



CATALOG NO. 37306-000
EDITION 2020
SUPERSEDES 431-2020 (2018)

ENGINE HOSES, BELTS AND ACCESSORIES

2020 PRODUCT CATALOG





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	Description	Gates Spec	Where Sold	SAE (or Other) Spec	Cost (1 to 5 Scale)	Page
Coolant	Straight					
	Standard coolant hose	4175EC (75W)	N America	20R1 EC Class D2	●●●○○○	18
	Premium EPDM	4178	N America	20R1 EC Class D1	●●●○○○	19
	Premium EPDM, aramid	4175SC (Blue Stripe™)	N.A. & Europe	20R1 EC Class D1	●●●○○○	20
	Higher temperature	4175HT (FleetRunner™)	N America	20R1 EC HT Class D3	●●●○○○	21
	Thick wall	4176HD (76W)	N America	20R1 Class D2, heavy wall	●●●○○○	22
	Light duty, metric	4272 (Flexcord Plus)	Europe	20R4 Class D2, DIN 73422 Class B1	●●●○○○	23
	Oil resistant	4169A	N America	20R1 Class B tube, Class C cover	●●●○○○	24
	Oil resistant, thicker wall	4176Y	N America	20R1 Cl. B tube / C cover, heavy wall	●●●○○○	25
	Oil resistant, thickest wall	4179G (Green Stripe™)	N America	20R1 Cl. B tube / C cover, heavy wall	●●●○○○	26
	Oil resistant cover only	4169G	N America	20R1 EC Class D1 tube, Class C cover	●●●○○○	27
	Silicone	4171 (Durion™)	N America	20R1 HT Class A	●●●○○○	28
	Silicone	4171 (Durion™ Aramid)	N America	20R1 HT Class A	●●●○○○	28
	Silicone	4171	N America	20R1 HT Class A	●●●○○○	29
	Embedded wire helix	4685WG	N.A. & Europe	20R2 EC Class D1	●●●○○○	30
	Oil resistant w/ wire helix	4684CF	N America	20R2 Class B tube / C cover, J2006	●●●○○○	31
	Silicone w/ wire helix	4684S	N America	20R2 Class A	●●●○○○	32
	Convolutions, set lengths	4254 (Vulco-Flex™ II)	N America	Similar to 20R5 Class D2	●●●○○○	34
	Convolutions, ECR tube	4284 (Vulco-Flex™ Green Stripe™)	N.A. & Europe	20R5 EC Class D2	●●●○○○	35
	Hump connector	4177W	N.A. & Europe	20R1 Class B tube / C cover	●●●○○○	36
	Silicone hump connector	4177S	N America	20R1 Class A	●●●○○○	37
	Straight - Small ID					
	Standard heater hose	4230T	N.A. & Europe	20R3 Class D2 except hardness	●○○○○○	38
	Light duty	3270 (Safety Stripe™)	N America	Similar to 20R3 Class D2	●○○○○○	38
	Wiper, overflow tube	4040A	N.A. & Europe	1037, 942B, J200 M4CA710	●○○○○○	39
	Wiper, overflow hose	4251D	N America	Similar to SAE 20R3 Class D2	●○○○○○	39
	Premium, with blue stripe	4230SB (Blue Stripe™)	N.A. & Europe	20R3 EC Class D1	●○○○○○	40
	Premium, with no stripe	4230RK	N America	20R3 EC Class D1	●○○○○○	40
	Premium, with red stripe	4230RS (Red Stripe™)	N America	20R3 EC Class D1	●○○○○○	40
	Thick wall, aramid	3269S (Green Stripe™)	N America	20R1 EC Class D1 except wall	●○○○○○	41
	Metric sizes	3230 (EPDM)	Europe	DIN 73411 Class A except tolerance.	●○○○○○	41
	Oil resistant	4230S / 4230SS	N.A. & Europe	20R3 Class B tube / C cover	●○○○○○	42
	Silicone	3230 / 3231 (Europe)	N.A. & Europe	20R3 HT Class A	●○○○○○	42
	Silicone tubing	4040T	N America	J200 M2GE 705 Z1	●○○○○○	43
	Formed					
	Standard curved hose	4280MH	N.A. & Europe	20R3/4 EC Class D1	●●●○○○	48
	Non-ECR EPDM	4280GN	N.A. & Europe	20R3/4 Class D2	●●●○○○	49
Higher pressure, aramid	4276KR	N.A. & Europe	20R3/4 EC Class D1	●●●○○○	50	
High-fatigue resistance	4256HY	N.A. & Europe	20R4 EC Class D1	●●●○○○	51	
Premium EPDM, aramid	4256SB (Blue Stripe™)	N.A. & Europe	20R3/4 EC Class D1	●●●○○○	52	
Higher temp. p-EPDM	4256LS	N.A. & Europe	20R3/4 EC Class D3	●●●○○○	53	
SCR	SCR					
	DEF tank fill / vent	4217IS	N.A. & Europe	Similar to 20R3/4 EC Class D3	●●●○○○	86
	DEF tank fill / vent	4256PC	N.A. & Europe	Similar to 20R3/4 EC Class D3	●●●○○○	86
	Heated DEF line	4202 (Nylon Hotline™)	N.A. & Europe	None	●●●○○○	89
	Heated DEF line	4202 (EPDM Hotline™)	N.A. & Europe	None	●●●○○○	89
Heated DEF line	4401 (Heat Weave™)	N.A. & Europe	J2044	●●●○○○	91	
Exhaust	Exhaust					
	Marine wet exhaust	3137ME	N America	J2006 R1	●●●○○○	92
	Wet exhaust w/ helix	4686ME	N America	J2006 R2	●●●○○○	93
	Oil resistant w/ wire helix	4684CF	N America	20R2 Class B tube / C cover	●●●○○○	94
	Silicone tubing	4040T	N America	J200 M2GE 705 Z1	●●●○○○	95
Air	Inlet Air - Straight					
	(Use a coolant hose)	Connector	N.A. & Europe			-
	Duct w/ thin wall, helix	7768	N.A. & Europe	DOT FMVSS 302	●○○○○○	98
	Oil resistant w/ helix	4663A (63SB)	N.A. & Europe	None	●●●○○○	99
	Thicker wall w/ helix	4663J (163SB)	N America	None	●●●○○○	100
	Thick wall w/ helix	4663G	N America	None	●●●○○○	101
	Inlet Air - Formed					
	Air cleaner hose	4289E	N.A. & Europe	J200 M3CA 707	●●●○○○	102
	Oil resistant	4289N	N.A. & Europe	J200 M3BC 707	●●●○○○	104
	Turbo Air - Straight					
	Silicone CAC connector	4171H	N.A. & Europe	None	●●●○○○	106
	Hump hose connector	4177W (Green Stripe™) / 4177C	N.A. & Europe	20R1 Class B tube, Class C cover	●●●○○○	107
	Silicone hump connector	4177S	N America	20R1 Class A	●●●○○○	108
	Hump & ring connector	4177	N America	J200 Class A	●●●○○○	109
	Turbo Air - Formed					
	Cold side CAC	4256NP	N.A. & Europe	20R4 Class D1 except wall	●●●○○○	111
	Fatigue resistant CAC	4256PM	N.A. & Europe	20R4 Class D1 except wall	●●●○○○	111
Oil resistant CAC	4278AA	N.A. & Europe	20R4 Class D1 except wall	●●●○○○	111	
Heat and Oil Resistant CAC	HM6060	N.A. & Europe	Fiat 9.02136/01 B3-O J200 175EE 708 G21 21(Duro 60-75)	●●●○○○	112	

Gates Spec	Construction/Tube/ Reinforcement/Cover	Working Pressure Range		Burst Pressure Range		Page
		MPa (depends on ID)	PSI (depends on ID)	MPa (depends on ID)	PSI (depends on ID)	
Straight						
4175EC (75W)	EPDM/fabric plies/EPDM	0.08 to 0.95	12 to 138	0.34 to 3.79	50 to 550	18
4178	EPDM/fabric plies/EPDM	0.08 to 0.76	12 to 110	0.34 to 2.93	50 to 425	19
4175SC (Blue Stripe™)	EPDM/fabric plies/EPDM	0.34 to 0.69	50 to 100	1.38 to 2.76	200 to 400	20
4175HT (FleetRunner™)	p-EPDM/fabric/green p-EPDM	0.86 to 1.03	125 to 150	3.45 to 4.14	500 to 600	21
4176HD (76W)	EPDM/fabric plies/EPDM	0.26 to 1.21	38 to 175	1.03 to 4.83	150 to 700	22
4272 (Flexcord Plus)	EPDM/aramid yarn/EPDM	0.20 to 0.40	29 to 58	0.6 to 1.24	87 to 180	23
4169A	NBR/fabric plies/CR	0.07 to 1.03	10 to 150	0.34 to 4.14	50 to 600	24
4176Y	NBR/fabric plies/CR	0.17 to 0.95	25 to 138	0.69 to 3.79	100 to 550	25
4179G (Green Stripe™)	NBR/fabric 4 plies/CR	0.28 to 0.69	40 to 100	1.10 to 2.76	160 to 400	26
4169G	EPDM/fabric plies/CR	0.13 to 0.95	19 to 138	0.52 to 3.79	75 to 550	27
4171 (Durion™)	Red silicone/polyester	0.17 to 0.76	25 to 110	0.69 to 2.93	100 to 425	28
4171 (Durion™ Aramid)	Aramid/Blue silicone	0.17 to 0.52	25 to 75	0.69 to 2.07	100 to 300	28
4171	Red silicone/polyester/green silicone	0.14 to 0.76	20 to 110	0.55 to 2.93	80 to 425	29
4685WG	EPDM/fabric + wire/EPDM	0.10 to 0.69	15 to 100	0.52 to 2.76	75 to 400	30
4684CF	NBR/fabric + wire/CR	0.09 to 0.69	13 to 100	0.34 to 2.76	50 to 400	31
4684S	Silicone/fabric + wire/Silicone	0.23 to 0.59	33 to 85	0.90 to 2.41	130 to 350	32
4254 (Vulco-Flex™ II)	EPDM/fabric + wire/EPDM	0.14 to 0.21	20 to 30	0.55 to 0.83	80 to 120	34
4284 (Vulco-Flex™ Green Stripe™)	EPDM/fabric + wire/EPDM + fabric	0.14 to 0.22	21 to 30	0.55 to 0.84	81 to 120	35
4177W	NBR/fabric plies/CR	0.17 to 0.47	25 to 69	0.69 to 1.90	100 to 275	36
4177S	plies of silicone and polyester	0.09 to 0.48	13 to 59	0.34 to 1.980	50 to 275	37
Straight - Small ID						
4230T	EPDM/spiral yarn/EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	38
3270 (Safety Stripe™)	EPDM/spiral yarn/EPDM	0.31 to 0.41	45 to 60	1.21 to 1.72	175 to 250	38
4040A	Unreinforced EPDM	0.17	25	no rating	no rating	39
4251D	EPDM/yarn/EPDM	0.34	50	1.72	250	39
4230SB (Blue Stripe™)	EPDM/aramid yarn/EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	40
4230RK	EPDM/aramid yarn/EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	40
4230RS (Red Stripe™)	EPDM/aramid yarn/EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	40
3269S (Green Stripe™)	EPDM/aramid yarn/EPDM	0.48 to 0.69	70 to 105	1.90 to 2.76	276 to 400	41
3230 (EPDM)	EPDM/rayon yarn/EPDM	0.40 to 0.50	58 to 73	1.0 to 1.2	145 to 174	41
4230S / 4230SS	NBR/yarn/CR	0.52	75	2.07	300	42
3230 / 3231 (Europe)	silicone/yarn/silicone	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	42
4040T	Unreinforced silicone	-0.085	-12.3	no rating	no rating	43
Formed						
4280MH	EPDM/knit yarn/EPDM	0.07 to 0.43	10 to 63	0.27 to 1.72	40 to 250	48
4280GN	EPDM/knit yarn/EPDM	0.17 to 0.43	25 to 63	0.69 to 1.72	100 to 250	49
4276KR	EPDM/knit aramid yarn/EPDM	0.17 to 0.43	25 to 63	0.69 to 1.72	100 to 250	50
4256HY	EPDM/knit hybrid yarn/EPDM	0.35 to 0.63	50 to 90	1.38 to 2.50	200 to 363	51
4256SB (Blue Stripe™)	EPDM/knit aramid yarn/EPDM	0.12 to 0.43	18 to 63	0.48 to 1.72	70 to 250	52
4256LS	EPDM/knit aramid yarn/EPDM	0.17 to 0.26	25 to 38	0.69 to 1.03	100 to 150	53
SCR						
4217IS	p-EPDM/PET or aramid/EPDM	2.41	350	6.89	1000	86
4256PC	EPDM/knit aramid yarn/EPDM	0.17 to 0.26	25 to 38	0.69 to 1.03	100 to 150	87
4202 (Nylon Hotline™)	Nylon tube, heat sleeve, J2044 ends	0.35	50	1.38	200	89
4202 (EPDM Hotline™)	p-EPDM tube, heat sleeve, J2044 ends	0.35	50	1.38	200	89
4401 (Heat Weave™)	Nylon Tube, heat sleeve, TPR cover	0.35	50	1.38	20	91
Exhaust						
3137ME	EPDM/2 ply fabric/EPDM	0.69	100	2.07	300	92
4686ME	EPDM/2 ply fabric + 2 wire/EPDM	0.69	100	2.07	300	93
4684CF	NBR/fabric + wire/CR	0.09 to 0.69	13 to 100	0.34 to 2.76	50 to 400	94
4040T	Unreinforced silicone	-0.085	-12.3	no rating	no rating	95
Inlet Air - Straight						
Connector						-
7768	Propylene-ethylene/pp helix	0 to 0.07	0 to 10	no rating	no rating	98
4663A (63SB)	CR/fabric + 2 wire/CR + fabric	0.03 to 0.07	5 to 10	0.14 to 0.28	20 to 40	99
4663J (163SB)	CR/fabric + 2 wire/CR	0.06 to 0.14	8 to 20	0.22 to 0.55	32 to 80	100
4663G	CR/fabric + 2 wire/CR	0.07	10	0.28	40	101
Inlet Air - Formed						
4289E	Unreinforced EPDM	no rating	no rating	no rating	no rating	102
4289N	Unreinforced CR	no rating	no rating	no rating	no rating	104
Turbo Air - Straight						
4171H	silicone/high temp fabric/silicone	0.62 to 1.38	90 to 200	2.48 to 5.52	360 to 800	106
4177W (Green Stripe™) / 4177C	NBR/fabric plies/CR	0.17 to 0.47	25 to 69	0.69 to 1.90	100 to 275	107
4177S	plies of silicone and polyester	0.09 to 0.48	13 to 69	0.34 to 1.90	50 to 275	108
4177	4 ply silicone and aramid	0.17	25	0.69	100	109
Turbo Air - Formed						
4256NP	EPDM/m-aramid knit yarn/EPDM	no rating	no rating	0.76	110	111
4256PM	EPDM/hybrid knit yarn/EPDM	no rating	no rating	0.93	135	111
4278AA	CPE/hybrid knit yarn/CPE	no rating	no rating	0.83 to 1.38	121 to 200	111
HM6060	AEM/aramid/AEM	no rating	no rating	0.60 to 1.00	87 to 147	112



	Description	Gates Spec	Where Sold	SAE (or Other) Spec	Cost (1 to 5 Scale)	Page	
Fuel	Straight						
	Standard fuel/oil hose	4219G / 4219XL	N.A. & Europe	30R6 or 30R7	●●○○○○	56	
	Metric sizes	3225ST	Europe	30R7, DIN 73379 ex. tolerance	●●○○○○	57	
	Metric w/ textile cover	4324	Europe	DIN 73379	●●○○○○	58	
	Lower fuel permeation	4219D	N America	30R9, 180 psi	●●●●○○	58	
	Higher pressure	3284AC/3284SS (RLA 30R2)	N.A. & Europe	30R2 Type 1	●●○○○○	59	
	Low permeation barrier	4219BG (Barricade™)	N.A. & Europe	30R14 T1	●●○○○○	59	
	Barrier, fuel injection	4219BF (Barricade™ Fuel Injection)	N.A. & Europe	30R14 T2 excl. kink resist., 1E4340A,B	●●●○○○	61	
	Diesel/biodiesel fuel injection	4219BD	N.A. & Europe	Cat 1E4340B	●●●○○○	62	
	Nylon tubing for diesel	4327DT	North America	J844, DOT FMVSS 106	●○○○○○	63	
	Submersible (in-tank)	4219	N.A. & Europe	30R10	●●●●●●	63	
	Marine fuel and oil hose	4219M	North America	J1527, USCG Type A1	●●●●○○	64	
	Marine outdoor fuel line	4219N	North America	J1527, USCG Type B1	●●○○○○	64	
	Marine barrier fuel hose	4219BM (Barricade™ Marine)	North America	J1527, USCG Type A1-15		65	
	Marine high pressure	3658F (C5M)	North America	J1527, USCG Type A1	●●●●○○	65	
	Fuel filler w/ wire helix	4663K	N.A. & Europe	30R5 Class B tube / C cover	●●●●○○	66	
	Formed						
	Biodiesel fill and vent	4278BD	N.A. & Europe	30R6 with exceptions	●●●●○○	67	
	Oil	Straight					
		Fiber braid reinforced	3319HT (GTH)	N.A. & Europe	100R6	●●○○○○	72
Two fiber braids		3319CA (G3H)	N.A. & Europe	100R3	●●○○○○	72	
Transmission oil cooler		4219HT	North America	1532 Type B	●●○○○○	73	
High temperature w/ wire		3658D (C5D)	North America	J1402, DOT FMVSS-106	●●●●○○	73	
High temp. and pressure		3658BC (C5C XH)	N.A. & Europe	100R5, DOT FMVSS-106	●●●●○○	74	
High temp. true bore		4319 (MegaTech™ LOC)	North America	None	●●○○○○	75	
High temperature w/ wire		4657AM (MegaTech™ 250)	North America	None	●●●●○○	75	
High temp., wire, large ID		4657DT (MegaTech™ 500)	N.A. & Europe	None	●●●○○○	76	
High temp. and pressure		4657PS (MegaTech™ 3000)	North America	None	●●●○○○	76	
High pressure large ID		4657JT (MegaTech™ II)	North America	100R2 and 100R2 Type S	●●●●○○	77	
High pressure true bore		4657TB (MegaTech™ G5TB)	North America	None	●●●○○○	77	
Power Steering - Straight							
Pressure line		3317LE (PS188)	N.A. & Europe	J2050 Type 1	●●●○○○	78	
Power steering pressure line		3317AB (Mega Tech HVE)	North America	None	●●●○○○	78	
High temp return		3283LF	North America	J189, J2076	●●●○○○	79	
Return line		3283SA	North America	J189	●●●○○○	79	
Formed							
Standard oil fill / suction		4278CN	N.A. & Europe	30R6 (or 30R7 excl. sour gas test)	●●●○○○	81	
Higher pressure		4278OB	N.A. & Europe	30R2 Type 1 (except burst)	●●●○○○	82	
Power Steering - Formed							
Higher temperature	4278SS	N.A. & Europe	J200 M5DE 710 B15 E036	●●●○○○	83		
A/C	Refrigerant						
	Air Conditioning - thin wall	3353 (PolarSeal™ II)	N.A. & Europe	J2064 Type C Class I, J51	●●●○○○	114	
Air Conditioning hose	3353 (PolarSeal™)	N America	J2064 Type C Class II, J51	●●●○○○	115		
Brake	Straight						
	Standard air brake	3245E	N America	J1402, DOT FMVSS-106	●●○○○○	118	
	Arctic air brake	3245T	N America	J1403 Type H, DOT FMVSS-106	●●○○○○	118	
	Higher pressure	3658C (C5C)	N. America	J1402, DOT FMVSS 106, SAE 100R5	●●○○○○	119	
	Higher temperature	4657AB (TR500)	N.A. & Europe	J1402, DOT FMVSS 106	●●●○○○	119	
	Higher pressure, temp.	3658E (C5E)	N America	J1402, DOT FMVSS 106	●●●○○○	120	
	Higher pressure, temp.	4657DT (MegaTech™ 1000)	N.A. & Europe	J1402, DOT FMVSS-106	●●●○○○	120	
	High temperature	7752 (C14)	N America		●●●●○○	121	
	Light duty	3276	N America	J1403 type L, DOT FMVSS 106VL	●○○○○○	121	
	Nylon air brake tubing	4327 (NABT)	N America	J844, DOT FMVSS-106-74	●○○○○○	122	

