
48 (2.1)	48 (2.1)	102 (4)	102 (4)	140 (5.5)	140 (5.5)	140 (5.5)	140 (5.5)
65 (2.5)	65 (2.5)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)
20 (4/5)	20 (4/5)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)
30 (1.1)	30 (1.1)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)
37 (2.1)	37 (2.1)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)	150 (6)

57 (2 1/4)	57 (2 1/4)	150 (6)	150 (6)
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Length 6"	18 (5/7)	12 (1/2)	150 (6)
127 (5)	22 (6/7)	19 (3/4)	150 (6)
127 (5)	28 (1 1/9)	20 (4/5)	150 (6)
127 (5)	45 (1 7/9)	35 (1 3/8)	150 (6)
127 (5)	47 (1 6/7)	31 (1 2/9)	150 (6)
127 (5)	50 (2)	43 (1 2/3)	150 (6)
127 (5)	50 (2)	45 (1 7/9)	150 (6)

Length 6"

121 (1/2)	150 (6)
18 (5/7)	150 (6)
22 (6/7)	19 (3/4)
28 (1 1/7)	20 (5/4)
35 (1 3/8)	150 (6)
38 (1 1/2)	150 (6)
41 (1 6/7)	31 (1 2/9)
47 (1 7/8)	150 (6)
50 (2)	43 (1 2/3)
50 (2)	43 (1 2/3)
55 (2 1/6)	45 (1 7/9)
60 (2 1/3)	45 (1 7/9)
60 (2 1/3)	55 (2 1/6)
60 (2 1/3)	50 (2)
60 (2 1/3)	50 (2)
70 (2 3/4)	60 (2 1/3)
70 (2 3/4)	50 (2)
70 (2 3/4)	55 (2 1/6)
70 (2 3/4)	76 (3)
75 (3)	55 (2 1/6)
75 (3)	51 (2)
76 (3 1/7)	63 (2 1/2)
76 (3 1/7)	150 (6)

80 (3 1/7)

[illegible]

50 (2)

HAACHTSESTEENWEG 162, 1820 STEENOKKERZEEL, BELGIUM

TEMPERATURE OVERVIEW

Polymer	AU-EU	BR	CR	CSM	EPDM	FPM	FSI	HNBR	NBR	NBR PVC	NR	SBR	SI
Hardness Shore A	60°	40°-90°	40°-95°	50°-95°	25°-90°	55°-90°	60°-90°	45°-90°	30°-95°	60°-90°	30°-90°	40°-90°	45°-90°
Abrasion Resistance	••••	••••••••	••••	••	•••	••	•	•••	••••••	••••	••••••	•••	•
Elongation	••••	••••••••	••••	••	•	••••	•	•	•	••••••	••••	••	••
Electrical Isolation	••••	••	•••	••	••••••	••••	••••	•••	•••	••	••	••	••••
MAX TEMP	+100	+100	+120	+150	+150	+205	+250	+160	+120	+180	+90	+70	+250
MIN TEMP	- 60	-100	-60	-60	-60	-30	-30	-40	-50	-30	-75	-60	-80
Permeability	••	••	••	••	••••	••••	••••	••••	••••	••••	••	••	••••••
U.V Resistance	••••••	••••••	••••	••••	••••••	••••••	••••••	••••	•	••••••	••••	••••	••••••
Resistance Diluted Acids	••••••	••••	••••	••••••	••••••	••••••	••••••	••••	•	•	••••	••••	••••••
Resistance Concentrated Acids	••••••	••••	•	••••••	••••	••••••	••	••••	••••	••••	•	••••	•
Resistance oil & Grease	••••	•	••	••	•••	••••••	••••••	••••	••••	••••••	•	•	••••••
Mineral	••••	••••	•	•	•••	••••	••••	••••	••••	••••••	••••	••••	••••••
Inflamable	••	••	••	•	•••	••••	••	••••	••••	••••••	••••	••••	•
Alf & aromatic	•	•	•	•	•••	••••••	••	••••	••••	••••••	••••	••••	••••
Keton	••••	••	••	•	•••	••••••	••	••••	••••	••••••	••••	••••	••••
Chlorated	••••••	••••	••••	••••	••••	••••••	••••	••••	••••	••••	•	••	••••

AU-EU	Polyurethane rubber
BR	Polybutadiene rubber
CR	Polychloroprene rubber
CSM	Chlorosulfonated polyethylene rubber
EPDM	Ethylene propylene rubber
FPM	Fluor rubber
FSI	Fluor silicone rubber
HNBR	Hydrogenated NBR
NBR	Acrylonitrile butadiene rubber
NBR/PVC	Acrylonitrile butadiene - PVC
NR	Natural rubber
SBR	Styrene butadiene rubber
SI	Silicone rubber

••••	Not recommended
•	Poor
••	Average
•••	Good
••••	Very good
•••••	Very good /Excellent
••••••	Excellent



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