Gates Spec	Tube/Reinforcement/Cover	Working Pressure Range		Burst Pressure Range		Page
		MPa (depends on ID)	PSI (depends on ID)	MPa (depends on ID)	PSI (depends on ID)	
Straight						
4219G / 4219XL	NBR/spiral yarn/NBR-PVC	0.24 to 0.34	35 to 50	1.21 to 1.72	175 to 250	56
3225ST	NBR/spiral polyester/NBR+PVC	0.76	110	3.03	440	57
4324	ECO/HNBR or NBR+PVC, rayon	0.6	0.87	2.4	348	58
4219D	FKM+CPE/polyester braid/CPE	1.24	180	6.2	900	58
3284AC/3284SS (RLA 30R2)	NBR/braided yarn/NBR+PVC	1.10 to 1.72	160 to 250	4.41 to 6.89	640 to 1000	59
4219BG (Barricade™)	NBR+plastic/polyester/NBR+PVC	0.24 to 0.34	35 to 50	1.21 to 1.72	175 to 250	59
4219BF (Barricade™ Fuel Injection)	HNBR+plastic/aramid/CPE	1.55	225	7.76	1125	61
4219BD	HNBR/aramid/CPE	1.21	175	7.2	1050	61
4327DT	Nylon/nylon fiber/nylon	1.03	150	3.45	500	62
4219	FKM/aramid/FKM	0.69	100	2.8 to 3.4	400 to 500	62
4219M	NBR/high tensile fabric/CR	0.28	40	1.38	200	64
4219N	NBR/high tensile fabric/NBR+PVC	0.28	40	1.38	200	64
4219BM (Barricade™ Marine)	NBR+plastic/poly/NBR+PVC or CSM	0.24	35	1	140	65
3658F (C5M)	NBR/wire braid/NBR-PVC	3.45	500	13.79	2000	65
4663K	NBR/fabric + wire/CR+fabric	0.14	20	0.62	90	66
Formed						
4278BD	ECO/knit/ECO	0.11	16	0.55	80	67
Straight						
3319HT (GTH)	NBR/yarn/NBR-PVC	1.72 to 3.45	250 to 500	6.89 to 13.79	1000 to 2000	72
3319CA (G3H)	NBR/yarn/NBR-PVC	2.07 to 8.62	300 to 1250	8.27 to 34.47	1200 to 5000	72
4219HT	NBR/yarn/CR	0.41	60	4.14	600	73
3658D (C5D)	CPE/wire braid/CPE+green textile	2.76 to 10.34	400 to 1500	11.03 to 41.37	1600 to 6000	73
3658BC (C5C XH)	CPE/wire braid/CPE	4.31 to 20.68	625 to 3000	17.24 to 82.74	2500 to 12000	74
4319 (MegaTech™ LOC)	CPE/yarn/CPE+textile	2.07	300	8.27	1200	75
4657AM (MegaTech™ 250)	CPE/wire braid/rubber+PET braid	1.72	250	6.89	1000	75
4657DT (MegaTech™ 500)	CPE/steel braid/rubber+PET braid	3.45	500	13.79	2000	76
4657PS (MegaTech™ 3000)	CPE/wire braid/rubber+PET braid	20.68	3000	82.74	12000	76
4657JT (MegaTech™ II)	CPE/2 wire braid/blue PET braid	8.96 to 15.51	1300 to 2250	35.85 to 62.05	5200 to 9000	77
4657TB (MegaTech™ G5TB)	CPE/2 wire braid/rubber+PET braid	3.45 to 20.68	500 to 3000	13.79 to 82.74	2000 to 12000	77
Power Steering - Straight						
3317LE (PS188)	CSM/2 ply nylon/CSM	10.34	1500	41.37	6000	75
3317AB (MegaTech™ HVE)	CPE/yarn/CPE + textile	15.5	22.50	62	9000	75
3283SA	NBR/yarn/CR	1.38 to 1.72	200 to 250	5.52 to 6.89	800 to 1000	76
3283LF	CPE/yarn/CPE	1.72	250	12.41	1800	77
Formed						
4278CN	NBR/knit yarn/NBR-PVC	0.11 to 0.34	16 to 50	0.55 to 1.72	80 to 250	78
4278OB	NBR/knit aramid yarn/NBR-PVC	0.28 to 0.34	40 to 100	1.38 to 1.72	200 to 500	79
Power Steering - Formed						
4278SS	p-CPE/knit yarn/p-CPE	0.15 to 0.24	22 to 35	0.76 to 1.20	110 to 174	80
Refrigerant						
3353 (PolarSeal™ II)	CR/PA/CR/Spiral PET/IIR	2.41	350	9.65	1400	114
3353 (PolarSeal™)	CPE/nylon barrier/spiral PET/EPDM	3.45	500	13.79	2000	115
Straight						
3245E	EPDM/spiral yarn/EPDM	1.55	225	6.21	900	118
3245T	CR/fabric/CR	0.59	85	6.21	900	118
3658C (C5C)	CR/fabric+steel braid/NBR+PET braid	10.34 to 20.68	1500 to 3000	41.37 to 82.74	6000 to 12000	119
4657AB (TR500)	NBR/steel braid/rubber+PET braid	3.45	500	13.79	2000	119
3658E (C5E)	NBR/fabric+steel braid/NBR+PET braid	5.17 to 10.34	750 to 1500	20.68 to 41.37	3000 to 6000	120
4657DT (MegaTech™ 1000)	CPE/steel braid/rubber+PET braid	6.89	1000	27.58	4000	120
7752 (C14)	PTFE/stainless steel braid	6.89 to 10.34	1000 to 1500	27.58 to 41.37	4000 to 6000	121
3276	EPDM/fabric plies/EPDM	-0.088 to 0.34	-12.8 to 50	2.41	350	121
4327 (NABT)	Nylon/nylon fiber/nylon	1.03	150	4.41 to 7.72	640 to 1120	122



Description	Gates Spec	Temperature Range		Fahrenheit Temperature Range - Proportional Scale												Page		
		°C	°F	-70	-65	-51	40	<- Min Max->	200	212	250	257	275	302	347		400	450
Coolant - Straight																		
Standard coolant hose	4175EC (75W)	-40 to +125	-40 to +257															18
Premium EPDM	4178	-40 to +125	-40 to +257															19
Premium EPDM, aramid	4175SC (Blue Stripe™)	-40 to +125	-40 to +257															20
Higher temperature	4175HT (FleetRunner™)	-40 to +149	-40 to +300															21
Thick wall	4176HD (76W)	-40 to +125	-40 to +257															22
Light duty, metric	4272 (Flexcord Plus)	-40 to +135	-40 to +275															23
Oil resistant	4169A	-40 to +100	-40 to +212															24
Oil resistant, thicker wall	4176Y	-40 to +100	-40 to +212															25
Oil resistant, thickest wall	4179G (Green Stripe™)	-40 to +100	-40 to +212															26
Oil resistant cover only	4169G	-40 to +125	-40 to +257															27
Silicone	4171 (Durion™)	-54 to +175	-65 to +347															28
Silicone	4171 (Durion™ aramid)	-54 to +260	-65 to +500															28
Silicone	4171	-54 to +175	-65 to +347															29
Embedded wire helix	4685WG	-40 to +125	-40 to +257															30
Oil resistant w/ wire helix	4684CF	-40 to +125	-40 to +212															31
Silicone w/ wire helix	4684S	-57 to +175	-70 to +347															32
Convolutions, set lengths	4254 (Vulco-Flex™)	-40 to +125	-40 to +257															34
Convolutions, ECR tube	4284 (Vulco-Flex™)	-40 to +100	-40 to +212															35
Hump connector	4177W	-40 to +100	-40 to +212															33
Silicone hump connector	4177S	-46 to +177	-51 to +350															32
Coolant - Straight; Small ID																		
Standard heater hose	4230T	-40 to +125	-40 to +257															38
Light duty	3270 (Safety Stripe™)	-40 to +125	-40 to +257															38
Wiper, overflow tube	4040A	-40 to +125	-40 to +257															39
Wiper, overflow hose	4251D	-40 to +125	-40 to +257															39
Premium, with blue stripe	4230SB (Blue Stripe™)	-40 to +150	-40 to +302															40
Premium, with no stripe	4230RK	-40 to +150	-40 to +302															40
Premium, with red stripe	4230RS (Red Stripe™)	-40 to +150	-40 to +302															40
Thick wall, aramid	3269S (Green Stripe™)	-40 to +135	-40 to +275															41
Metric sizes	3230 (EPDM)	-46 to +100	-51 to +212															41
Oil resistant	4230S	-40 to +100	-40 to +212															42
Silicone	3230 / 3231 (Europe)	-54 to +177	-65 to +350															42
Silicone tubing	4040T	-40 to +204	-40 to +400															43
Coolant - Formed																		
Standard curved hose	4280MH	-40 to +125	-40 to +257															48
Non-ECR EPDM	4280GN	-40 to +125	-40 to +257															49
Higher pressure, aramid	4276KR	-40 to +125	-40 to +257															50
High-fatigue resistance	4256HY	-40 to +125	-40 to +257															51
Premium EPDM, aramid	4256SB (Blue Stripe™)	-40 to +125	-40 to +257															52
Higher temp. p-EPDM	4256LS	-40 to +150	-40 to +302															53
SCR Hose																		
DEF tank fill / vent	4217IS	-40 to +125	-40 to +257															86
DEF tank fill / vent	4256PC	-40 to +150	-40 to +302															87
Heated DEF line	4202 (Nylon Hotline™)	-40 to +125	-40 to +257															89
Heated DEF line	4202 (EPDM Hotline™)	-40 to +150	-40 to +302															89
Heated DEF line	4401 (Heat Weave™)	-40 to +125	-40 to +257															91
Exhaust																		
Marine wet exhaust	3137ME	-40 to +125	-40 to +257															92
Wet exhaust w/ helix	4686ME	-40 to +125	-40 to +257															93
Oil resistant w/ wire helix	4684CF	-40 to +125	-40 to +212															94
Silicone tubing	4040T	-40 to +204	-40 to +400															95
Inlet Air - Straight																		
(Use a coolant hose)	Connector	-57 to +260	-70 to +500															-
Duct w/ thin wall, helix	7768	-40 to +107	-40 to +225															98
Oil resistant w/ helix	4663A (63SB)	-40 to +121	-40 to +250															99
Thicker wall w/ helix	4663J (163SB)	-40 to +121	-40 to +250															100
Thick wall w/ helix	4663G	-40 to +125	-40 to +257															101
Inlet Air - Formed																		
Air cleaner hose	4289E	-40 to +135	-40 to +275															102
Oil resistant	4289N	-40 to +100	-40 to +212															104
Turbo Air - Straight																		
Silicone CAC connector	4171H	-40 to +288	-40 to +450															106
Hump hose connector	4177W (Green Stripe™)	-40 to +100	-40 to +212															107
Silicone hump connector	4177S	-46 to +177	-51 to +350															108
Hump & ring connector	4177	-46 to +260	-51 to +500															109
Turbo Air - Formed																		
Cold side CAC	4256NP	-40 to +125	-40 to +257															111
Fatigue resistant CAC	4256PM/HY	-40 to +125	-40 to +257															111
Oil resistant CAC	4278AA	-40 to +105	-40 to +221															111
Heat & oil resistant CAC	HM6060	-35 to +150	-31 to +302															112

Celsius Temperature Range - Proportional Scale											
-57	-54	-46	40	<- Min Max->	93	100	121	125	135	150	260

■ = available
 ■ = peak temperature for certain applications



Description	Gates Spec	Temperature Range		Fahrenheit Temperature Range - Proportional Range												Page		
		°C	°F	-10	65	51	-40	<- Min Max->	200	212	250	257	275	302	347		400	450
Fuel - Straight																		
Standard fuel/oil hose	4219G / 4219XL	-40 to +125	-40 to +257															
Metric sizes	3225ST	-35 to +125	-31 to +257															
Metric w/ textile cover	4324	-40 to +100	-40 to +212															
Lower fuel permeation	4219D	-40 to +135	-40 to +275															
Higher pressure	3284AC / 3284A (RLA 30R2)	-40 to +100	-40 to +212															
Low permeation barrier	4219BG (Barricade™)	-40 to +125	-40 to +257															
Barrier, fuel injection	4219BF (Barricade™ Fuel Injection)	-40 to +150	-40 to +302															
Diesel / biodiesel fuel injection	4219BD	-40 to +150	-40 to +302															
Nylon tubing for diesel	4327DT	-40 to +93	-40 to +200															
Submersible (in-tank)	4219	-40 to +150	-40 to +302															
Marine fuel and oil hose	4219M	-40 to +100	-40 to +212															
Marine outdoor fuel line	4219N	-40 to +121	-40 to +250															
Marine barrier fuel hose	4219BM (Barricade™ Marine)	-20 to +100	-4 to +212															
Marine high pressure	3658F (C5M)	-20 to +100	-4 to +212															
Fuel filler w/ wire helix	4663K	-40 to +100	-40 to +212															
Fuel - Formed																		
Biodiesel fill and vent	4278BD	-40 to +100	-40 to +212															
Oil - Straight																		
Fiber braid reinforced	3319HT (GTH)	-40 to +135	-40 to +275															
Two fiber braids	3319CA (G3H)	-40 to +135	-40 to +275															
Transmission oil cooler	4219HT	-40 to +135	-40 to +275															
High temperature w/ wire	3658D (C5D)	-40 to +150	-40 to +302															
High temp. and pressure	3658BC (C5C XH)	-40 to +150	-40 to +302															
High temp. true bore	4319 (MegaTech™ LOC)	-40 to +150	-40 to +302															
High temperature w/ wire	4657AM (MegaTech™ 250)	-40 to +150	-40 to +302															
High temp., wire, large ID	4657DT (MegaTech™ 500)	-40 to +150	-40 to +302															
High temp. and pressure	4657PS (MegaTech™ 3000)	-40 to +150	-40 to +302															
High pressure large ID	4657JT (MegaTech™ II)	-40 to +150	-40 to +302															
High pressure true bore	4657TB (MegaTech™ G5TB)	-40 to +150	-40 to +302															
Power Steering - Straight																		
Pressure line	3317LE (PS188)	-40 to +150	-40 to +302															
Power steering pressure	3317AB (MegaTech™ HVE)	-40 to +150	-40 to +302															
Return line	3283SA	-40 to +135	-40 to +275															
High temp return	3283LF	-40 to +150	-40 to +302															
Oil - Formed																		
Standard oil fill / suction	4278CN	-40 to +125	-40 to +257															
Higher pressure	4278OB	-40 to +125	-40 to +257															
Power Steering - Formed																		
Higher temperature	4278SS	-40 to +150	-40 to +302															
A/C Refrigerant																		
Air Conditioning hose	3353 (PolarSeal™)	-30 to +125	-22 to +257															
Air Conditioning - thin wall	3353 (PolarSeal™ II)	-30 to +125	-22 to +257															
Brake - Straight																		
Standard air brake	3245E	-40 to +100	-40 to +212															
Arctic air brake	3245T	-54 to +100	-65 to +212															
Higher pressure	3658C (C5C)	-40 to +100	-40 to +212															
Higher temperature	4657AB (TR500)	-40 to +121	-40 to +250															
Higher pressure, temp.	3658E (C5E)	-40 to +121	-40 to +250															
Higher pressure, temp.	4657DT (MegaTech™ 1000)	-40 to +150	-40 to +302															
High temperature	7752 (C14)	-54 to +232	-65 to +450															
Light duty	3276	-40 to +121	-40 to +250															
Nylon air brake tubing	4327 (NABT)	-40 to +93	-40 to +200															

Celsius Temperature Rate - Proportional Scale											
57	54	46	40	<- Min Max->	93	100	121	125	135	150	260

= available
 = peak temperature for certain applications

INTRODUCTION

Gates Engine Hose Design Guide provides detailed information to help you select the right hoses for your engine applications.

Included in this section is a molded hose design guide that helps you determine those made-to-order products for applications where standard engine products cannot be used.

Use this manual to select the right engine hose for your application and economical in terms of design and availability. Contact your local Gates Account Manager for complete stocking and pricing information on any standard hose you select. He or she can also supply you with pricing and delivery schedules for special made-to-order products.

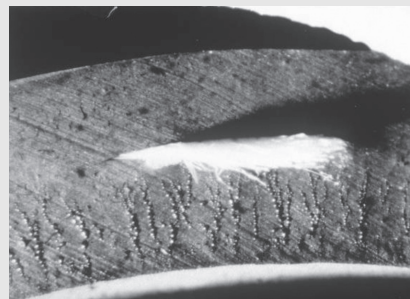
Common Hose Tube and Cover Compounds

Chemical Name	Poly-Chloroprene	Acrylonitrile & Butadiene	Chlorosulfonated Polyethylene	Ethylene Propylene Diene	Chlorinated Polyethylene	Fluoro-elastomer	Polyamide Resins	Silicone
Common Name or Trade Names	Neoprene*	Nitrile Buna-N	Hypalon*	EDPM	CPE	Viton* Fluorel †	Nylon	Silicone
ASTM	CR	NBR	CSM	EDPM	CM	FKM	PA	VMQ
Physical Strength	Good	Good	Good to Excellent	Good	Good	Fair	Good	Fair
RESISTANCE TO: Abrasion	Good to Excellent	Fair to Good	Good to Excellent	Good	Good	Good	Good	Fair
Weather & Ozone	Good to Excellent	Poor	Excellent	Excellent	Good	Excellent	Excellent	Excellent
Gaseous Permeation	Good	Good to Excellent	Good to Excellent	Fair to Good	Good	Good	Excellent	Fair
Petroleum Oils	Excellent	Excellent	Good to Excellent	Poor	Good	Excellent	Excellent	Poor
Commercial Gasolines	Fair to Good	Excellent	Fair	Poor	Fair	Excellent	Excellent	Poor
High Temperatures	Good to Excellent	Good to Excellent	Good to Excellent	Excellent	Excellent	Excellent	Good	Excellent
Low Temperatures	Fair to Good	Fair to Good	Fair	Fair to Good	Good	Good	Excellent	Excellent

*Registered Trademark of DuPont. † Registered trademark of 3M.

WHAT IS ELECTROCHEMICAL RESISTANCE (ECR)?

Electrochemical degradation was first identified by Gates in 1989 as a root cause of premature coolant hose failure. An electrochemical cell comprised of the metal stem, hose, and coolant together forms a kind of battery current which can degrade rubber. No external electric current is needed. Typically, cracks form in the tube area closest to stem, leading to failure. The industry has since adopted a standard test method, SAE J1684, developed by Gates to quantify the **electrochemical resistance** of a hose. The SAE J20 specification denotes electrochemically resistant hose with an "EC" before any class D1, D2 or D3 callout.





GENERAL DESIGN STEPS FOR HOSE

Step 1: Determine the STAMP requirements

Prior to designing the part, you'll need to know the **Size, Temperature, Application, Material** construction, and **Pressure (STAMP)**.

Step 2: Determine the design

Use the **STAMP** information to select the best hose solution. The desired hose **Material** construction (see the Material Construction table) is based on **Pressure** and bend radius requirements. Use a straight hose if possible, as they generally are the least expensive solution. Formed hoses are used to achieve the tightest bend radii (see the Minimum Bend Radius section). Find the **Application** in the Keyword Index (page 156-157) or turn to the appropriate application section. Choose the hose and confirm the **Temperature** range is appropriate using the quick guide tables on pages 2-9 or spec sheets. Find the **Size** needed and confirm the **Pressure** (burst or vacuum) is adequate. Keep in mind the working pressure is only a guideline based on typical application severity.

Step 3: Draw or specify the hose

Stocked items do not require a drawing, but cut lengths of straight hose are usually drawn, and made-to-order formed hoses are always drawn. Drawings should be identified with a unique part number and should contain at least a material specification and dimensions to define the hose. For straight hose, the required dimensions are hose inside diameter and hose length. For formed hose, the layout dimensions are also required (see Formed Hose Layout section). Other information on the drawing may include testing requirements, tolerances (see Tolerance section), application data, or cleanliness (see Cleanliness section). Drawing or specification requirements beyond the standard specification may be more costly or may not be accepted.

Step 4: Determine the feasibility

Send the drawing to your Gates Account Manager or Gates Product Application contact to confirm the material callout is the most appropriate and the design has no manufacturing concerns.

Step 5: Validate the design

It is recommended to test the parts in the application well before the start of production. Testing is particularly important if the failure of the parts could cause a safety issue or cause other damage.

MATERIAL CONSTRUCTION

Construction Type	Pressure	Bend Radius	Advantages	Disadvantages
Formed hose	Low (to 0.5 KPa or 75psi)	Very Small (~1 x Hose Diameter)	Tightest bend routing capability.	Limited lengths, setup cost.
Bent pipe with hose connectors	Low (to 0.5 KPa or 75psi)	Small (~2x Hose Diameter)	Long lengths require less support. Withstands higher vacuum. Can have brackets and ports.	Potential leak points. Limitations on bend capability. Stress at connectors.
Straight hose length	Low to Medium (to 2 KPa or 300psi)	Large (~10x Hose Diameter)	Low cost, easy installation.	May require support to avoid interference or excessive movement.
Wire helix embedded	Low to Medium (to 2 KPa or 300psi)	Small (~2x Hose Diameter)	For high vacuum and tighter bend radius	Higher Cost
Wire braid reinforced	High (to 20 KPa or 3000psi)	Medium (~5x Hose Diameter)	Flexible with high pressure capability	Higher Cost

FORMED HOSE LAYOUT

The best way to dimension a hose is by using X, Y, and Z coordinates of each theoretical bend intersection point (not tangency points) as in the following example. An XYZ chart is also a very good way to specify the hose. The chart follows the "right hand rule" (i.e. if X is positive to the right, and Y is positive up, then Z is positive toward you).

Another method of specifying a formed hose is by dimensions of arms (or straights), angles, and twists. This can be more difficult because each arm (or straight) length and each angle must be dimensioned in a true (flat) view.

Tolerancing layout dimensions is not advisable since dimensions that span more than one arm length should be reference only (see Tolerances section).

The drawing shows a hose layout with two main sections. The top section starts with a circular end at point F (diameter 1.90), goes through point E, then a bend at D, then a straight section to point C, then a bend at B (labeled 'TRANSITION DIAMETER IN BEND B'), and ends at point A. Dimensions include a vertical distance of 1.90 from F to E, a horizontal distance of 5.33 from F to B, and a vertical distance of 3.87±.25 from B to A. Bend radii are 2.00 at B and 45° at E. The bottom section starts at point F (diameter 1.75±.03), goes through point E, then a bend at D, then a straight section to point C, then a bend at B, and ends at point A. Dimensions include a vertical distance of 11.14 from F to A, a horizontal distance of 6.82 from F to A, and a vertical distance of 5.33 from C to A. Bend radii are 2.00 at B and 45° at E. Wall thicknesses are .25 and .17.

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JLGI 1001001812

Pt	X	Y	Z	Radius	Angle
A	0.000	0.000	0.000		
B	0.000	3.870	0.000	2.000	90
C	3.440	3.870	3.540	2.000	37
D	5.330	1.900	5.430	2.000	38
E	6.820	1.900	6.820	2.000	45
F	6.820	1.900	11.140		

Centerline = 17.445 in

NOTES:

1. MATERIAL: SAE 20R4 EC CLASS D1.
2. UNSPECIFIED TOLERANCES PER SAE J20.
3. IDENTIFY WITH PART NUMBER ON THE HOSE OD.
4. HOSE SHALL NOT COLLAPSE UNDER 7kPa AT 100°C. SPRING INSERT PERMITTED.
5. HOSE SHALL BE VISIBLY CLEAN.

00	GP	PROTOTYPE RELEASE	30JAN14
REV	BY	GATES REVISION	DATE

THE GATES RUBBER CO.
DENVER, COLORADO, USA

DRAWING UNITS ARE IN INCHES

MATERIAL: (SEE NOTES)
CUSTOMER:

PART #: 1234-5678

TITLE: COOLANT HOSE, LOWER RADIATOR
3RD ANGLE PROJECTION (DO NOT SCALE DRAWING)



TOLERANCES

Hose Length Tolerance

Length mm (inch)	Formed Hose Arm Length Tolerance mm (inch)	Straight Hose Length Tolerance mm (inch)
Up to 300 (12)	±6.4 (±0.25)	±3.0 (±0.12)
To 610 (24)	±7.2 (±0.28)	±4.8 (±0.19)
To 910 (36)	±9.7 (±0.38)	±6.4 (±0.25)
To 1220 (48)	±9.7 (±0.38)	±9.5 (±0.38)
To 1830 (72)	±15.9 (±0.63)	±12.7 (±0.50)
Over 1830 (72)	±2% of length	±1% of length

End Squareness Tolerance

Hose ID mm (inch)	Standard Tolerance mm (inch)	Precision Tolerance mm (inch)
Less than 25.4 (1.00)	3.75 (0.15)	2.54 (0.10)
25.4 (1.00) and over	15% of ID	10% of ID

Formed hoses may distort during shipping and handling, so layout dimensions are not measured directly. Instead, the hose is supported with the ends held in their designed position using a jig or template, and the actual hose OD contour should be within 9.6mm (0.375”) of the theoretical contour. Length tolerances may be applied along each arm length only. They do not apply to dimensions covering more than one arm length. Layout dimensions only establish the theoretical contour and have no tolerance. See SAE J2370 for guidance in applying geometric tolerancing to formed hoses.

CLEANLINESS

Hoses are supplied as “visibly clean”. Certain applications such as fuel, oil, or air may require increased cleanliness. In general, engine hose cleanliness is measured by sloshing solvent in the hose, filtering the solvent, and weighing the impurities, as well as measuring the largest particle dimension. Wire braid reinforced hose cleanliness is inspected by suspending the impurities in fluid and measured by a laser particle counter. Typical cleanliness levels are shown below.

Construction	Standard Cleanliness	Increased Cleanliness
Wire Braid Hose	Visibly clean	ISO 4406 17/14 500µ max. particle size Max. 110mg/m ² of inside surface area
Formed or Hump Hose	2500µ max. particle size (or 1200µ when excluding fibers and soft particles) Max. 110mg/m ² of inside surface area	800µ max. particle size (or 500µ when excluding fibers and soft particles) Max. 70mg/m ² of inside surface area

FORMED HOSE WALL THICKNESS AND VACUUM PERFORMANCE

Most formed hose types are only available in one wall thickness as per their specification. However, formed hose with no reinforcing layer are available in various thicknesses. The table below is a guide for estimating the vacuum performance of a formed hose based on wall thickness.

Hose ID mm (inch)	Wall Thickness mm (inch)											
	5.08	(0.20)	6.35	(0.25)	7.37	(0.29)	8.00	(0.32)	8.76	(0.35)	9.53	(0.38)
	Vacuum kPa (inches of water)											
31.8 (1.25)	29.9	(120)	37.3	(150)	43.5	(175)	49.8	(200)	56	(225)		
38.1 (1.5)	18.7	(75)	22.4	(90)	27.4	(110)	29.9	(120)	33.6	(135)	36.1	(145)
44.5 (1.75)	8.5	(34)	13.5	(54.4)	16.9	(68)	19.9	(80)	22.4	(90)	27.4	(110)
50.8 (2)	5.1	(20.4)	8.5	(34)	11.8	(47.6)	15.2	(61.2)	19.9	(80)	24.9	(100)
57.2 (2.25)	3.4	(13.6)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)	18.7	(75)	22.4	(90)
63.5 (2.5)	3.4	(13.6)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)	16.9	(68)	19.9	(80)
69.9 (2.75)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	10.2	(40.8)	15.2	(61.2)	18.7	(75)
76.2 (3)	1.7	(6.8)	3.4	(13.6)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)	16.9	(68)
82.6 (3.25)	1.7	(6.8)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)
88.9 (3.5)	1.7	(6.8)	1.7	(6.8)	5.1	(20.4)	6.8	(27.2)	8.5	(34)	11.8	(47.6)
95.3 (3.75)			1.7	(6.8)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	10.2	(40.8)
101.6 (4)			1.7	(6.8)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	8.5	(34)

These values assume a straight length of hose at a temperature of 82C (180F) degrees. Complex shapes or long I.D. expansions may reduce the vacuum resistance by half, whereas short elbow hoses can double the vacuum. If a vacuum requirement can not be met with a thicker wall, then add a note to the drawing that a spring insert is required.

For unreinforced hose, the default wall tolerance is ± 1.3 mm (± 0.05 in.). Wall tolerance increases to ± 1.6 mm (± 0.06 in) for enlarged diameter ends up to 50% or when there is only 25 to 50mm (1.0 to 2.0 in.) of straight length on either end of the hose. Wall tolerance increases to ± 2.0 mm (± 0.08 in) on enlarged diameter ends over 50% or when there is less than 25 mm (1.0 in) of straight length on either end of the hose. The thickness in the body of the hose can be expected to vary up to $\pm 66\%$ in and adjacent to severe bends.

When in doubt, the wall thickness should be confirmed with Gates Product Application Engineers.

MINIMUM BEND RADIUS GUIDELINES

Curved Hose

For radiator, and heater hoses:

$$R = [(B \div 180) + .5] \times D$$

For fuel and oil hoses:

$$R = [(B \div 180) + .5] \times D \times 1.25$$

For air intake hoses:

$$R = [(B \div 360) + .5] \times D$$

For turbo air hoses:

$$R = [(B \div 180) + .5] \times D \times 2$$

Straight Hose

For radiator, and heater hoses:

$$R = 10 \times \text{Hose OD}$$

For fuel and oil hoses:

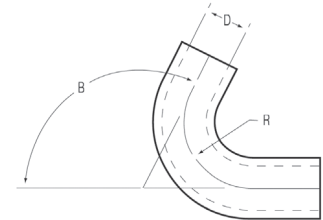
$$R = 7 \times \text{Hose OD}$$

For wire reinforced hoses*:

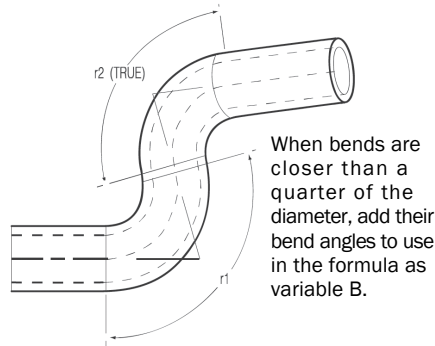
$$R = 4 \times \text{Hose OD}$$

*Call Gates for hoses > 3" ID or specific hose types

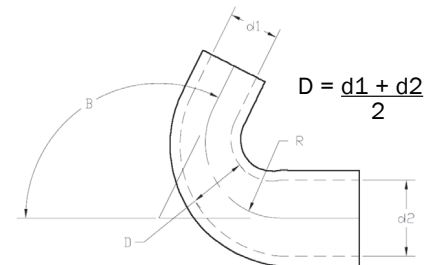
B = Bend angle in degrees
R = Minimum centerline bend radius
D = Inside diameter of hose



Normal



Back-to-back Bends



Blended ID Transition

COST REDUCTION CONSIDERATIONS

Curved hose

- > Minimize the number of bends.
- > Avoid very sharp bends. (Stay above minimum bend radius guidelines)
- > Avoid long I.D. expansions.
- > Blend ID transitions into a nearby bend. (See minimum bend radius guidelines).
- > Avoid costly testing requirements beyond those covered by the hose material callouts.

Straight hose

- > Do not over-specify requirements.
- > Buy bulk or standard lengths.
- > Use plain ends on wire embedded hose instead of straight ends (no wire).
- > Specify additional printing or marking only when necessary.
- > Contact Gates Application Engineering for other hose options.

DEVIATION REDUCTION

- > Let Gates Application Engineering review the drawing before finalizing drawing.
- > Specify standard specification tolerances.
- > Double-check material callouts for applicability.
- > Consult Gates Application Engineering before adding new notes and requirements.
- > Make sure curved hose routings are completely dimensioned.
- > For curved hose, any minimum straight length requirement for clamping area must be at least 1/4" (6.4mm) less than the nominal straight length.
- > Small ID hoses typically specify OD instead of wall thickness for ease of inspection.



DRIVEN BY POSSIBILITY™

KEEP YOUR ENGINES RUNNING

GATES® COOLANT HOSE YOUR EQUIPMENT RELIES ON THE PERFORMANCE OF YOUR ENGINE. YOUR ENGINE RELIES ON THE PERFORMANCE OF YOUR COOLANT HOSE. WHEN YOU NEED TO DESIGN OR IMPROVE CRITICAL PIECES OF YOUR COMPLEX MACHINERY, TRUST GATES TO DELIVER HIGH PERFORMANCE SOLUTIONS WITH OUR CUSTOMIZED COOLANT HOSES. WE'LL MANUFACTURE A TAILOR-MADE COOLANT HOSE FOR YOUR INDUSTRIAL, AGRICULTURAL, RECREATIONAL, AND HEAVY-DUTY AUTOMOTIVE APPLICATIONS, SO YOU CAN KEEP YOUR ENGINES RUNNING WITH THE POWER OF GATES.

TOMIZED COOLANT HOSES. WE'LL MANUFACTURE A TAILOR-MADE COOLANT HOSE FOR YOUR INDUSTRIAL, AGRICULTURAL, RECREATIONAL, AND HEAVY-DUTY AUTOMOTIVE APPLICATIONS, SO YOU CAN KEEP YOUR ENGINES RUNNING WITH THE POWER OF GATES.





COOLANT HOSES

Larger Diameters, Used Primarily for Short Connectors, Wrapped Construction

4175EC (75W).....	Standard EPDM hose	18
4178 (Green Stripe™).....	Premium performance with electrochemically resistant tube.....	19
4175SC (Blue Stripe™).....	Premium performance with electrochemically resistant tube and higher pressure.....	20
4175HT (FleetRunner™).....	Higher temperature with electrochemically resistant tube	21
4176HD (76W).....	Thicker wall	22
4169A	Oil resistant.....	24
4176Y	Oil resistant and thicker wall	25
4179G (Green Stripe™).....	Oil resistant and more reinforcing plies	26
4169G	Oil resistant cover, EPDM tube for higher temperature	27
4171 and 4171 (Durion™).....	High temperature silicone.....	28, 29
4177S	Silicone hump hose connector	32
4177W	Hump hose connectors	33

Also see:

3137ME.....	Marine wet exhaust per SAE J2006 R1	94
Steel or aluminum tube assemblies in the Air Section		110

Larger Diameters with Embedded Wire Helix for Flexibility over Longer Lengths, and Vacuum Resistance

4685WG.....	Standard EPDM wire helix reinforcement.....	30
4684CF	Oil resistant with wire helix reinforcement.....	31
4684S	High temperature silicone with wire helix reinforcement	32

Also see:

4686ME	Marine wet exhaust per SAE J2006 R2	95
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Smaller Diameter Hoses in Long Lengths, Extruded Construction

4230T / 3269.....	Standard EPDM heater hose	38
3270 (Safety Stripe™).....	Lighter duty, includes 6.4mm (1/4") size for radiator overflow.....	38
4230SB (Blue Stripe™) / RS / RK.....	Premium performance, with blue stripe, red stripe, or no stripe	40
3269S (Green Stripe™).....	Thicker wall, with green stripe	41
3230 (EPDM).....	European market per DIN standard 73411.....	41
4272 (FlexCord Plus).....	European market per DIN standard 73422, available up to 50mm (2") diameter	23
4230S / 4230SS.....	Oil resistant.....	42
3230 / 3231 (Europe)	High temperature silicone.....	42
4040A.....	Very small diameters for no-pressure coolant overflow and drain	39
4251D	Very small diameters for coolant overflow and drain	39
4040T.....	Very small diameters for no-pressure coolant overflow and drain, high temperature silicone	43

Also see:

4171	High temperature silicone, wrapped construction	28, 29
4219M, 4219N.....	Coolant overflow and drain, marine fire rating	66
Steel or aluminum tube assemblies in the AIR Section.....		110

Formed Hoses, Extruded Construction

4280MH.....	Standard EPDM formed hose	48
4280GN	Lighter duty, not electrochemically resistant.....	49
4276KR	Higher pressure, aramid reinforcement.....	50
4256HY	High fatigue resistance	51
4256SB.....	Premium performance	52
4256LS	Higher temperature, p-EPDM.....	53

High temperature silicone available

Also see:

4254, 4284 Vulco-Flex™	Convuluted hose with internal wire helix and straight cuffs.....	34, 35
Steel or aluminum tube assemblies in the AIR Section.....		110

Formed Hoses, Standard Shapes

4261 / 4275 (Europe).....	Standard EPDM formed hose.....	44
4278 (Europe).....	Standard EPDM formed hose, European market	45
4281	High temperature silicone elbows	46
4177	High temperature silicone elbows	47

High Pressure Hydraulic Hose Compatible With Coolant

3319HT (GTH).....	High pressure hose per SAE 100R6, commonly used with couplings.....	74
3319CA (G3H).....	High pressure hose per SAE 100R3, commonly used with couplings.....	74
4657AM (MegaTech™ 250).....	Steel braid, hard wall, used with couplings	77



Coolant 

Fuel 

Oil 

SCR 

Exhaust 

Air 

Refrigerant 

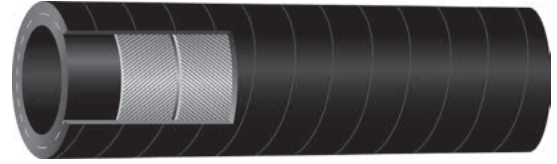
Brake 

Accessories 

Belts 

4175EC (75W)

STANDARD COOLANT HOSE



Relative Cost ●●●○○○

Applications Engine coolant hose such as radiator and heater hoses or connectors. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.

Standards SAE 20R1 EC Class D2, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

Construction EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

Packaging Bulk lengths are 3 foot sticks in a box, or 50 foot coil in a box. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID	OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number	
	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	50 ft. Length	
12.7 ±0.8	1/2 ±0.03	22.6	0.89	0.72	105	2.93	425	33.8	10	127	5	0.39	0.27	***	***
15.9	5/8	25.9	1.02	0.66	95	2.59	375	27.0	8	203	8	0.45	0.30	***	***
19.1	3/4	29.7	1.17	0.55	80	2.24	325	27.0	8	152	6	0.51	0.34	4175-0005	4175-0855
22.2	7/8	33.0	1.30	0.52	75	2.07	300	23.6	7	178	7	0.59	0.40	4175-0006	4175-0856
25.4	1	36.1	1.42	0.95	138	3.79	550	23.6	7	203	8	0.66	0.44	4175-0007	4175-0857
28.6	1 1/8	39.4	1.55	0.86	125	3.45	500	20.3	6	203	8	0.74	0.50	4175-0009	4175-0859
31.8	1 1/4	42.4	1.67	0.69	100	2.76	400	16.9	5	305	12	0.78	0.53	4175-0011	4175-0861
34.9	1 3/8	45.7	1.80	0.69	100	2.76	400	13.5	4	305	12	0.86	0.58	4175-0013	4175-0863***
38.1	1 1/2	48.8	1.92	0.69	100	2.76	400	10.1	3	305	12	0.93	0.62	4175-0015	4175-0865
41.3	1 5/8	52.1	2.05	0.61	88	2.41	350	6.8	2	381	15	0.95	0.64	4175-0017	4175-0867
44.5	1 3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	381	15	0.99	0.67	4175-0019	4175-0869
47.6	1 7/8	58.4	2.30	0.52	75	2.07	300	*	*	**	**	1.03	0.70	4175-0021	4175-0871
50.8 ±1.6	2 ±0.06	61.5	2.42	0.43	62	1.72	250	*	*	**	**	1.13	0.76	4175-0022	4175-0872
54.0	2 1/8	64.8	2.55	0.43	62	1.72	250	*	*	**	**	1.18	0.79	4175-0023	4175-0873***
57.2	2 1/4	67.8	2.67	0.43	62	1.72	250	*	*	**	**	1.31	0.88	4175-0024	4175-0874
60.3	2 3/8	71.1	2.80	0.43	62	1.72	250	*	*	**	**	1.36	0.92	4175-0025	4175-0875
63.5	2 1/2	74.2	2.92	0.43	62	1.72	250	*	*	**	**	1.47	0.99	4175-0026	4175-0876
66.7	2 5/8	77.5	3.05	0.43	62	1.72	250	*	*	**	**	1.51	1.02	4175-0027	4175-0877***
69.9	2 3/4	80.5	3.17	0.43	62	1.72	250	*	*	**	**	1.60	1.08	4175-0028	4175-0878
73.0	2 7/8	83.8	3.30	0.39	56	1.55	225	*	*	**	**	1.64	1.10	4175-0029	4175-0879***
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.76	1.18	4175-0030	4175-0880
82.6	3 1/4	92.5	3.64	0.26	38	1.03	150	*	*	**	**	1.77	1.19	4175-0032	***
88.9	3 1/2	99.6	3.92	0.12	18	0.52	75	*	*	**	**	1.96	1.32	4175-0033	4175-0883
95.3	3 3/4	105.2	4.14	0.11	16	0.46	66	*	*	**	**	2.02	1.36	4175-0035	***
101.6	4	112.3	4.42	0.08	12	0.34	50	*	*	**	**	2.24	1.51	4175-0036	4175-0886
114.3	4 1/2	125.0	4.92	0.08	12	0.34	50	*	*	**	**	2.52	1.70	4175-0039	4175-0889
127.0	5	137.7	5.42	0.08	12	0.34	50	*	*	**	**	2.79	1.88	***	4175-0839***
139.7	5 1/2	150.4	5.92	0.08	12	0.34	50	*	*	**	**	2.90	1.95	***	***
152.4	6	163.1	6.42	0.08	12	0.34	50	*	*	**	**	3.29	2.21	***	4175-0902***

* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

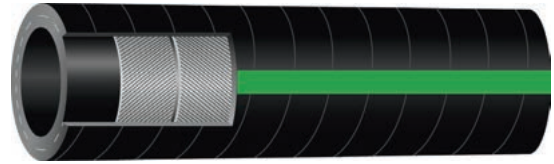
Brake

Accessories

Belts



4178 (GREEN STRIPE™)
PREMIUM COOLANT HOSE



Relative Cost ●●●○○○

Applications Premium engine coolant hose such as radiator hoses or connectors. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F) continuous and +150°C (+302°F) peak

Standards SAE 20R1 EC Class D1, except wall is 5.35±0.76mm (0.21±0.03 inch). Sizes 1/2", 3-1/8", 3-1/4", and 3-3/4" have the SAE 20R1 standard wall of 4.95±0.65mm (0.195±0.026 inch). Wall thickness excludes lap area.

Construction EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

Packaging Bulk lengths are straight pieces in a box. Custom lengths available with a minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

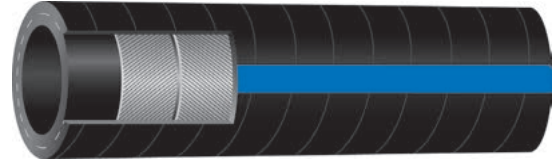
ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Inter-change Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length		1 m. Length
12.7 ±0.08	1/2 ±0.03	22.6	0.89	0.72	105	2.93	425	33.8	10	**	**	0.40	0.27	***		
19.1	3/4	29.8	1.17	0.55	80	2.24	325	27.0	8	**	**	0.52	0.35	4168-1712	24212	4168-8019
22.2	7/8	32.9	1.30	0.52	75	2.06	300	23.7	7	**	**	0.60	0.4	4168-1714	24214	4168-8022
25.4	1	36.1	1.42	0.52	75	2.07	300	23.7	7	**	**	0.65	0.44	4168-1716	24216	4168-8025
28.6	1 1/8	39.3	1.55	0.52	75	2.07	300	20.3	6	**	**	0.74	0.5	4168-1718	24218	4168-8029
31.8	1 1/4	42.5	1.67	0.47	68	1.90	275	16.9	5	**	**	0.79	0.53	4168-1720	24220	4168-8032
34.9	1 3/8	45.6	1.80	0.47	68	1.90	275	13.5	4	**	**	0.86	0.58	4168-1722	24222	4168-8035
38.1	1 1/2	48.8	1.92	0.43	62	1.72	250	10.1	3	**	**	0.92	0.62	4168-1724	24224	4168-8038
41.3	1 5/8	52.0	2.05	0.43	62	1.72	250	6.8	2	**	**	0.95	0.64	4168-1726	24226	4168-8041
44.5	1 3/4	55.2	2.17	0.39	56	1.55	225	3.4	1	**	**	1.00	0.67	4168-1728	24228	4168-8044
47.6	1 7/8	58.3	2.30	0.37	53	1.46	212	*	*	**	**	1.04	0.7	4168-1730	24230	4168-8048
50.8 ±1.6	2 ±0.06	61.5	2.42	0.34	50	1.38	200	*	*	**	**	1.19	0.8	4168-1732	24232	4168-8051
54.0	2 1/8	64.7	2.55	0.32	47	1.29	187	*	*	**	**	1.24	0.83	4168-1734	24234	4168-8054
57.2	2 1/4	67.9	2.67	0.30	44	1.21	175	*	*	**	**	1.32	0.89	4168-1736	24236	4168-8057
60.3	2 3/8	71.0	2.80	0.30	44	1.21	175	*	*	**	**	1.37	0.92	4168-1738	24238	4168-8060
63.5	2 1/2	74.2	2.92	0.26	38	1.03	150	*	*	**	**	1.47	0.99	4168-1740	24240	4168-8064
66.7	2 5/8	77.4	3.05	0.23	34	0.94	137	*	*	**	**	1.52	1.02	4168-1742	24242	4168-8067
69.9	2 3/4	80.6	3.17	0.21	31	0.86	125	*	*	**	**	1.58	1.06	4168-1744	24244	4168-8070
73.0	2 7/8	83.7	3.30	0.19	28	0.77	112	*	*	**	**	1.64	1.1	4168-1746	24246	4168-8073
76.2	3	86.9	3.42	0.17	25	0.69	100	*	*	**	**	1.76	1.18	4168-1748	24248	4168-8076
79.4	3 1/8	89.3	3.52	0.17	24	0.63	92	*	*	**	**	1.71	1.15	4168-1750	24250	
82.6	3 1/4	92.5	3.64	0.15	22	0.60	87	*	*	**	**	1.77	1.19	4168-1752	24252	4168-8083
88.9	3 1/2	99.6	3.92	0.12	18	0.52	75	*	*	**	**	1.96	1.32	4168-1756	24256	4168-8089
95.3	3 3/4	105.2	4.14	0.10	15	0.43	62	*	*	**	**	2.02	1.36	4168-1760	24260	
101.6	4	112.3	4.42	0.08	12	0.34	50	*	*	**	**	2.25	1.51	4168-1764	24264	4168-8102
114.3	4 1/2	125.0	4.92	0.08	12	0.34	50	*	*	**	**	2.53	1.7	4168-1772	24272	4168-8114

* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4175SC (BLUE STRIPE™)

PREMIUM COOLANT HOSE, HIGHER PRESSURE



Relative Cost ●●●○○○

Applications Premium engine coolant hose such as radiator hoses or connectors. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F) continuous and +150°C (+302°F) peak.

Standards SAE 20R1 EC Class D1, standard wall (except with higher burst). Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

Construction EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

Packaging Bulk lengths are 3 ft sticks packed 10 per box. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
22.2 ±0.08	7/8 ±0.03	33.0	1.30	0.52	75	2.06	300	23.6	7	**	**	0.60	0.40	***
25.4	1	36.0	1.42	0.95	138	3.79	550	23.6	7	**	**	0.65	0.44	***
28.6	1 1/8	39.4	1.55	0.86	125	3.45	500	20.3	6	**	**	0.74	0.50	***
31.8	1 1/4	42.4	1.67	0.69	100	2.76	400	16.9	5	**	**	0.78	0.53	4175-3701
38.1	1 1/2	49.6	1.95	0.69	100	2.76	400	10.1	3	**	**	0.93	0.62	4175-3702
41.3	1 5/8	52.1	2.05	0.61	88	2.41	350	6.8	2	**	**	0.95	0.64	4175-3703
44.5	1 3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	**	**	0.99	0.67	4175-3704
50.8 ±1.6	2 ±0.06	61.5	2.42	0.43	62	1.72	250	*	*	**	**	1.19	0.80	4175-3705
57.2	2 1/4	67.8	2.67	0.43	62	1.72	250	*	*	**	**	1.33	0.89	4175-3706
60.3	2 3/8	71.1	2.80	0.43	62	1.72	250	*	*	**	**	1.36	0.92	***
63.5	2 1/2	74.2	2.92	0.43	62	1.72	250	*	*	**	**	1.49	1.00	4175-3707
69.9	2 3/4	80.5	3.17	0.43	62	1.72	250	*	*	**	**	1.59	1.07	4175-3708
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.76	1.18	4175-3709
88.9	3 1/2	99.6	3.92	0.13	18.8	0.52	75	*	*	**	**	1.96	1.32	***
101.6	4	112.3	4.42	0.08	12	0.34	50	*	*	**	**	2.24	1.51	***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



4175HT (FLEETRANNER™)
HIGHER TEMPERATURE COOLANT HOSE



- Relative Cost** ●●●○○
- Applications** Engine coolant hose such as radiator hoses or connectors. Not for conveying fuel or oil.
- Temperature** -40°C to +150°C (-40°F to +302°F)
- Standards** SAE 20R1 EC Class D3, standard wall (except with higher burst). Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.
- Construction** p-EPDM tube, synthetic fabric reinforcement plies, green p-EPDM cover with wrapped appearance.
- Packaging** Bulk lengths are 3 foot sticks packed in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
22.2 ±0.08	7/8 ±0.03	33.0	1.30	1.03	150	4.14	600	23.6	7	**	**	0.58	0.39	4175-3190
25.4	1	36.1	1.42	1.03	150	4.14	600	23.6	7	**	**	0.61	0.41	4175-0583
28.6	1 1/8	39.4	1.55	1.03	150	4.14	600	20.3	6	**	**	0.68	0.46	4175-3191
31.8	1 1/4	42.4	1.67	1.03	150	4.14	600	16.9	5	**	**	0.71	0.48	4175-0584
34.9	1 3/8	45.7	1.80	1.03	150	4.14	600	13.5	4	**	**	0.79	0.53	4175-3192
38.1	1 1/2	48.8	1.92	1.03	150	4.14	600	10.1	3	**	**	0.85	0.57	4175-0585
41.3	1 5/8	52.1	2.05	1.03	150	4.14	600	6.8	2	**	**	0.92	0.62	4175-3193
44.5	1 3/4	54.6	2.15	1.03	150	4.14	600	3.4	1	**	**	0.98	0.66	4175-0586
47.6	1 7/8	58.4	2.30	1.03	150	4.14	600	*	*	**	**	1.00	0.67	4175-3194
50.8 ±1.6	2 ±0.06	61.5	2.42	1.03	150	4.14	600	*	*	**	**	1.09	0.73	4175-0587
57.2	2 1/4	66.8	2.63	0.86	125	3.45	500	*	*	**	**	1.22	0.82	4175-0588
60.3	2 3/8	70.1	2.76	0.86	125	3.45	500	*	*	**	**	1.25	0.84	4175-3195
63.5	2 1/2	73.7	2.90	0.86	125	3.45	500	*	*	**	**	1.35	0.91	4175-0589
69.9	2 3/4	79.5	3.13	0.86	125	3.45	500	*	*	**	**	1.47	0.99	4175-0590
76.2	3	86.9	3.42	0.86	125	3.45	500	*	*	**	**	1.58	1.06	4175-0591

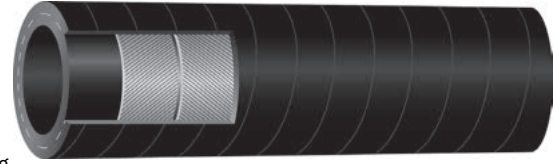
* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



4176HD (76W)

THICK WALL COOLANT HOSE



Relative Cost ●●●○○

Applications Engine coolant hose such as radiator and heater hoses or connectors. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40 °C to +125 °C (-40 °F to +257 °F) continuous for coolant, and 100 °C (212 °F) maximum for conveying air.

Standards SAE 20R1 Class D2, heavy wall. Wall thickness is 6.45±0.65mm (0.255±0.025 inch) excluding lap area.

Construction EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

Packaging Bulk lengths are 3 foot sticks in a box, or 50 foot coil in a box. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	50 ft. Length
19.1 ±0.8	3/4 ±0.03	32.3	1.27	0.86	125	3.45	500	50.7	15	152	6	0.72	0.49	4176-0005	4176-3374
22.2	7/8	35.6	1.40	1.21	175	4.83	700	50.7	15	178	7	0.72	0.49	4176-0006	4176-0856
25.4	1	38.6	1.52	1.21	175	4.83	700	33.8	10	203	8	0.82	0.55	4176-0007	4176-0857
28.6	1 1/8	41.9	1.65	1.21	175	4.83	700	33.8	10	203	8	0.89	0.60	4176-0009	4176-0859
31.8	1 1/4	45.0	1.77	0.86	125	3.45	500	33.8	10	305	12	0.98	0.66	4176-0011	4176-0861
34.9	1 3/8	48.3	1.90	0.77	112	3.10	450	33.8	10	305	12	1.05	0.71	4176-0013	4176-0863
38.1	1 1/2	51.3	2.02	0.77	112	3.10	450	33.8	10	305	12	1.13	0.76	4176-0015	4176-0865
41.3	1 5/8	54.6	2.15	0.73	106	2.93	425	23.7	7	356	14	1.20	0.81	4176-0017	4176-0867
44.5	1 3/4	57.7	2.27	0.69	100	2.76	400	16.9	5	381	15	1.27	0.85	4176-0019	4176-0869
47.6	1 7/8	61.0	2.40	0.65	94	2.59	375	13.5	4	**	**	1.36	0.92	4176-0021	4176-0871***
50.8 ±1.6	2 ±0.06	64.0	2.52	0.61	88	2.41	350	10.1	3	**	**	1.44	0.97	4176-0022	4176-0872
54.0	2 1/8	67.3	2.65	0.61	88	2.41	350	6.8	2	**	**	1.52	1.02	4176-0023	4176-0873
57.2	2 1/4	70.4	2.77	0.61	88	2.41	350	3.4	1	**	**	1.59	1.07	4176-0024	4176-0874
60.3	2 3/8	73.7	2.90	0.56	81	2.24	325	*	*	**	**	1.69	1.13	4176-0025	4176-0875***
63.5	2 1/2	76.7	3.02	0.52	75	2.07	300	*	*	**	**	1.76	1.18	4176-0026	4176-0876
66.7	2 5/8	80.0	3.15	0.48	69	1.90	275	*	*	**	**	1.84	1.24	4176-0027	4176-0877***
69.9	2 3/4	83.1	3.27	0.43	63	1.72	250	*	*	**	**	1.92	1.29	4176-0028	4176-0878
73.0	2 7/8	86.4	3.40	0.43	63	1.72	250	*	*	**	**	2.01	1.35	4176-0029	4176-0879***
76.2	3	89.4	3.52	0.43	63	1.72	250	*	*	**	**	2.07	1.39	4176-0030	4176-0880
82.6	3 1/4	95.8	3.77	0.39	56	1.55	225	*	*	**	**	2.39	1.61	4176-0032	
88.9	3 1/2	102.1	4.02	0.34	50	1.38	200	*	*	**	**	2.40	1.62	4176-0033	4176-0883
95.3	3 3/4	108.5	4.27	0.30	44	1.21	175	*	*	**	**	2.74	1.84	4176-0035	
101.6	4	114.8	4.52	0.26	38	1.03	150	*	*	**	**	2.72	1.83	4176-0036	4176-0886

* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake








Accessories

Belts

4272 (FLEXCORD PLUS)

**LIGHT DUTY METRIC COOLANT HOSE
(EUROPEAN MARKET ONLY)**



-  **Relative Cost** ●●○○○
-  **Applications** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.
-  **Temperature** -40°C to +135°C (-40°F to +275°F).
-  **Standards** SAE 20R4 Class D2 and DIN 73411 Class B1.
-  **Construction** EPDM tube, aramid knit reinforcement, EPDM cover.
-  **Packaging** Bulk lengths are 1 meter sticks in a box. Custom lengths available with minimum order quantity.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	kg/m	lbs/ft	1m Length
8	5/16	18	0.70	0.40	58	1.24	180	*	*	0.12	0.08	4272-10080
10	3/8	20	0.78	0.40	58	1.24	180	*	*	0.13	0.09	4272-10100
12	1/2	22	0.86	0.40	58	1.20	174	*	*	0.14	0.09	4272-10120
15	5/8	25	0.98	0.40	58	1.20	174	*	*	0.17	0.11	4272-10150
18	11/16	28	1.10	0.40	58	1.20	174	*	*	0.20	0.14	4272-10180
20	13/16	30	1.18	0.30	44	1.00	145	*	*	0.24	0.16	4272-10200
22	7/8	32	1.26	0.30	44	1.00	145	*	*	0.28	0.19	4272-10220
25	1	35	1.37	0.30	44	1.00	145	*	*	0.33	0.22	4272-10250
28	1 1/8	38	1.49	0.30	44	1.00	145	*	*	0.35	0.24	4272-10280
30	1 3/16	40	1.57	0.30	44	1.00	145	*	*	0.38	0.26	4272-10300
32	1 1/4	42	1.65	0.30	44	1.00	145	*	*	0.42	0.28	4272-10320
35	1 3/8	45	1.77	0.30	44	1.00	145	*	*	0.44	0.29	4272-10350
38	1 1/2	48	1.89	0.30	44	1.00	145	*	*	0.46	0.31	4272-10380
40	1 9/16	50	1.96	0.20	29	0.76	110	*	*	0.50	0.33	4272-10400
42	1 5/8	52	2.04	0.20	29	0.76	110	*	*	0.55	0.37	4272-10420
45	1 3/4	55	2.16	0.20	29	0.69	100	*	*	0.53	0.36	4272-10450
48	1 7/8	58	2.28	0.20	29	0.69	100	*	*	0.58	0.39	4272-10480
50	2	60	2.36	0.20	29	0.69	100	*	*	0.60	0.40	4272-10500

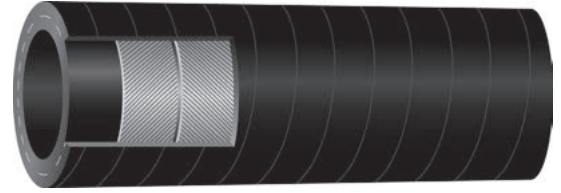
* No specification requirement

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



4169A

OIL-RESISTANT COOLANT HOSE



Relative Cost ●●●○○



Applications Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions.



Temperature -40 °C to +100 °C (-40 °F to +212 °F)



Standards SAE 20R1 Class B tube and Class C cover, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.



Construction NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.



Packaging Bulk lengths are 3 foot sticks in a box, or 10 foot coil in a box. Custom lengths or enlarged ends available with minimum order quantity.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	10 ft. Length
19.1 ±0.8	3/4 ±0.03	29.7	1.17	1.03	150	4.14	600	27.0	8	254	10	0.46	0.31	4169-0210	4169-0158***
22.2	7/8	33.0	1.30	1.03	150	4.14	600	23.6	7	279	11	0.61	0.41	4169-0220	4169-0156
25.4	1	36.1	1.42	0.93	135	3.79	550	23.6	7	305	12	0.68	0.46	4169-0224	4169-0157
28.6	1 1/8	39.4	1.55	0.93	135	3.45	500	20.3	6	330	13	0.77	0.52	4169-0240	4169-0159
31.8	1 1/4	42.4	1.67	0.93	135	2.76	400	16.9	5	356	14	0.81	0.55	4169-0246	4169-0161
34.9	1 3/8	45.7	1.80	0.69	100	2.76	400	13.5	4	635	25	0.88	0.59	4169-0260	4169-0163
38.1	1 1/2	48.8	1.92	0.69	100	2.76	400	10.1	3	762	30	0.96	0.65	4169-0270	4169-0165
41.3	1 5/8	52.1	2.05	0.59	85	2.41	350	6.8	2	**	**	1.01	0.68	4169-0280	4169-0167
44.5	1 3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	**	**	1.09	0.73	4169-0288	4169-0169
47.6	1 7/8	58.4	2.30	0.52	75	2.07	300	*	*	**	**	1.16	0.78	4169-0300	4169-0171
50.8 ±1.6	2 ±0.06	61.5	2.42	0.41	60	1.72	250	*	*	**	**	1.19	0.80	4169-0484	4169-0172
54.0	2 1/8	64.8	2.55	0.41	60	1.72	250	*	*	**	**	1.30	0.87	4169-0320	
57.2	2 1/4	67.8	2.67	0.41	60	1.72	250	*	*	**	**	1.34	0.90	4169-0491	4169-0174
60.3	2 3/8	71.1	2.80	0.41	60	1.72	250	*	*	**	**	1.41	0.95	4169-0340	4169-0175
63.5	2 1/2	74.2	2.92	0.41	60	1.72	250	*	*	**	**	1.48	1.00	4169-0345	4169-0176
66.7	2 5/8	77.5	3.05	0.41	60	1.72	250	*	*	**	**	1.56	1.05	4169-0360***	
69.9	2 3/4	80.5	3.17	0.41	60	1.72	250	*	*	**	**	1.63	1.10	4169-0362	4169-0178
73.0	2 7/8	83.8	3.30	0.38	55	1.55	225	*	*	**	**	1.70	1.14	4169-0376***	
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.74	1.17	4169-0383	4169-0180
82.6	3 1/4	93.2	3.67	0.24	35	1.03	150	*	*	**	**	1.89	1.27	4169-0402***	
88.9	3 1/2	99.6	3.92	0.13	19	0.52	75	*	*	**	**	2.02	1.36	4169-0420	4169-0183
101.6	4	112.3	4.42	0.07	10	0.34	50	*	*	**	**	2.31	1.55	4169-0425	4169-0186
114.3	4 1/2	125.0	4.92	0.07	10	0.34	50	*	*	**	**	2.57	1.73	4169-0433***	4169-0189***
127.0	5	137.7	5.42	0.07	10	0.34	50	*	*	**	**	2.84	1.91		4169-0192***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

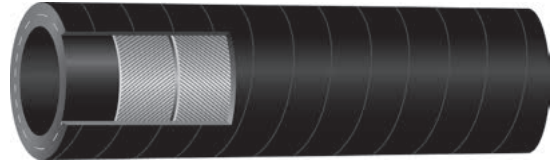
Brake

Accessories

Belts

4176Y

OIL-RESISTANT THICK-WALL COOLANT HOSE



Relative Cost ●●●○○



Applications Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions.



Temperature -40°C to +100°C (-40°F to +212°F)



Standards SAE 20R1 Class B tube and Class C cover, heavy wall. Wall thickness is 6.45±0.65mm (0.255±0.025 inch) excluding lap area.



Construction NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.



Packaging Bulk lengths are 3 foot sticks in a box, or 10 foot coil in a box. Custom lengths or enlarged ends available with minimum order quantity.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	10 ft. Length
25.4 ±0.08	1 ±0.03	39.4	1.55	0.95	138	3.79	550	40.6	12	254	10	0.93	0.63		4176-1803
28.6	1 1/8	42.7	1.68	0.95	138	3.79	550	33.8	10	279	11	1.03	0.69		4176-1806***
31.8	1 1/4	45.7	1.80	0.86	125	3.45	500	33.8	10	305	12	1.11	0.75		4176-1807
34.9	1 3/8	49.0	1.93	0.82	119	3.28	475	33.8	10	356	14	1.20	0.81		***
38.1	1 1/2	52.1	2.05	0.78	113	3.10	450	33.8	10	381	15	1.28	0.86		4176-1810
44.5	1 3/4	58.4	2.30	0.69	100	2.76	400	16.9	5	457	18	1.46	0.98	4176-0103***	4176-1789
50.8 ±1.6	2 ±0.06	64.8	2.55	0.60	88	2.41	350	10.1	3	**	**	1.64	1.10		4176-1812
57.2	2 1/4	71.1	2.80	0.60	88	2.41	350	3.4	1	**	**	1.82	1.22	4176-1879***	4176-1793
60.3	2 3/8	74.4	2.93	0.56	81	2.24	325	*	*	**	**	1.90	1.28		4176-1813***
63.5	2 1/2	77.5	3.05	0.52	75	2.07	300	*	*	**	**	2.00	1.34		4176-1814
66.7	2 5/8	80.8	3.18	0.47	69	1.90	275	*	*	**	**	2.08	1.40	4176-0132***	
69.9	2 3/4	83.8	3.30	0.43	63	1.72	250	*	*	**	**	2.17	1.46	4176-1823***	4176-1701***
76.2	3	90.2	3.55	0.43	63	1.72	250	*	*	**	**	2.35	1.58		4176-1816
88.9	3 1/2	102.9	4.05	0.34	50	1.38	200	*	*	**	**	2.70	1.82		4176-1826
101.6	4	115.6	4.55	0.26	38	1.03	150	*	*	**	**	3.05	2.05		4176-1830
114.3	4 1/2	128.3	5.05	0.21	30	0.83	120	*	*	**	**	3.31	2.23	4176-1917***	4176-1834***
127.0	5	141.0	5.55	0.19	28	0.76	110	*	*	**	**	3.76	2.53		4176-0150***

* No specification requirement.

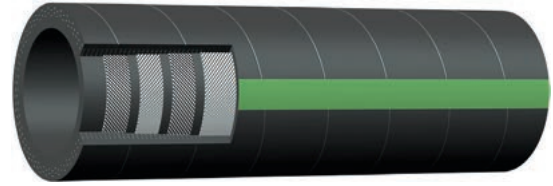
** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity applies.



4179G (GREEN STRIPE™)

OIL-RESISTANT THICK-WALL, HIGHER PRESSURE COOLANT HOSE



- Relative Cost** ●●●○○
- Applications** Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions.
- Temperature** -40°C to +100°C (-40°F to +212°F)
- Standards** SAE 20R1 Class B tube and Class C cover, heavy wall. Wall thickness is 6.45±0.65mm (0.255±0.025 inch) excluding lap area.
- Construction** NBR (nitrile) tube, synthetic fabric reinforcement 4 plies, CR (neoprene) cover with wrapped appearance.
- Packaging** Bulk lengths are 3 foot sticks in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
44.5 ±0.8	1 3/4 ±0.03	58.7	2.31	0.69	100	2.76	400	16.9	50	381	15	1.47	0.99	4179-1660
47.6	1 7/8	61.7	2.43	0.69	100	2.76	400	10.1	30	**	**	1.63	1.09	4179-1661
50.8 ±1.6	2 ±0.06	65.0	2.56	0.61	88	2.41	350	10.1	30	**	**	1.67	1.12	4179-1662
54.0	2 1/8	68.1	2.68	0.61	88	2.41	350	3.4	10	**	**	1.77	1.19	4179-1663
57.2	2 1/4	71.4	2.81	0.61	88	2.41	350	3.4	10	**	**	1.85	1.25	4179-1664
60.3	2 3/8	75.4	2.97	0.61	88	2.41	350	*	*	**	**	1.97	1.32	4179-1665
63.5	2 1/2	77.7	3.06	0.52	75	2.07	300	*	*	**	**	2.05	1.38	4179-1666
66.7	2 5/8	80.8	3.18	0.52	75	2.07	300	*	*	**	**	2.15	1.44	4179-1667
69.9	2 3/4	84.1	3.31	0.43	62	1.72	250	*	*	**	**	2.17	1.46	4179-1668
73.0	2 7/8	87.1	3.43	0.43	62	1.72	250	*	*	**	**	2.33	1.57	4179-1669
76.2	3	90.4	3.56	0.43	62	1.72	250	*	*	**	**	2.37	1.59	4179-1670
79.4	3 1/8	93.5	3.68	0.43	62	1.72	250	*	*	**	**	2.35	1.58	4179-1671
82.6	3 1/4	96.8	3.81	0.43	62	1.72	250	*	*	**	**	2.41	1.62	4179-1672
88.9	3 1/2	103.1	4.06	0.34	50	1.38	200	*	*	**	**	2.74	1.84	4179-1673
92.1	3 5/8	106.2	4.18	0.34	50	1.38	200	*	*	**	**	2.66	1.79	4179-1674
95.3	3 3/4	109.5	4.31	0.34	50	1.38	200	*	*	**	**	2.76	1.85	4179-1675
101.6	4	115.8	4.56	0.26	38	1.03	150	*	*	**	**	3.16	2.12	4179-1676
127.0	5	141.2	5.56	0.26	38	1.03	150	*	*	**	**	3.81	2.56	4179-1680

* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

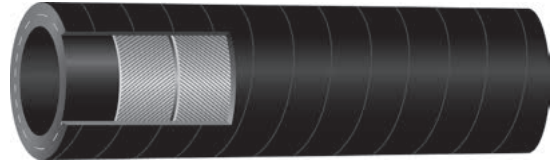
Brake

Accessories

Belts

4169G

**OIL-RESISTANT,
HIGHER TEMPERATURE COOLANT HOSE**



Relative Cost ●●●○○

Applications Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air or water.

Standards SAE 20R1 EC Class D1 tube and Class C cover, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

Construction EPDM tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.

Packaging Bulk lengths are 3 foot sticks in a box. Custom lengths or enlarged ends available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

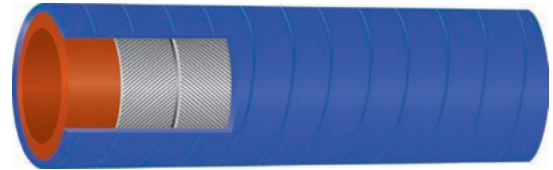
ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
25.4 ±0.08	1 ±0.03	36.1	1.42	0.95	138	3.45	500	23.6	7	305	12	0.72	0.48	4169-2550
28.6	1 1/8	39.4	1.55	0.69	100	2.76	400	20.3	6	356	14	0.81	0.55	4169-2562***
31.8	1 1/4	42.4	1.67	0.69	100	2.76	400	16.9	5	381	15	0.85	0.57	4169-2551
38.1	1 1/2	48.8	1.92	0.69	100	2.76	400	10.1	3	610	24	1.01	0.68	4169-2552
41.3	1 5/8	52.1	2.05	0.60	88	2.41	350	6.8	2	**	**	1.03	0.69	4169-2736***
44.5	1 3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	**	**	1.09	0.73	4169-2553
47.6	1 7/8	58.4	2.30	0.52	75	2.07	300	*	*	**	**	1.13	0.76	4169-2737***
50.8 ±1.6	2 ±0.06	61.5	2.42	0.43	63	1.72	250	*	*	**	**	1.29	0.87	4169-3264
54.0	2 1/8	64.8	2.55	0.43	63	1.72	250	*	*	**	**	1.34	0.90	4169-2563***
57.2	2 1/4	67.8	2.67	0.43	63	1.72	250	*	*	**	**	1.44	0.97	4169-2555
60.3	2 3/8	71.1	2.80	0.43	63	1.72	250	*	*	**	**	1.49	1.00	4169-2556***
63.5	2 1/2	74.2	2.92	0.43	63	1.72	250	*	*	**	**	1.60	1.07	4169-2557***
66.7	2 5/8	77.5	3.05	0.43	63	1.72	250	*	*	**	**	1.64	1.10	4169-2760
69.9	2 3/4	80.5	3.17	0.43	63	1.72	250	*	*	**	**	1.60	1.08	4169-2558
73.0	2 7/8	83.8	3.30	0.39	56	1.55	225	*	*	**	**	1.78	1.20	4169-2761***
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.87	1.26	4169-2559
88.9	3 1/2	99.6	3.92	0.13	19	0.52	75	*	*	**	**	2.13	1.43	4169-2560***

* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4171 (DURION™)

HIGH TEMPERATURE SILICONE COOLANT



HOSE

Relative Cost ●●●●○

Applications Engine coolant hose to withstand temperature extremes. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -55°C to +175°C (-65°F to +347°F) continuous to +260°C (500°F) for aramid reinforcement.

Standards SAE 20R1 Class A, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

Construction Orange silicone tube, 4 plies of polyester or aramid fabric reinforcement, blue silicone cover with glossy appearance.

Packaging Lengths are 3 foot sticks in a box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Polyester Reinforced	Gates Item Aramid Reinforced
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	3 ft. Length
12.7 ±0.8	1/2 ±0.03	22.1	0.87	0.73	106	2.93	425	40.6	12	**	**	0.42	0.28	4171-1900	
15.9	5/8	25.1	0.99	0.65	94	2.59	375	40.6	12	**	**	0.48	0.32	4171-1901	
19.1	3/4	28.4	1.12	0.56	81	2.24	325	33.8	10	**	**	0.55	0.37	4171-1902	
22.2	7/8	31.8	1.25	0.52	75	2.07	300	23.6	7	**	**	0.61	0.41	4171-1903	
25.4	1	34.8	1.37	0.52	75	2.07	300	23.6	7	**	**	0.68	0.46	4171-1904	4171-1000
28.6	1 1/8	38.1	1.50	0.52	75	2.07	300	20.3	6	**	**	0.73	0.49	4171-1905	
31.8	1 1/4	41.1	1.62	0.47	69	1.90	275	16.9	5	**	**	0.82	0.55	4171-1906	4171-1016
34.9	1 3/8	44.5	1.75	0.47	69	1.90	275	13.5	4	**	**	0.88	0.59	4171-1907	
38.1	1 1/2	47.5	1.87	0.43	63	1.72	250	10.1	3	**	**	0.92	0.62	4171-1908	4171-1017
41.3	1 5/8	50.5	1.99	0.43	63	1.72	250	6.8	2	**	**	1.01	0.68	4171-1909	
44.5	1 3/4	53.8	2.12	0.39	56	1.55	225	3.4	1	**	**	1.07	0.72	4171-1910	4171-1018
50.8 ±1.6	2 ±0.06	60.2	2.37	0.34	50	1.38	200	*	*	**	**	1.21	0.81	4171-1911	4171-1019
57.2	2 1/4	66.5	2.62	0.30	44	1.21	175	*	*	**	**	1.34	0.90	4171-1912	4171-1024
60.3	2 3/8	69.9	2.75	0.30	44	1.21	175	*	*	**	**	1.41	0.95	4171-1913	
63.5	2 1/2	72.9	2.87	0.26	38	1.03	150	*	*	**	**	1.49	1.00	4171-1914	4171-1025
69.9	2 3/4	79.2	3.12	0.22	31	0.86	125	*	*	**	**	1.64	1.10	4171-1915	4171-1026
76.2	3	85.6	3.37	0.17	25	0.69	100	*	*	**	**	1.77	1.19	4171-1916	4171-1027
79.4	3 1/8	88.9	3.50	0.17	25	0.69	100	*	*	**	**	1.85	1.24	4171-1917	
82.6	3 1/4	91.9	3.62	0.17	25	0.69	100	*	*	**	**	1.90	1.28	4171-1918	
88.9	3 1/2	98.3	3.87	0.17	25	0.69	100	*	*	**	**	2.05	1.38	4171-1919	
95.3	3 3/4	104.6	4.12	0.17	25	0.69	100	*	*	**	**	2.19	1.47	4171-1920	
101.6	4	111.0	4.37	0.17	25	0.69	100	*	*	**	**	2.37	1.59	4171-1921	
114.3	4 1/2	123.7	4.87	0.17	25	0.69	100	*	*	**	**	2.60	1.75	4171-1922	

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

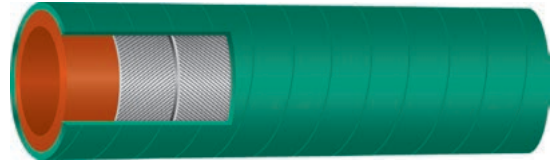
Accessories

Belts









4171

HIGHER TEMPERATURE AND PRESSURE SILICONE COOLANT HOSE



Relative Cost ●●●●○

-  **Applications** Engine coolant hose to withstand temperature extremes. Also suitable for air or water. Not for conveying fuel or oil.
-  **Temperature** -55 °C to +175 °C (-65 °F to +347 °F)
-  **Standards** SAE 20R1 Class A, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.
-  **Construction** Orange silicone tube, synthetic fabric reinforcement plies, green silicone cover with wrapped appearance.
-  **Packaging** Bulk lengths are 10 foot sticks in a box. Custom lengths available with minimum order quantity.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
9.5 ±0.8	3/8 ±0.03	18.8	0.74	0.76	110	2.93	425	40.6	12	203	8	0.31	0.21	4171-0195
12.7	1/2	22.1	0.87	0.76	110	2.93	425	40.6	12	203	8	0.42	0.28	4171-0197
15.9	5/8	25.1	0.99	0.76	110	2.93	425	40.6	12	203	8	0.48	0.32	4171-0204
19.1	3/4	28.4	1.12	0.76	110	2.93	425	33.8	10	254	10	0.55	0.37	4171-0206
22.2	7/8	31.5	1.24	0.76	110	2.93	425	23.6	7	279	11	0.61	0.41	4171-0210
25.4	1	34.8	1.37	0.62	90	2.59	375	23.6	7	305	12	0.68	0.46	4171-0213
28.6	1 1/8	38.1	1.50	0.62	90	2.59	375	20.3	6	330	13	0.73	0.49	4171-0217
31.8	1 1/4	41.4	1.63	0.59	85	2.41	350	16.9	5	356	14	0.82	0.55	4171-0265
34.9	1 3/8	44.5	1.75	0.59	85	2.41	350	13.5	4	660	26	0.88	0.59	4171-0260
38.1	1 1/2	47.8	1.88	0.59	85	2.41	350	10.1	3	762	30	0.92	0.62	4171-0270
41.3	1 5/8	50.8	2.00	0.55	80	2.24	325	6.8	2	**	**	1.01	0.68	4171-0275
44.5	1 3/4	54.1	2.13	0.55	80	2.24	325	3.4	1	**	**	1.07	0.72	4171-0280
47.6	1 7/8	57.2	2.25	0.55	80	2.24	325	*	*	**	**	1.15	0.77	***
50.8 ±1.6	2 ±0.06	60.5	2.38	0.52	75	2.07	300	*	*	**	**	1.21	0.81	4171-0285
54.0	2 1/8	63.8	2.51	0.52	75	2.07	300	*	*	**	**	1.28	0.86	4171-0224
57.2	2 1/4	66.8	2.63	0.52	75	2.07	300	*	*	**	**	1.34	0.9	4171-0223
60.3	2 3/8	69.9	2.75	0.45	65	1.72	250	*	*	**	**	1.41	0.95	4171-0229
63.5	2 1/2	73.2	2.88	0.45	65	1.72	250	*	*	**	**	1.49	1	4171-0234
69.9	2 3/4	79.5	3.13	0.34	50	1.38	200	*	*	**	**	1.64	1.1	4171-0238
76.2	3	85.9	3.38	0.34	50	1.38	200	*	*	**	**	1.77	1.19	4171-0246
82.6	3 1/4	92.2	3.63	0.28	40	1.21	175	*	*	**	**	1.90	1.28	4171-0249
88.9	3 1/2	98.6	3.88	0.24	35	1.03	150	*	*	**	**	2.05	1.38	4171-0241
95.3	3 3/4	104.9	4.13	0.24	35	1.03	150	*	*	**	**	2.19	1.47	4171-0835***
101.6	4	111.3	4.38	0.24	35	1.03	150	*	*	**	**	2.37	1.59	4171-0290
114.3	4 1/2	124.0	4.88	0.17	25	0.69	100	*	*	**	**	2.60	1.75	4171-0295
127.0	5	136.7	5.38	0.14	20	0.55	80	*	*	**	**	2.81	1.89	4171-0841***

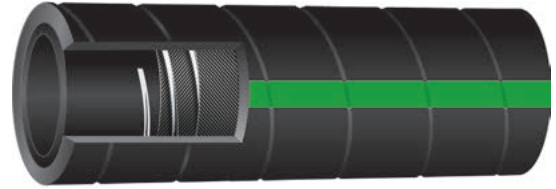
* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



4685WG

WIRE REINFORCED COOLANT HOSE



Relative Cost ●●●○○

Applications Engine coolant or water hose where tight bends or vacuum is required. Also suitable for air. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.

Standards SAE 20R2 EC Class D1 except vacuum. Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.

Construction EPDM tube, synthetic fabric reinforcement plies with two embedded helical wires, EPDM cover with wrapped appearance.

Packaging Bulk lengths are 5 foot sticks in a box. Custom lengths or enlarged ends available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	5 ft. Length
25.4 ±0.08	1 ±0.03	37.1	1.46	0.69	100	2.76	400	84.5	25	51	2	0.72	0.48	4685-2016
28.6	1 1/8	40.1	1.58	0.69	100	2.76	400	84.5	25	64	2.5	0.79	0.53	4685-2018
31.8	1 1/4	43.4	1.71	0.69	100	2.76	400	84.5	25	64	2.5	0.87	0.58	4685-2020
34.9	1 3/8	46.5	1.83	0.59	85	2.41	350	84.5	25	76	3	0.93	0.63	4685-2022
38.1	1 1/2	49.8	1.96	0.59	85	2.41	350	67.6	20	89	3.5	1.04	0.70	4685-2024
41.3	1 5/8	52.8	2.08	0.52	75	2.07	300	67.6	20	89	3.5	1.12	0.75	4685-2026
44.5	1 3/4	56.1	2.21	0.52	75	2.07	300	67.6	20	102	4	1.19	0.80	4685-2028
47.6	1 7/8	59.2	2.33	0.41	60	1.72	250	67.6	20	114	4.5	1.26	0.85	4685-2030
50.8 ±1.6	2 ±0.06	62.5	2.46	0.41	60	1.72	250	67.6	20	114	4.5	1.39	0.93	4685-2032
54.0	2 1/8	65.5	2.58	0.38	55	1.55	225	67.6	20	140	5.5	1.47	0.99	4685-2034
57.2	2 1/4	68.8	2.71	0.38	55	1.55	225	67.6	20	140	5.5	1.54	1.04	4685-2036
60.3	2 3/8	71.9	2.83	0.34	50	1.38	200	67.6	20	165	6.5	1.62	1.09	4685-2038
63.5	2 1/2	75.2	2.96	0.34	50	1.38	200	67.6	20	165	6.5	1.70	1.14	4685-2040
66.7	2 5/8	78.2	3.08	0.28	40	1.21	175	50.7	15	191	7.5	1.77	1.19	4685-2042
69.9	2 3/4	81.5	3.21	0.28	40	1.21	175	50.7	15	191	7.5	1.85	1.24	4685-2044
73.0	2 7/8	84.6	3.33	0.28	40	1.21	175	50.7	15	229	9	1.92	1.29	4685-2046
76.2	3	87.1	3.43	0.28	40	1.21	175	50.7	15	229	9	2.00	1.34	4685-2048
88.9	3 1/2	99.8	3.93	0.24	35	1.03	150	50.7	15	305	12	2.30	1.55	4685-2056
101.6	4	112.5	4.43	0.21	30	0.86	125	33.8	10	508	20	2.62	1.76	4685-2064
127.0	5	137.9	5.43	0.10	15	0.52	75	16.9	5	610	24	3.95	2.65	4685-2080
152.4	6	163.3	6.43	0.10	15	0.52	75	16.9	5	-	-	4.69	3.15	4685-2096

For Larger sizes; to 305mm (12 inch) ID, see Water Master™ 100-150SD in the Industrial Hose Catalog

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

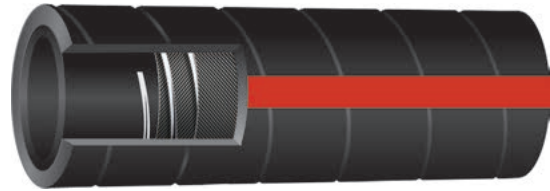
Brake

Accessories

Belts

4684CF

**WIRE REINFORCED,
OIL RESISTANT COOLANT HOSE**



Relative Cost ●●●○○

Applications Engine coolant lower radiator hose where fuel and oil resistance and tight bends or vacuum is required. Also suitable for marine wet exhaust.

Temperature -40°C to +100°C (-40°F to +212°F)

Standards SAE 20R2 Class B tube, Class C cover except vacuum, SAE J2006. Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.

Construction Nitrile tube, synthetic fabric reinforcement plies with two embedded helical wires, neoprene cover with wrapped appearance.

Packaging Bulk lengths are 10 foot sticks in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

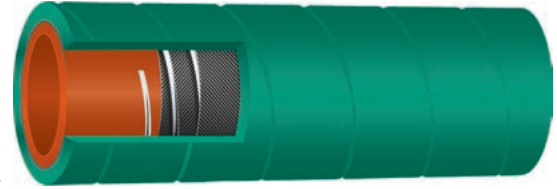
ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length	200 ft. Length
25.4 ±0.08	1 ±0.03	37.3	1.47	0.69	100	2.76	400	84.5	25	76	3	0.73	0.49	4684-1540	
28.6	1 1/8	40.6	1.60	0.69	100	2.76	400	84.5	25	102	4	0.80	0.54	4684-1545	
31.8	1 1/4	43.7	1.72	0.69	100	2.76	400	84.5	25	102	4	0.88	0.59	4684-1551	
34.9	1 3/8	47.0	1.85	0.60	88	2.41	350	84.5	25	102	4	0.95	0.64	4684-1556	
38.1	1 1/2	50.0	1.97	0.60	88	2.41	350	67.6	20	102	4	1.01	0.68	4684-1561	
41.3	1 5/8	53.3	2.10	0.52	75	2.07	300	67.6	20	127	5	1.08	0.72	4684-1601	
44.5	1 3/4	56.4	2.22	0.52	75	2.07	300	67.6	20	127	5	1.15	0.77	4684-1611	
47.6	1 7/8	59.4	2.34	0.43	63	1.72	250	67.6	20	127	5	1.20	0.81	4684-1651	
50.8 ±1.6	2 ±0.06	62.7	2.47	0.43	63	1.72	250	67.6	20	127	5	1.27	0.86	4684-1660	
54.0	2 1/8	66.0	2.60	0.39	56	1.55	225	67.6	20	152	6	1.35	0.91	4684-1670	
57.2	2 1/4	69.1	2.72	0.39	56	1.55	225	67.6	20	152	6	1.42	0.95	4684-1680	
60.3	2 3/8	72.4	2.85	0.34	50	1.38	200	67.6	20	178	7	1.49	1.00	4684-1690	
63.5	2 1/2	75.4	2.97	0.34	50	1.38	200	67.6	20	178	7	1.55	1.04	4684-1700	
66.7	2 5/8	78.7	3.10	0.30	44	1.21	175	50.7	15	229	9	1.61	1.08	4684-1711	
69.9	2 3/4	81.8	3.22	0.30	44	1.21	175	50.7	15	254	10	1.69	1.13	4684-1720	
73.0	2 7/8	85.1	3.35	0.30	44	1.21	175	50.7	15	279	11	1.75	1.18	4684-1730	
76.2	3	88.1	3.47	0.30	44	1.21	175	50.7	15	305	12	1.82	1.22	4684-1740	4684-1706***
88.9	3 1/2	100.8	3.97	0.26	38	1.03	150	50.7	15	432	17	2.10	1.41	4684-1750	4684-1707***
101.6	4	113.5	4.47	0.22	31	0.86	125	33.8	10	610	24	2.38	1.60	4684-1760	
114.3	4 1/2	126.2	4.97	0.17	25	0.69	100	16.9	5	686	27	2.66	1.79	4684-1764***	4684-1708***
127.0	5	138.9	5.47	0.13	19	0.52	75	16.9	5	762	30	2.94	1.98	4684-1766***	4684-1709***
152.4	6	164.3	6.47	0.13	19	0.52	75	16.9	5	914	36	3.50	2.35	4684-1722***	

*** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4684S

WIRE REINFORCED, HIGH TEMPERATURE COOLANT HOSE



Relative Cost ●●●●●

Applications Engine coolant hose for extreme temperatures where tight bends or vacuum is required. Also suitable for air. Not for conveying fuel or oil.

Temperature -57 °C to +175 °C (-70 °F to +347 °F)

Standards SAE 20R2 Class A, or MIL STD ZZ-H-428 Type V Grade A Class 2. Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.

Construction Orange silicone tube, synthetic fabric reinforcement plies with two embedded helical wires, green silicone cover with wrapped appearance.

Packaging Bulk lengths are 10 foot sticks in a box. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
25.4 ±0.08	1 ±0.03	37.1	1.46	0.59	85	2.41	350	84.5	25	76	3	0.74	0.5	4684-2917***
31.8	1 1/4	44.2	1.74	0.59	85	2.41	350	84.5	25	102	4	0.98	0.66	4684-0879***
38.1	1 1/2	50.5	1.99	0.52	75	2.07	300	67.6	20	102	4	1.13	0.76	4684-0880***
50.8 ±1.6	2 ±0.06	63.2	2.49	0.34	50	1.38	200	67.6	20	127	5	1.44	0.97	4684-0890***
57.2	2 1/4	69.6	2.74	0.30	44	1.21	175	67.6	20	152	6	1.59	1.07	4684-0882***
63.5	2 1/2	75.9	2.99	0.26	38	1.03	150	67.6	20	178	7	1.92	1.29	4684-1624***
76.2	3	88.6	3.49	0.23	33	0.90	130	50.7	15	305	12	2.07	1.39	4684-1620***

*** Not stocked. Minimum order quantity applies.

4177S

HIGH TEMP SILICONE HUMP HOSE

Relative Cost ●●●●●

Applications Vibration dampening connector for turbocharger or charge air cooler. Also suitable for coolant.

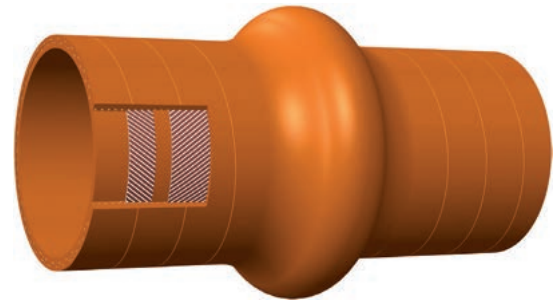
Temperature -51 °C to +177 °C (-60 °F to +350 °F).

Standards SAE 20R1 Class A.

Construction Multiple plies of silicone and polyester.

Packaging All parts made and packaged to order. Minimum order quantity applies.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)



ID		OD Nominal		OD Hump		Vacuum Minimum		Length		Work. Press. Max.		Burst Minimum	
mm	in.	mm	in.	mm	in.	kPa	in. Hg	mm	in.	MPa	psi	MPa	psi
31.8	1 1/4	41.7	1.64	56.4	2.22	17	5	101.6	4	0.45	65	1.90	275
44.5	1 3/4	54.4	2.14	71.4	2.81	17	5	86 to 127	3 3/8 to 5	0.38	55	1.55	225
50.8	2	60.7	2.39	81.8	3.22	17	5	70 to 230	2 3/4 to 9	0.34	50	1.38	200
57.2	2 1/4	67.1	2.64	88.9	3.50	17	5	76 to 230	3 to 9	0.28	40	1.21	175
63.5	2 1/2	73.4	2.89	96.8	3.81	17	5	76 to 203	3 to 8	0.24	35	1.03	150
69.9	2 3/4	79.8	3.14	103.9	4.09	17	5	70 to 178	2 3/4 to 7	0.21	30	0.86	125
76.2	3	86.1	3.39	112.0	4.41	17	5	76 to 178	3 to 7	0.17	25	0.69	100
88.9	3 1/2	98.8	3.89	127.0	5	17	5	89 to 178	3 1/2 to 7	0.12	17	0.52	75
101.6	4	111.5	4.39	139.7	5.5	17	5	102 to 165	4 to 6 1/2	0.08	12	0.34	50

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

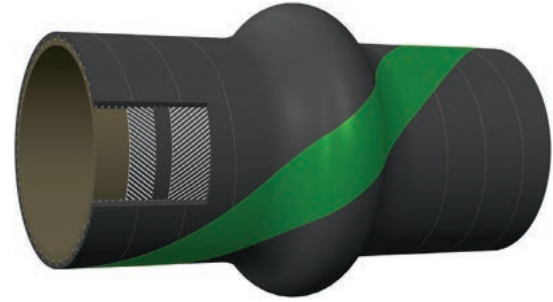
Brake








Accessories

Belts

4177W

OIL RESISTANT HUMP COOLANT HOSE



-  **Relative Cost** ●●●●○
-  **Applications** Vibration dampening connector between the engine and radiator. Also suitable for air inlet. There is no vacuum rating. Not for conveying fuel or oil.
-  **Temperature** -40°C to +100°C (-40°F to +212°F).
-  **Standards** SAE 20R1 Class B tube, Class C cover.
-  **Construction** NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.
-  **Packaging** Individually bagged and shipped in a box.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		OD Hump		Length		Work. Press. Max.		Burst Minimum		Gates Item No.	Inter-change No.
mm	in.	mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	P/N	
31.8	1 1/4	41.7	1.64	56.4	2.22	101.6	4	0.47	69	1.90	275	3177-0027	23505
34.9	1 3/8	44.8	1.76	61.2	2.41	127.0	5	0.43	63	1.72	250	3177-0034	23511
38.1	1 1/2	48.0	1.89	63.5	2.50	127.0	5	0.43	63	1.72	250	3177-0023	23515
44.5	1 3/4	54.4	2.14	71.4	2.81	127.0	5	0.39	56	1.55	225	3177-0022	23520
50.8	2	60.7	2.39	81.8	3.22	88.9	3 1/2	0.34	50	1.38	200	3177-0032	23531
50.8	2	60.7	2.39	81.8	3.22	127.0	5	0.34	50	1.38	200	3177-0024	23533
57.2	2 1/4	67.1	2.64	88.9	3.50	114.3	4 1/2	0.30	44	1.21	175	3177-0026	23547
60.3	2 3/8	70.2	2.76	94.5	3.72	127.0	5	0.26	38	1.03	150	3177-0025	23557
60.3	2 3/8	70.2	2.76	94.5	3.72	158.8	6 1/4	0.26	38	1.03	150	3177-0015	23559
63.5	2 1/2	73.4	2.89	96.8	3.81	114.3	4 1/2	0.26	38	1.03	150	3177-0030	23562
63.5	2 1/2	73.4	2.89	96.8	3.81	152.4	6	0.26	38	1.03	150	3177-0028	23550
69.9	2 3/4	79.8	3.14	103.9	4.09	82.6	3 1/4	0.22	31	0.86	125	3177-0040	23566
69.9	2 3/4	79.8	3.14	103.9	4.09	114.3	4 1/2	0.22	31	0.86	125	3177-0033	23567
69.9	2 3/4	79.8	3.14	103.9	4.09	136.5	5 3/8	0.22	31	0.86	125	3177-0039	23568
76.2	3	86.1	3.39	112.0	4.41	101.6	4	0.17	25	0.69	100	3177-0004	23572
76.2	3	86.1	3.39	112.0	4.41	177.8	7	0.17	25	0.69	100	3177-0038	23575
88.9	3 1/2	98.8	3.89	127.0	5	139.7	5 1/2	0.10	15	0.41	60	3177-0043	23585

- Coolant 
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant 
- Brake
- Accessories
- Belts

4284 (VULCO-FLEX™ GREEN STRIPE™)

MOLDED CONVOLUTED COOLANT HOSE WITH EMBEDDED WIRE



- Relative Cost** ●●●○○
- Applications** Engine coolant or water hose where tight bends, vacuum, or exterior oil resistance is required. Also suitable for air. Not for conveying fuel or oil.
- Temperature** -40°C to +125°C (-40°F to +257°F)
- Standards** Similar to SAE 20R5 Class D2. Wall thickness is 4.35±1.17mm (0.17±0.045 inch).
- Construction** EPDM tube, synthetic fabric reinforcement plies with embedded wire helix, EPDM cover with neoprene coated fabric. Convoluted appearance except for 41.3±3mm (1.62±0.12inch) cuff length on each end.
- Packaging** Hoses are boxed.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID (end 1) x (end 2)		OD Reference		Length*		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Gates Item No.	Inter-change No.
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	P/N	
44.5 +.8/-2.3	1 3/4 +.03/-0.09	53.2	2.09	152	6	0.21	30	0.83	120	67.6	20	152	6	4284-0001	26601
44.5	1 3/4	53.2	2.09	216	8.5	0.21	30	0.83	120	67.6	20	152	6	4284-0005	26602
44.5	1 3/4	53.2	2.09	279	11	0.21	30	0.83	120	67.6	20	152	6	4284-0032	26603
44.5	1 3/4	53.2	2.09	343	13.5	0.21	30	0.83	120	67.6	20	152	6	4284-0122	26501
44.5	1 3/4	53.2	2.09	419	16.5	0.21	30	0.83	120	67.6	20	152	6	4284-0123	26502
44.5	1 3/4	53.2	2.09	483	19	0.21	30	0.83	120	67.6	20	152	6	4284-0015	26611
44.5	1 3/4	53.2	2.09	597	23.5	0.21	30	0.83	120	67.6	20	152	6	4284-0017	26612
44.5 x 50.8	1 3/4 x 2	53.2 x 59.5	2.09 x 2.34	254	10	0.21	30	0.83	120	67.6	20	152	6	4284-0134	26503
44.5 x 50.8	1 3/4 x 2	53.2 x 59.5	2.09 x 2.34	419	16.5	0.21	30	0.83	120	67.6	20	152	6	4284-0124	26504
44.5 x 50.8	1 3/4 x 2	53.2 x 59.5	2.09 x 2.34	483	19	0.21	30	0.83	120	67.6	20	152	6	4284-0120	26505
44.5 x 50.8	1 3/4 x 2	53.2 x 59.5	2.09 x 2.34	597	23.5	0.21	30	0.83	120	67.6	20	152	6	4284-0135	26506
50.8	2	59.5	2.34	241	9.5	0.17	25	0.69	100	50.7	15	152	6	4284-0121	26507
50.8	2	59.5	2.34	311	12.25	0.17	25	0.69	100	50.7	15	152	6	4284-0115	26508
50.8	2	59.5	2.34	368	14.5	0.17	25	0.69	100	50.7	15	152	6	4284-0113	26509
50.8	2	59.5	2.34	432	17	0.17	25	0.69	100	50.7	15	152	6	4284-0114	26510
50.8	2	59.5	2.34	508	20	0.17	25	0.69	100	50.7	15	152	6	4284-0107	26511
50.8	2	59.5	2.34	610	24	0.17	25	0.69	100	50.7	15	152	6	4284-0101	26512
50.8	2	59.5	2.34	838	33	0.17	25	0.69	100	50.7	15	152	6	4284-0137	26513
50.8 x 57.1	2 x 2 1/4	59.5 x 65.8	2.34 x 2.59	216	8.5	0.17	25	0.69	100	50.7	15	152	6	4284-0118	26514
50.8 x 57.1	2 x 2 1/4	59.5 x 65.8	2.34 x 2.59	381	15	0.17	25	0.69	100	50.7	15	152	6	4284-0131	26515
50.8 x 57.1	2 x 2 1/4	59.5 x 65.8	2.34 x 2.59	445	17.5	0.17	25	0.69	100	50.7	15	152	6	4284-0125	26516
50.8 x 57.1	2 x 2 1/4	59.5 x 65.8	2.34 x 2.59	635	25	0.17	25	0.69	100	50.7	15	152	6	4284-0133	26517
50.8 x 63.5	2 x 2 1/2	59.5 x 72.2	2.34 x 2.84	508	20	0.17	25	0.69	100	50.7	15	152	6	4284-0108	26518
57.1	2 1/4	65.8	2.59	229	9	0.17	25	0.69	100	40.6	12	203	8	4284-0102	26519
57.1	2 1/4	65.8	2.59	279	11	0.17	25	0.69	100	40.6	12	203	8	4284-0103	26520
57.1	2 1/4	65.8	2.59	356	14	0.17	25	0.69	100	40.6	12	203	8	4284-0104	26521
57.1	2 1/4	65.8	2.59	432	17	0.17	25	0.69	100	40.6	12	203	8	4284-0105	26522
57.1	2 1/4	65.8	2.59	483	19	0.17	25	0.69	100	40.6	12	203	8	4284-0106	26523
57.1	2 1/4	65.8	2.59	610	24	0.17	25	0.69	100	40.6	12	203	8	4284-0140	26524
57.1	2 1/4	65.8	2.59	686	27	0.17	25	0.69	100	40.6	12	203	8	4284-0126	26525
57.1 x 63.5	2 1/4 x 2 1/2	65.8 x 72.2	2.59 x 2.84	457	18	0.17	25	0.69	100	40.6	12	203	8	4284-0109	26526
57.1 x 63.5	2 1/4 x 2 1/2	65.8 x 72.2	2.59 x 2.84	533	21	0.17	25	0.69	100	40.6	12	203	8	4284-0110	26527
57.1 x 63.5	2 1/4 x 2 1/2	65.8 x 72.2	2.59 x 2.84	635	25	0.17	25	0.69	100	40.6	12	203	8	4284-0132	26528
63.5	2 1/2	72.2	2.84	279	11	0.14	20	0.55	80	33.8	10	203	8	4284-0128	26529
63.5	2 1/2	72.2	2.84	356	14	0.14	20	0.55	80	33.8	10	203	8	4284-0136	26530
63.5	2 1/2	72.2	2.84	406	16	0.14	20	0.55	80	33.8	10	203	8	4284-0112	26531
63.5	2 1/2	72.2	2.84	610	24	0.14	20	0.55	80	33.8	10	203	8	4284-0111	26532
63.5	2 1/2	72.2	2.84	711	28	0.14	20	0.55	80	33.8	10	203	8	4284-0138	26533
69.9	2 3/4	78.6	3.09	178	7	0.14	20	0.55	80	33.8	10	254	10	4284-0139	26534
69.9	2 3/4	78.6	3.09	356	14	0.14	20	0.55	80	33.8	10	254	10	4284-0141	26535
69.9	2 3/4	78.6	3.09	457	18	0.14	20	0.55	80	33.8	10	254	10	4284-0130	26536
69.9	2 3/4	78.6	3.09	813	32	0.14	20	0.55	80	33.8	10	254	10	4284-0117	26537
76.2	3	84.9	3.34	940	37	0.14	20	0.55	80	27.0	8	254	10	4284-0116	26538

* Length tolerance to 507mm (19.9 inch) = +6.4/-9.5 (+0.25/-0.38).
 Length tolerance 508mm (20 inch) to 634 (24.9) = +12.7/-9.5 (+0.50/-0.38).
 Length tolerance 635mm (25 inch) and more = ±12.7 (±0.50)

Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts



DRIVEN BY POSSIBILITY™

GATES® POWERGRIP™ CLAMPS

MAINTENANCE-FREE SHRINKBAND HOSE CLAMPS, AVAILABLE IN SB + RT

RELIABLY STOPS LEAKS WITHOUT THE NEED FOR RE-TIGHTENING

Designed for coolant and low-pressure assemblies, Gates® PowerGrip™ clamps are maintenance-free, durable hose clamps that retain dynamic tension in hot and cold conditions, even on out-of-round fittings and corrosive environments.

The environmentally-friendly PowerGrip™ clamps are designed for a secure, tight fit in extreme operating temperatures to eliminate antifreeze leaks and groundwater contamination.

Gates® PowerGrip™ clamps have decades of proven performance in heavy-duty applications, and are engineered for the optimal fit to your existing Gates hoses and assemblies.

FEATURES + BENEFITS

- Easy to install with an ordinary heat gun, and easy to remove with a soldering iron
- Wider sealing area entraps connector head
- Conforms to any shape of hose, even out-of-round fittings
- Made from heat-sensitive thermoplastic with memory to prevent over- or under-tightening
- Can be used with all brands of silicone hose
- Low profile and clean design
- Temperature rating: -40°F to +302°F (-40°C to +150°C)
- Environmentally Friendly – Eliminates anti-freeze leaks and ground water contamination





DRIVEN BY POSSIBILITY™

OPTIMIZED HEATING EFFICIENCY

GATES® POWERGRIP™ CLAMPS:

STOP LEAKS, EVEN ON POOR QUALITY CONNECTIONS.

Made of a heat-shrinking material, Gates® PowerGrip™ SB and RT clamps solve coolant leakage problems in both silicone and standard rubber hoses. The thermoplastic clamps maintain a dynamic tension in hot and cold conditions. When the engine reaches operating temperature, the shrink forces of PowerGrip™ readjust to a consistent clamping force. The unique material also conforms to misalignment, inconsistent hose thickness and out-of-round fittings.

INDUSTRIES + APPLICATIONS:

- Truck + Bus
- Automotive + Light Trucks
- Construction
- Mining
- Agriculture
- Forestry
- Recreational Vehicles
- Marine
- Radiator Hose
- Heater Hose
- Air Intake
- Low Pressure Fuel + Oil

POWERGRIP™ CLAMP SPECIFICATIONS

SIZE	NOMINAL HOSE ID (IN)	NOMINAL HOSE ID (MM)	FITS HOSE OD (IN)	FITS HOSE OD (MM)
SB15	1/4	6	1/2 to 11/16	13 to 17
SB19	3/8	10	11/16 to 13/16	17 to 21
SB22	1/2	13	13/16 to 15/16	21 to 24
SB25	5/8	16	15/16 to 1 1/16	24 to 27
SB29	3/4	19	1 1/16 to 1 3/16	27 to 30
SB32	7/8	22	1 3/16 to 1 5/16	30 to 33
SB34	1	25	1 5/6 to 1 1/2	33 to 38
SB41	1 1/4	32	1 1/2 to 1 3/4	38 to 44
SB48	1 1/2	38	1 3/4 to 2	44 to 51
SB54	1 3/4	44	2 to 2 1/4	51 to 57
SB60	2	51	2 1/4 to 2 1/2	57 to 64
SB67	2 1/4	57	2 1/2 to 2 3/4	64 to 70
SB73	2 1/2	64	2 3/4 to 3	70 to 76
SB79	2 3/4	70	3 to 3 1/4	76 to 83
SB86	3	76	3 1/4 to 3 1/2	83 to 89
SB90	3 1/8	79	3 1/2 to 3 5/8	89 to 92
RT038	3/8	10	11/16 to 13/16	17 to 21
RT062	5/8	16	15/16 to 1 1/16	24 to 27
RT075	3/4	19	1 1/16 to 1 3/16	27 to 30
RT100	1	25	1 5/6 to 1 1/2	33 to 38
RT125	1 1/4	32	1 1/2 to 1 3/4	38 to 44
RT150	1 1/2	38	1 3/4 to 2	44 to 51
RT200	2	51	2 1/4 to 2 1/2	57 to 64
RT225	2 1/4	57	2 1/4 to 2 1/2	57 to 64
RT250	2 1/2	64	2 3/4 to 3	70 to 76
RT275	2 3/4	70	3 to 3 1/4	76 to 83
RT300	3	76	3 1/4 to 3 1/2	83 to 89

Note: SB clamps shrink using a heat gun. RT clamps shrink at room temperature and must be frozen during installation, which is most suitable for production lines.



DRIVEN BY POSSIBILITY

4230T

STANDARD SMALL ID COOLANT HOSE



Relative Cost ●○○○○

Applications Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F).

Standards SAE 20R3 Class D2 except hardness (70-85 Shore A durometer).

Construction EPDM tube, synthetic fiber reinforcement, EPDM cover.

Packaging Bulk lengths shipped on a reel, except 9.5mm (3/8"), 19.1 (3/4") and 25.4 (1") boxed. The 15m (49.2 ft) lengths are shipped in a bag. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number	
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Gates Item Number	15m / 49.2' Length
7.9 ±0.8	5/16 ±0.03	15.7* ±0.8	0.62* ±0.03	0.43	63	1.72	250	33.8	10	64	2.5	0.19	0.13	183	600	4230-0193	
9.5	3/8	17.5	0.69	0.43	63	1.72	250	33.8	10	76	3	0.24	0.16	152	500	4230-0129	
12.7	1/2	20.7	0.81	0.43	63	1.72	250	33.8	10	102	4	0.28	0.19	183	600	4230-0060	4230-4376
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	159	6.25	0.34	0.23	91	300	4230-0135	4230-4377
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.39	0.26	61	200	4230-0134	4230-4378
25.4	1	34.0 ±1.2	1.34 ±0.05	0.30	44	1.21	175	20.3	6	254	10	0.55	0.37	183	600	4230-0150	4230-4379

* Not per SAE
For smaller sizes, see page 39 (4251D)

3270 (SAFETY STRIPE™)

LIGHT DUTY SMALL ID COOLANT HOSE



Relative Cost ●○○○○

Applications Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F).

Standards SAE 20R3 Class D2 except hardness (80 duro), compression set, and thickness on some sizes.

Construction EPDM tube, synthetic fiber reinforcement, EPDM cover.

Packaging Coiled in a box, except bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	Feet	Bulk Length
6.35 ±0.8	1/4 ±0.03	12.7 ±0.8	0.50 ±0.03	0.41	60	1.72	250	33.8	10	89	3.50	0.13	0.09	168	550	3270-0029
7.9	5/16	15.7	0.62	0.41	60	1.72	250	33.8	10	111	4.38	0.21	0.14			
9.5	3/8	17.5	0.69	0.41	60	1.72	250	33.8	10	124	4.88	0.22	0.15			
12.7	1/2	19.6 *	0.77*	0.41	60	1.72	250	33.8	10	137	5.38	0.24	0.16			
15.9	5/8	22.6 *	0.89*	0.41	60	1.72	250	27.0	8	159	6.25	0.28	0.19	76	250	3270-4382
19.1	3/4	25.9 *	1.02*	0.34	50	1.38	200	23.6	7	178	7.00	0.33	0.22	76	250	3270-4383
25.4 ±1.5	1 ±0.06	34.0 ±1.20	1.34 ±0.05	0.31	45	1.21	175	20.3	6	238	9.38	0.55	0.37			

* Thinner than SAE

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

4040A

STANDARD WINDSHIELD WIPER/ VACUUM TUBING



- Relative Cost** ●○○○○
- Applications** Windshield washer lines and engine vacuum lines. Also suitable for coolant overflow or vent, or pressure sensor tubing. Not for conveying fuel or oil.
- Temperature** -40°C to +125°C (-40°F to +257°F).
- Standards** SAE 1037, SAE 942, SAE J200 M4CA710 A25 B35 C32 EA14 F19.
- Construction** EPDM tube with no reinforcement.
- Packaging** Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting with or without hose clamps. (pages 127 - 133)

ID		Size Fitting		OD		Work. Press. Max.		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number	Gates Item Number
mm	in.	mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length	50 ft. Length
2.8 +.64/- .51	7/64 +.025/- .020	3.2	1/8	5.6 ±0.8	0.22 ±0.03	0.17	25	81	24	38	1.5	0.021	0.014	305	1000	4040-0260	4040-4101
3.9 ±0.40	5/32 ±0.016	4.8	3/16	7.9	0.31	0.17	25	81	24	38	1.5	0.043	0.029	305	1000	4040-0387	4040-4104
5.6	7/32	6.4	1/4	10.7	0.42	0.17	25	81	24	51	2	0.078	0.053	457	1500	4040-0269	4040-4107
6.4 ±0.51	1/4 ±0.02	7.9	5/16	11.4	0.45	0.17	25	81	24	51	2	0.086	0.058	305	1000	4040-0580	4040-4110
7.3	9/32	9.5	3/8	11.1	0.44	0.17	25	81	24	64	2.5	0.046	0.031	305	1000	4040-0136	
7.9	5/16	9.5	3/8	12.7	0.50	0.17	25	81	24	64	2.5	0.094	0.063	244	800	4040-0370	
9.5	3/8	11.1	7/16	15.9	0.63	0.17	25	81	24	76	3	0.150	0.101	91	300	4040-4361	4040-4359

4251D

REINFORCED WINDSHIELD WIPER/ VACUUM HOSE



- Relative Cost** ●○○○○
- Applications** Windshield washer lines, engine vacuum lines, and coolant hose. Also suitable for coolant overflow or vent. Not for conveying fuel or oil.
- Temperature** -40°C to +125°C (-40°F to +257°F).
- Standards** Similar to SAE 20R3 Class D2, except hardness (80 duro), compression set and OD (thickness).
- Construction** EPDM tube, synthetic fiber reinforcement, EPDM cover.
- Packaging** Bulk lengths shipped on a reel except 4251-0122 and 4251-0125 shipped in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting with or without hose clamps. (pages 127 - 133)

ID		Size Fitting		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number	Gates Item Number
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	m	ft.	Bulk Length	50 ft. Length
4.1 ±0.5	5/32 ±0.02	4.8	3/16	9.7 ±0.8	0.38 ±0.03	0.34	50	1.72	250	88	26	**	**	0.09	0.06	152	500	4251-0119	4251-4115
5.6	7/32	6.4	1/4	10.9	0.43	0.34	50	1.72	250	88	26	**	**	0.10	0.07	244	800	4251-0122***	4251-4118
6.4	1/4	7.9	5/16	12.4	0.49	0.34	50	1.72	250	88	26	**	**	0.13	0.09	244	800	4251-0125	4251-4121

** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

4230SB (BLUE STRIPE™), 4230RS (RED STRIPE™), 4230RK

PREMIUM PERFORMANCE

SMALL ID COOLANT HOSE

Relative Cost ●○○○○

Applications Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil. Also available with a red stripe (4230RS), or no stripe (4230RK) for color coding supply/return connections with minimum order quantity.

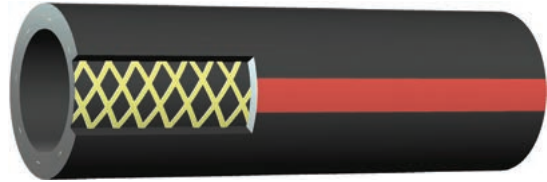
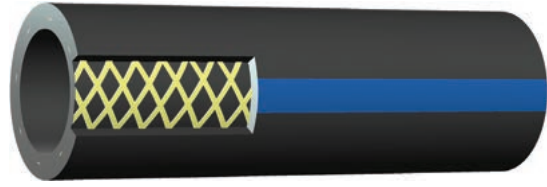
Temperature -40°C to +135°C (-40°F to +275°F) and ambient air to 150°C (302°F) when used in a coolant hose application.

Standards SAE 20R3 EC Class D1 or D2.

Construction EPDM tube, aramid fiber reinforcement, EPDM cover.

Packaging Bulk lengths coiled in a box, except as noted. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)



ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number	Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	4230SB	4230RS	4230RK
6.4 ±0.8	1/4 ±0.03	14.5 * ±0.8	0.57 * ±0.03	0.43	63	1.72	250	33.8	10			0.15	0.10	152	500			4230-7143
7.9	5/16	15.7 *	0.62 *	0.43	63	1.72	250	33.8	10			0.18	0.12	152	500			4230-4720 (reel)
9.5	3/8	17.5	0.68	0.43	63	1.72	250	33.8	10	127	5	0.21	0.14	152	500	4230-4114	4230-0084	4230-3301 (650 ft reel)
12.7	1/2	20.7	0.81	0.52	75	2.07	300	33.8	10	152	6	0.27	0.18	76	250	4230-4229 reel	***	***
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	178	7	0.31	0.21	76	250	4230-4112	4230-0083	4230-6448 reel ***
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.39	0.26	61	200	4230-4109	***	4230-0198 reel ***
25.4	1	34.0 ±1.2	1.34 ±.05	0.30	44	1.21	175	20.3	6	229	9	0.49	0.33	46	150	4230-4107	***	***

* Not per SAE

*** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

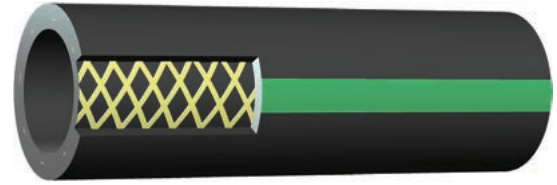
Brake

Accessories

Belts

3269S (GREEN STRIPE™)

THICK WALL, SMALL ID COOLANT HOSE



- Relative Cost** ●●○○○
- Applications** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.
- Temperature** -40 °C to +135 °C (-40 °F to +275 °F).
- Standards** SAE 20R1 EC Class D1. Wall thickness is 4.95±0.65mm (0.195±0.025 inch).
- Construction** EPDM tube, aramid fiber reinforcement, EPDM cover.
- Packaging** All 50 foot lengths are coiled in a box, and 300 foot lengths are on a reel. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	50 ft. Length	300 ft. Length
9.5 ±0.8	3/8 ±0.03	19.4	0.76	0.69	100	2.76	400	33.8	10	140	5.5	0.27	0.18		3259-0033
12.7	1/2	22.6	0.89	0.72	105	2.93	425	33.8	10	152	6	0.33	0.22	3269-4414	3269-0004
15.9	5/8	25.8	1.02	0.66	95	2.59	375	27.0	8	178	7	0.40	0.27	3269-4416	3269-1015
19.1	3/4	29.0	1.14	0.55	80	2.24	325	27.0	8	203	8	0.46	0.31	3269-4417	3269-1016
22.2	7/8	32.1	1.26	0.55	80	2.24	325	23.7	7	229	9	0.52	0.35	3269-4419	
25.4	1	35.3	1.39	0.52	75	2.07	300	23.7	7	254	10	0.58	0.39	3269-4418	3269-1017
31.8	1 1/4	41.7	1.64	0.48	70	1.90	276	16.9	5	292	11.5	0.70	0.47	3269-4411	

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

3230 (EPDM)

METRIC SMALL ID COOLANT HOSE (EUROPEAN MARKET ONLY)



- Relative Cost** ●○○○○
- Applications** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.
- Temperature** -50 °C to +100 °C (-58 °F to +212 °F) continuous, to 110 °C (230 °F) intermittent.
- Standards** DIN 73411 Class A except tolerances.
- Construction** EPDM tube, rayon reinforcement, EPDM cover.
- Packaging** Bulk lengths are 15 meters coiled in a box with knock-out lid.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	15m Length
8 ±0.8	5/16 ±0.03	16 ±0.8	0.63 ±0.03	0.50	73	1.20	174	*	*	65	2.6	0.18	0.12	3230-12081
10	3/8	18	0.71	0.50	73	1.20	174	*	*	75	3.0	0.22	0.14	3230-12101
12	1/2	20	0.79	0.50	73	1.20	174	*	*	85	3.3	0.24	0.16	3230-12121
15	5/8	23	0.91	0.50	73	1.20	174	*	*	110	4.3	0.30	0.20	3230-12151
17	11/16	25	0.98	0.50	73	1.20	174	*	*	120	4.7	0.33	0.22	3230-12171
19	3/4	27	1.06	0.50	73	1.20	174	*	*	135	5.3	0.35	0.24	3230-12191
22	7/8	31 ±1.0	1.22 ±0.04	0.50	73	1.00	145	*	*	170	6.7	0.46	0.31	3230-12221

* No specification requirement



4230S, 4230SS

OIL RESISTANT SMALL ID COOLANT HOSE



Relative Cost ●●○○○

Applications Engine coolant hose such as cab heater or oil cooler. Also suitable for crank case vent, water, fuel, or oil.

Temperature -40°C to +100°C (-40°F to +212°F).

Standards SAE 20R3 Class B tube, Class C cover.

Construction Nitrile tube, synthetic fiber reinforcement, neoprene cover.

Packaging Bulk lengths coiled in a box. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
9.5 ±0.8	3/8 ±0.03	17.5 ±0.8	0.68 ±0.03	0.52	75	2.07	300	33.8	10	76	3	0.24	0.16	107	350	4230-0148
12.7	1/2	20.7	0.81	0.52	75	2.07	300	33.8	10	102	4	0.28	0.19	84	275	4230-0149
15.9	5/8	23.9	0.94	0.52	75	2.07	300	27.0	8	159	6.25	0.36	0.24	76	250	4230-0145
19.1	3/4	27.1	1.06	0.52	75	2.07	300	23.6	7	191	7.5	0.49	0.33	244	800	4230-0146
25.4	1	34.0 ±1.2	1.34 ±.05	0.52	75	2.07	300	20.3	6	254	10	0.64	0.43	213	700	4230-0147

3230 (3231 EUROPE & MEXICO)

HIGH TEMPERATURE SILICONE SMALL ID COOLANT HOSE



Relative Cost ●●●○○

Applications Engine coolant hose for extreme temperature exposure. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -54°C to +177°C (-65°F to +350°F).

Standards SAE 20R3 HT Class A.

Construction Orange silicone rubber tube, synthetic fiber reinforcement, silicone rubber cover.

Packaging Bulk lengths coiled in a box. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number (EU and US)	Gates Item Number (US only)
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	25 ft. Length	50 ft. Length
9.5 ±0.8	3/8 ±0.03	17.5 ±0.8	0.68 ±0.03	0.43	63	1.72	250	33.8	10	76	3	0.25	0.17	3230-0039	3230-0298
12.7	1/2	20.7	0.81	0.43	63	1.72	250	33.8	10	102	4	0.31	0.21	3230-0040	
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	159	6.25	0.39	0.26	3230-0041	3230-0285
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.43	0.29	3230-0042	3230-0289
25.4	1	34.0 ±1.2	1.34 ±.05	0.30	44	1.21	175	20.3	6	254	10	0.61	0.41	3230-0044	3230-0293, 3230-0002 (200 ft reel)

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



4040T

HIGH TEMPERATURE SILICONE VACUUM TUBING



Relative Cost ●○○○○



Applications Differential pressure sensor tubing and vacuum lines for extreme temperatures. Also suitable for coolant overflow or vent. Not for conveying fuel or oil.



Temperature -55 °C to +177 °C (-67 °F to +350 °F).



Standards SAE J200 M2GE 705 Z1(60-70 Shore A).



Construction Orange silicone tube without reinforcement.



Packaging Coiled in a plastic clamshell container. Custom lengths available with minimum order quantity.



Couplings Hose bead fitting with or without hose clamps. (pages 127 - 133)

ID		Size Fitting		OD		Work. Press. Max.		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	6 ft. Length
2.77 +0/-0.8	0.109 +0/-0.03	3.2	1/8	5.8	0.229	*	*	85	25	25	1	0.021	0.014	4040-4140
3.96	.156	4.8	3/16	7.0	0.276	*	*	85	25	38	1.5	0.039	0.026	4040-4141
5.54	.218	6.4	1/4	8.6	0.338	*	*	85	25	38	1.5	0.050	0.033	4040-4142
6.35	.250	7.9	5/16	9.4	0.370	*	*	85	25	38	1.5	0.057	0.038	4040-4143

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4261 (4275 EUROPE)

FORMED COOLANT HOSE - STANDARD



SHAPES

Relative Cost ●●○○○



Applications Engine coolant hose with 90° bend. Also suitable for air or water. Not for conveying fuel or oil.



Temperature -40°C to +135°C (-40°F to +275°F).



Standards SAE 20R3 EC Class D1 (under 25mm ID), SAE 20R4 EC Class D1 (over 25mm ID)



Construction EPDM tube, synthetic fiber reinforcement, EPDM cover.



Packaging Boxed.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)








	ID		OD		Arm Lengths		Expanded End Length		Bend Radius		Gates Item Number
	mm	in.	mm	in.	mm	inch	mm	inch	mm	in.	
SCR	6.35 ±0.8	1/4 ±0.03	12.7 ±0.8	0.50 ±0.03	102 x 152	4 x 6			25.4	1	4257-0083
	6.4	1/4	12.7	0.50	102 x 305	4 x 12			25.4	1	4257-0001
	7.9	5/16	14.9	0.59	102 x 152	4 x 6			25.4	1	4257-0002
	7.9	5/16	14.9	0.59	102 x 305	4 x 12			25.4	1	4257-0003
	9.5	3/8	16.5	0.65	102 x 152	4 x 6			25.4	1	4257-0004
	9.5	3/8	16.5	0.65	102 x 305	4 x 12			25.4	1	4257-0005
Exhaust	12.7	1/2	20.7	0.81	102 x 152	4 x 6			25.4	1	4261-1676
	12.7	1/2	20.7	0.81	102 x 305	4 x 12			25.4	1	4261-1677
	12.7	1/2	20.7	0.81	102 x 457	4 x 18			25.4	1	4261-1678
	12.7	1/2	20.7	0.81	203 x 457	8 x 18			25.4	1	4261-1679
	12.7	1/2	20.7	0.81	102 x 610	4 x 24			25.4	1	4261-1680
	12.7	1/2	20.7	0.81	102 x 914	4 x 36			25.4	1	4261-1681
Air	15.9	5/8	23.9	0.94	102 x 152	4 x 6			25.4	1	4261-1682
	15.9	5/8	23.9	0.94	102 x 305	4 x 12			25.4	1	4261-1683
	15.9	5/8	23.9	0.94	102 x 457	4 x 18			25.4	1	4261-1684
	15.9	5/8	23.9	0.94	203 x 457	8 x 18			25.4	1	4261-1685
	15.9	5/8	23.9	0.94	102 x 610	4 x 24			25.4	1	4261-1686
	15.9	5/8	23.9	0.94	102 x 914	4 x 36			25.4	1	4261-1687
Refrigerant	15.9	5/8	23.9	0.94	102 x 1219	4 x 48			25.4	1	4261-1688
	15.9	5/8	23.9	0.94	102 x 1524	4 x 60			25.4	1	4261-1689
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 152	4 x 6	76.2*	3*	25.4	1	4257-0209
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 457	4 x 18	88.9*	3.5*	25.4	1	4257-0210
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 838	4 x 33	101.6*	4*	25.4	1	4257-0211
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 152	4 x 6	76.2	3	25.4	1	4257-0009
Brake	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 305	4 x 12	76.2	3	25.4	1	4257-0010
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	203 x 457	8 x 18	177.8	7	25.4	1	4257-0011
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 610	4 x 24	76.2	3	25.4	1	4257-0012
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	203 x 864	8 x 34	101.6	4	25.4	1	4257-0212
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 914	4 x 36	76.2	3	25.4	1	4257-0013
	15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 1524	4 x 60	76.2	3	25.4	1	4257-0014
Accessories	19.0	3/4	27.0	1.06	102 x 152	4 x 6			25.4	1	4261-1690
	19.0	3/4	27.0	1.06	102 x 305	4 x 12			25.4	1	4261-1691
	19.0	3/4	27.0	1.06	102 x 457	4 x 18			25.4	1	4261-1692
	19.0	3/4	27.0	1.06	102 x 610	4 x 24			25.4	1	4261-1693
	19.0	3/4	27.0	1.06	203 x 610	8 x 24			25.4	1	4261-1694
	19.0	3/4	27.0	1.06	102 x 914	4 x 36			25.4	1	4261-1695
Belts	19.0	3/4	27.0	1.06	102 x 1219	4 x 48			25.4	1	4261-1696
	19.0	3/4	27.0	1.06	102 x 1524	4 x 60			25.4	1	4261-1697
	38.1	1 1/2	4.95±0.65 wall	.195±.025 wall	203 x 305	8 x 12			38.1	1.5	4276-8500
	44.5	1 3/4	4.95±0.65 wall	.195±.025 wall	254 x 305	10 x 12			44.5	1.75	4276-8501
	50.8	2	5.35±1.05 wall	0.21±0.04 wall	254 x 356	10 x 14			76.2	3	4276-8502
	57.2	2 1/4	5.35±1.05 wall	0.21±0.04 wall	254 x 356	10 x 14			57.2	2.25	4276-8503

* Expanded end is on the long arm of the hose.

4278 (EUROPE)

FORMED COOLANT HOSE - STANDARD SHAPES (EUROPEAN MARKET ONLY)



-  **Relative Cost** ●●○○○
-  **Applications** Engine coolant hose with 90° bend. Also suitable for air or water. Not for conveying fuel or oil.
-  **Temperature** -40°C to +135°C (-40°F to +275°F).
-  **Standards** SAE 20R4 EC Class D2, DIN 73411 Class A.
-  **Construction** EPDM tube, aramid fiber reinforcement, EPDM cover.
-  **Packaging** Boxed.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Arm Lengths		Gates Item Number
mm	inch	mm	inch	MPa	psi	mm	inch	
10 ± 0.8	3/8	19.9 ± 0.8	0.78	0.57	83	150	5.91	4278-17023
12	1/2	21.9	0.86	0.57	83	150	5.91	4278-17024
15	5/8	24.9	0.98	0.57	83	150	5.91	4278-17025
18	11/16	27.9	1.10	0.46	67	150	5.91	4278-17026
22	7/8	31.9	1.26	0.40	58	150	5.91	4278-17027
25	1	34.9	1.37	0.40	58	150	5.91	4278-17028
28	1 1/8	37.9	1.49	0.30	44	200	7.87	4278-17029
30	1 3/16	39.9	1.57	0.30	44	200	7.87	4278-17030
32	1 1/4	41.9	1.65	0.30	44	200	7.87	4278-17031
35	1 3/8	44.9	1.77	0.28	41	300	11.81	4278-17032
38	1 1/2	47.9	1.89	0.28	41	300	11.81	4278-17033
40	1 9/16	49.9	1.96	0.25	36	300	11.81	4278-17034
45	1 3/4	54.9	2.16	0.25	36	300	11.81	4278-17035
50	2	60.7	2.39	0.23	33	300	11.81	4278-17036
55	2 1/8	65.7	2.59	0.21	30	300	11.81	4278-17037
60	2 3/8	70.7	2.78	0.18	26	300	11.81	4278-17038
65	2 9/16	75.7	2.98	0.18	26	300	11.81	4278-17041
70 ± 1.6	2 3/4	80.7	3.18	0.16	23	300	11.81	4278-17042
75	3	85.7	3.37	0.14	20	300	11.81	4278-17043
80	3 1/8	90.7	3.57	0.12	17	300	11.81	4278-17044

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4281 (ELBOWS)

HIGH TEMPERATURE SILICONE FORMED COOLANT HOSE (EUROPEAN MARKET ONLY)



Relative Cost ●●●●●

Applications Engine coolant hose with 90° bend for external exposure to extreme temperatures. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -50 °C to +180 °C (-58 °F to +356 °F).

Standards SAE 20R1 HT Class A except burst.

Construction Green silicone rubber tube, polyester fiber reinforcement, green silicone rubber cover with wrapped appearance.

Packaging Boxed.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Arm Lengths		90° Elbow Centerline Bend Radius		
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	in	mm	in	Item Number
10 ±0.5	3/8	20 +1/-0.75	0.79	0.57	83	2.20	319	33.9	10.0	150	5.9	15	0.6	4281-17123
12	1/2	22	0.87	0.57	83	1.90	276	33.9	10.0	150	5.9	18	0.7	4281-17124
15	5/8	25	0.98	0.57	83	1.60	232	27.1	8.0	150	5.9	23	0.9	4281-17125
18+0.5/-0.75	11/16	28 ± 1	1.10	0.46	67	1.20	174	27.1	8.0	150	5.9	27	1.1	4281-17126
22	7/8	32	1.26	0.40	58	1.00	145	23.7	7.0	150	5.9	33	1.3	4281-17127
25	1	35	1.38	0.40	58	1.00	145	23.7	7.0	150	5.9	38	1.5	4281-17128
28	1 1/8	38	1.50	0.30	44	0.90	131	20.3	6.0	200	7.9	42	1.7	4281-17129
30	1 3/16	40	1.57	0.30	44	0.90	131	16.9	5.0	200	7.9	45	1.8	4281-17130
32	1 1/4	42	1.65	0.30	44	0.90	131	13.5	4.0	200	7.9	48	1.9	4281-17131
35	1 3/8	45	1.77	0.28	41	0.80	116	10.2	3.0	300	11.8	53	2.1	4281-17132
38	1 1/2	48	1.89	0.28	41	0.80	116	7.1	2.1	300	11.8	57	2.2	4281-17133
40	1 9/16	50	1.97	0.25	36	0.70	102	6.8	2.0	300	11.8	60	2.4	4281-17134
45	1 3/4	55	2.17	0.25	36	0.70	102	5.4	1.6	300	11.8	68	2.7	4281-17135
50+0.5/-1	2	60 +1/-1.25	2.36	0.23	33	0.65	94	4.1	1.2	300	11.8	75	3.0	4281-17136
55	2 1/8	65	2.56	0.21	30	0.60	87	3.4	1.0	300	11.8	83	3.2	4281-17137
60	2 3/8	70	2.76	0.18	26	0.55	80	3.4	1.0	300	11.8	90	3.5	4281-17138
65	2 9/16	75	2.95	0.18	26	0.52	75	2.7	0.8	300	11.8	98	3.8	4281-17141
70	2 3/4	80	3.15	0.16	23	0.50	73	2.7	0.8	300	11.8	105	4.1	4281-17142
75	3	85	3.35	0.14	20	0.45	65	2.7	0.8	300	11.8	113	4.4	4281-17143

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake







Accessories

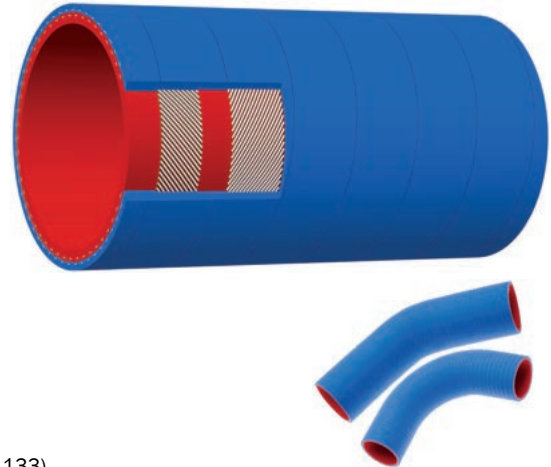
Belts

4177 (ELBOWS)

HIGH TEMPERATURE SILICONE FORMED COOLANT HOSE - STANDARD SHAPES

Relative Cost ●●●●●

-  **Applications** Engine coolant hose with 45° or 90° bend for external exposure to extreme temperatures. Also suitable for air or water. Not for conveying fuel or oil.
-  **Temperature** -54°C to +177°C (-65°F to +350°F).
-  **Standards** SAE 20R1 HT Class A.
-  **Construction** Orange silicone rubber tube, polyester fiber reinforcement, blue silicone rubber cover with wrapped appearance.
-  **Packaging** Individually bagged and boxed.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)



ID		OD		Work. Press. Max.		Burst Minimum		Arm Lengths		90° Elbow Centerline Bend Radius			45° Elbow Centerline Bend Radius		
mm	in.	mm	in.	MPa	psi	MPa	psi	mm	inch	mm	inch	Item Number	mm	inch	Item Number
44.5	1 3/4	53.9	2.12	0.39	56	1.54	224	152	6	44.5	1.75	4177-7013	44.5	1.75	4177-7012
50.8	2	60.3	2.37	0.34	50	1.37	199	152	6	101.6	4	4177-7005	101.6	4	4177-7014
50.8	2	60.3	2.37	0.34	50	1.37	199	305	12	101.6	4	4177-7016			
57.2	2 1/4	66.6	2.62	0.30	44	1.21	175	152	6	57.2	2.25	4177-7006	57.2	2.25	4177-7015
57.2	2 1/4	66.6	2.62	0.30	44	1.21	175	305	12	57.2	2.25	4177-7017			
63.5	2 1/2	73.0	2.87	0.26	37	1.03	149	152	6	63.5	2.5	4177-7007	63.5	2.5	4177-7000
63.5	2 1/2	73.0	2.87	0.26	37	1.03	149	305	12	63.5	2.5	4177-7018			
69.9	2 3/4	79.3	3.12	0.21	31	0.85	124	152	6	88.9	3.5	4177-7008	88.9	3.5	4177-7001
69.9	2 3/4	79.3	3.12	0.21	31	0.85	124	305	12	88.9	3.5	4177-7019			
76.2	3	85.7	3.37	0.17	25	0.69	100	152	6	76.2	3	4177-7009	76.2	3	4177-7002
88.9	3 1/2	98.4	3.87	0.17	25	0.69	100	152	6	88.9	3.5	4177-7010	88.9	3.5	4177-7003
101.6	4	111.1	4.37	0.17	25	0.69	100	152	6	101.6	4	4177-7011	101.6	4	4177-7004

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4280MH

STANDARD FORMED COOLANT HOSE



Relative Cost ●●○○○



Applications Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.



Temperature -40°C to +125°C (-40°F to +257°F).



Standards SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size.



Construction EPDM tube, synthetic knit reinforcement, EPDM cover.



Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC Class D1											
6.35 ±0.8	1/4 ±0.03	12.35* ±0.8	0.49* ±0.03	1.72	250	33.8	10	12.7	0.50	0.12	0.08
7.0	0.27	13.0*	0.51*	1.72	250	33.8	10	12.7	0.50	0.13	0.09
7.9	5/16	13.9*	0.55*	1.72	250	33.8	10	15.0	0.59	0.14	0.09
9.5	3/8	16.5	0.65	1.72	250	33.8	10	14.5	0.57	0.17	0.11
11.1	7/16	19.1	0.75	1.72	250	33.8	10	16.0	0.63	0.20	0.14
12.7	1/2	20.7	0.81	1.72	250	33.8	10	19.1	0.75	0.24	0.16
15.9	5/8	23.9	0.94	1.72	250	27.0	8	26.9	1.06	0.28	0.19
19.0	3/4	27.0	1.06	1.38	200	23.6	7	27.9	1.10	0.33	0.22
20.3	.80	28.3	1.11	1.38	200	20.3	6	29.7	1.17	0.35	0.24
22.2	7/8	30.2	1.19	1.38	200	20.3	6	30.7	1.21	0.38	0.25

* Thin wall dimensions

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC Class D1											
18.8 ±0.8	0.74 ±0.03	4.95 ±0.65	0.195 ±0.025	1.03	150	**	**	27.9	1.10	0.38	0.26
20.8	.82	4.95	0.195	1.03	150	**	**	30.2	1.19	0.42	0.28
22.1	.87	4.95	0.195	1.03	150	**	**	30.7	1.21	0.44	0.29
23.1	.91	4.95	0.195	0.97	140	**	**	38.1	1.50	0.46	0.31
25.4	1	4.95	0.195	0.97	140	**	**	39.6	1.56	0.50	0.33
27.0	1.06	4.95	0.195	0.97	140	**	**	41.4	1.63	0.55	0.37
28.6	1 1/8	4.95	0.195	0.97	140	**	**	41.4	1.63	0.53	0.36
30.2	1.19	4.95	0.195	0.90	130	**	**	43.2	1.70	0.58	0.39
31.8	1 1/4	4.95	0.195	0.90	130	**	**	44.5	1.75	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	52.3	2.06	0.63	0.42
34.9	1 3/8	4.95	0.195	0.90	130	**	**	54.1	2.13	0.71	0.48
36.6	1.44	4.95	0.195	0.83	120	**	**	54.9	2.16	0.74	0.50
38.1	1 1/2	4.95	0.195	0.83	120	**	**	55.9	2.20	0.76	0.51
39.6	1.56	4.95	0.195	0.76	110	**	**	57.2	2.25	0.79	0.53
41.3	1 5/8	4.95	0.195	0.76	110	**	**	58.7	2.31	0.82	0.55
44.5	1 3/4	4.95	0.195	0.76	110	**	**	60.5	2.38	0.87	0.58
47.6	1 7/8	4.95	0.195	0.69	100	**	**	63.5	2.50	0.89	0.60
49.0	1.93	4.95	0.195	0.69	100	**	**	63.5	2.50	0.93	0.62
50.8	2	5.35 ±1.05	0.21 ±0.04	0.69	100	**	**	63.5	2.50	0.93	0.63
53.8	2.12	5.35	0.21	0.62	90	**	**	66.8	2.63	1.02	0.68
57.2	2 1/4	5.35	0.21	0.62	90	**	**	69.9	2.75	1.04	0.70
60.5	2.38	5.35	0.21	0.55	80	**	**	74.9	2.95	1.11	0.75
63.5	2 1/2	5.35	0.21	0.55	80	**	**	76.2	3.00	1.16	0.78
66.5	2.62	5.35	0.21	0.48	70	**	**	79.5	3.13	1.21	0.81
69.9 ±1.6	2 3/4 ±0.06	5.35	0.21	0.48	70	**	**	82.6	3.25	1.27	0.85
76.2	3	5.35	0.21	0.41	60	**	**	92.2	3.63	1.42	0.95
88.9	3 1/2	5.35	0.21	0.34	50	**	**	103.1	4.06	1.64	1.10
101.6***	4	5.35	0.21	0.27	40	**	**	114.3	4.50	1.89	1.27

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID

*** Contact Gates for availability.

4280GN

LIGHT DUTY / NON-ECR FORMED COOLANT HOSE



Relative Cost ●○○○○

Applications Engine coolant hose connected to plastic fittings, or not requiring electrochemical resistance. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40 °C to +125 °C (-40 °F to +257 °F).

Standards SAE 20R3 Class D2 or SAE 20R4 Class D2 depending on size.

Construction EPDM tube, synthetic knit reinforcement, EPDM cover.

Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged or bulk bagged in the box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 Class D2											
15.9 ±0.8	5/8 ±0.03	23.9 ±0.8	0.94 ±0.03	1.72	250	27.0	8	24.1	0.95	0.28	0.19
19.0	3/4	27.0	1.06	1.38	200	23.6	7	25.4	1.00	0.33	0.22

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 Class D2											
25.4 ±0.8	1 ±0.03	4.95 ±0.65	0.195 ±0.025	0.97	140	**	**	38.1	1.50	0.50	0.33
28.6	1 1/8	4.95	0.195	0.97	140	**	**	40.6	1.60	0.53	0.36
30.2	1.19	4.95	0.195	0.90	130	**	**	41.1	1.62	0.58	0.39
31.8	1 1/4	4.95	0.195	0.90	130	**	**	41.7	1.64	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	48.3	1.90	0.63	0.42
34.9	1 3/8	4.95	0.195	0.90	130	**	**	48.8	1.92	0.71	0.48
36.6	1.44	4.95	0.195	0.83	120	**	**	50.8	2.00	0.74	0.50
38.1	1 1/2	4.95	0.195	0.83	120	**	**	52.3	2.06	0.76	0.51
39.6	1.56	4.95	0.195	0.76	110	**	**	53.3	2.10	0.79	0.53
44.5	1 3/4	4.95	0.195	0.76	110	**	**	55.9	2.20	0.87	0.58
47.6	1 7/8	4.95	0.195	0.69	100	**	**	58.4	2.30	0.89	0.60
50.8	2	5.35 ±1.05	0.21 ±0.04	0.69	100	**	**	67.1	2.64	0.93	0.63

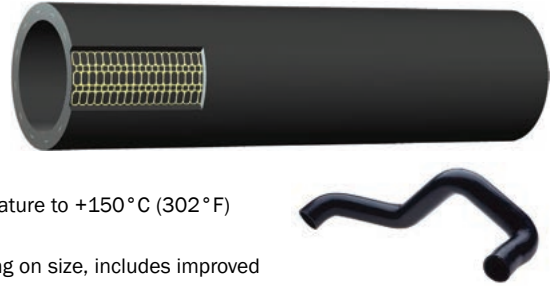
* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4276KR

HIGHER PRESSURE FORMED COOLANT HOSE



- Relative Cost** ●●●○○
- Applications** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.
- Temperature** -40°C to +125°C (-40°F to +257°F), with ambient temperature to +150°C (302°F) when used in a coolant application.
- Standards** SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size, includes improved burst strength.
- Construction** EPDM tube, aramid knit reinforcement, EPDM cover.
- Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC Class D1											
9.5 ±0.8	3/8 ±0.03	17.5 ±0.8	0.68 ±0.03	1.72	250	33.8	10	15.2	0.60	0.19	0.13
12.7	1/2	20.7	0.81	1.72	250	33.8	10	20.8	0.82	0.25	0.17
15.1	19/32	23.1	0.91	1.72	250	33.8	10	29.2	1.15	0.27	0.18
18.3	23/32	26.3	1.03	1.38	200	23.6	7	30.2	1.19	0.33	0.22
20.3***	0.80	28.3	1.11	1.38	200	20.3	6	31.8	1.25	0.37	0.25
22.2	7/8	30.2	1.19	1.38	200	20.3	6	33.3	1.31	0.37	0.25

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC Class D1											
23.1 ±0.8	0.91 ±0.03	4.95 ±0.65	0.195 ±0.025	1.38	200	**	**	43.7	1.72	0.45	0.30
24.4	0.96	4.95	0.195	1.38	200	**	**	44.5	1.75	0.48	0.32
25.4	1	4.95	0.195	1.38	200	**	**	46.0	1.81	0.49	0.33
28.6	1 1/8	4.95	0.195	1.38	200	**	**	48.0	1.89	0.55	0.37
30.2***	1.19	4.95	0.195	1.38	200	**	**	45.7	1.80	0.58	0.39
31.8	1 1/4	4.95	0.195	1.38	200	**	**	47.0	1.85	0.61	0.41
33.0	1.30	4.95	0.195	1.24	180	**	**	47.8	1.88	0.63	0.42
34.9	1 3/8	4.95	0.195	1.24	180	**	**	50.0	1.97	0.65	0.44
35.0	1.38	4.95	0.195	0.90	130	**	**	76.2	3.00	0.71	0.48
36.6	1.44	4.95	0.195	1.24	180	**	**	50.8	2.00	0.68	0.46
38.1	1 1/2	4.95	0.195	1.24	180	**	**	50.8	2.00	0.71	0.48
41.3	1 5/8	4.95	0.195	1.10	160	**	**	53.8	2.12	0.76	0.51
44.5	1 3/4	4.95	0.195	1.10	160	**	**	55.9	2.20	0.82	0.55
47.6	1 7/8	4.95	0.195	1.10	160	**	**	58.7	2.31	0.88	0.59
49.5***	1.95	4.95	0.195	1.10	160	**	**	68.1	2.68	0.91	0.61
50.8	2	5.35 ±1.05	0.21 ±0.04	1.10	160	**	**	68.6	2.70	0.92	0.62
53.8	2.12	5.35	0.21	1.10	160	**	**	69.9	2.75	0.98	0.66
57.2	2 1/4	5.35	0.21	1.10	160	**	**	79.5	3.13	1.03	0.69
60.5	2.38	5.35	0.21	0.83	120	**	**	82.6	3.25	1.10	0.74
63.5	2 1/2	5.35	0.21	0.83	120	**	**	84.1	3.31	1.15	0.77
69.9 ±1.6	2 3/4 ±0.06	5.35	0.21	0.83	120	**	**	84.1	3.31	1.34	0.90
76.2	3	5.35	0.21	0.69	100	**	**	95.3	3.75	1.44	0.97

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.
 *** Contact Gates for availability.



4256HY

FATIGUE RESISTANT FORMED COOLANT HOSE



Relative Cost ●●●●○

Applications Engine coolant hose under pressure impulsing or flexing. Also suitable for air or water. Not for conveying fuel or oil.

Temperature -40°C to +125°C (-40°F to +257°F), with ambient temperature to +150°C (302°F) when used in a coolant application.

Standards SAE 20R4 EC Class D1.

Construction EPDM tube, aramid knit reinforcement, EPDM cover.

Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
15.2 ±0.8	0.60 ±0.03	4.95 ±0.8	0.195 ±0.03	2.50	363	**	**	27.9	1.10	0.36	0.24
19.1	3/4	4.95	0.195	2.50	363	**	**	31.8	1.25	0.39	0.26
25.4	1	4.95	0.195	2.25	326	**	**	33.3	1.31	0.52	0.35
31.8	1 1/4	4.95	0.195	2.07	300	**	**	44.2	1.66	0.68	0.46
38.1	1 1/2	4.95	0.195	2.07	300	**	**	50.8	2.00	0.74	0.50
44.5	1 3/4	4.95	0.195	1.55	225	**	**	60.5	2.38	0.89	0.60
50.8 ±0.8	2 ±0.03	5.35 ±1.05	0.21 ±0.04	1.55	225	**	**	67.3	2.65	0.92	0.62
57.2	2 1/4	5.35	0.21	1.38	200	**	**	69.9	2.75	1.09	0.73
63.5	2 1/2	5.35	0.21	1.38	200	**	**	76.2	3.00	1.16	0.78
76.2 ±1.6	3 ±0.06	5.35	0.21	1.38	200	**	**	88.9	3.50	1.46	0.98
88.9	3 1/2	5.35	0.21	1.38	200	**	**	101.6	4.00	1.68	1.13

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4256SB (Blue Stripe™)

PREMIUM PERFORMANCE FORMED COOLANT HOSE



- Relative Cost** ●●●○○
- Applications** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.
- Temperature** -40 °C to +125 °C (-40 °F to +257 °F), with ambient temperature to +150 °C (302 °F) when used in a coolant application.
- Standards** SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size.
- Construction** EPDM tube, aramid knit reinforcement, EPDM cover.
- Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC Class D1											
15.9 ±0.8	5/8 ±0.03	23.9 ±0.8	0.94 ±0.03	1.72	250	27.0	8	28.7	1.13	0.28	0.19
19.0	3/4	27.0	1.06	1.72	250	23.6	7	30.2	1.19	0.33	0.22
20.3***	0.80	28.3	1.11	1.72	250	20.3	6	31.8	1.25	0.35	0.24
22.2	7/8	30.2	1.19	1.72	250	20.3	6	31.8	1.25	0.38	0.25

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC Class D1											
23.1 ±0.8	0.91 ±0.03	4.95 ±0.65	0.195 ±0.025	0.97	140	**	**	41.4	1.63	0.46	0.31
23.9	0.94	4.95	0.195	0.97	140	**	**	42.4	1.67	0.51	0.34
25.4	1	4.95	0.195	0.97	140	**	**	44.5	1.75	0.50	0.33
28.6	1 1/8	4.95	0.195	0.97	140	**	**	44.5	1.75	0.53	0.36
30.2***	1.19	4.95	0.195	0.97	140	**	**	44.5	1.75	0.58	0.39
31.8	1 1/4	4.95	0.195	0.90	130	**	**	44.5	1.75	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	54.1	2.13	0.63	0.42
34.9	1 3/8	4.95	0.195	0.90	130	**	**	54.1	2.13	0.71	0.48
36.6***	1.44	4.95	0.195	0.90	130	**	**	54.1	2.13	0.74	0.50
38.1	1 1/2	4.95	0.195	0.83	120	**	**	54.1	2.13	0.76	0.51
39.6***	1.56	4.95	0.196	0.83	120	**	**	54.1	2.13	0.79	0.53
41.3	1 5/8	4.95	0.195	0.83	120	**	**	57.2	2.25	0.82	0.55
44.5	1 3/4	4.95	0.195	0.76	110	**	**	57.2	2.25	0.87	0.58
47.6	1 7/8	4.95	0.195	0.76	110	**	**	60.5	2.38	0.89	0.60
49.0	1.93	4.95	0.195	0.69	100	**	**	60.5	2.38	0.93	0.62
50.8	2	5.35 ±1.05	0.21 ±0.04	0.69	100	**	**	63.5	2.50	0.93	0.63
57.2	2 1/4	5.35	0.21	0.62	90	**	**	69.9	2.75	1.04	0.70
60.5	2.38	5.35	0.21	0.62	90	**	**	73.2	2.88	1.11	0.75
63.5	2 1/2	5.35	0.21	0.55	80	**	**	76.2	3.00	1.16	0.78
66.5	2.62	5.35	0.21	0.55	80	**	**	79.2	3.12	1.21	0.81
69.9 ±1.6	2 3/4 ±0.06	5.35	0.21	0.48	70	**	**	79.2	3.12	1.27	0.85

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.
 *** Contact Gates for availability.



4256LS

HIGHER TEMPERATURE FORMED COOLANT HOSE



Relative Cost ●●●○○



Applications Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.



Temperature -40°C to +150°C (-40°F to +302°F), and ambient temperature to 165°C (329°F) if used in a coolant application.



Standards SAE 20R3 EC HT Class D3 or SAE 20R4 EC HT Class D3 depending on size.



Construction p-EPDM tube, aramid knit reinforcement, p-EPDM cover.



Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC Class D3											
8.0 ±0.8***	5/16 ±0.03	15.0 ±0.8	0.59 ±0.03	1.72	250	33.8	10			0.13	0.09
9.5	3/8	17.5	0.69	1.72	250	33.8	10	14.2	0.56	0.18	0.12
12.7	1/2	20.7	0.81	1.72	250	33.8	10	18.3	0.72	0.27	0.18
14.5	0.57	22.5	0.89	1.38	200	27.0	8	19.1	0.75	0.30	0.20

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC Class D3											
19.0 ±0.8	3/4 ±0.03	4.95 ±0.65	0.195 ±0.025	1.03	150	**	**	29.0	1.14	0.42	0.28
25.4	1	4.95	0.195	0.97	140	**	**	43.2	1.70	0.54	0.36
28.6***	1.12	4.95	0.195	0.90	130	**	**	44.5	1.75	0.60	0.40
31.8	1 1/4	4.95	0.195	0.90	130	**	**	50.8	2.00	0.64	0.43
38.1	1 1/2	4.95	0.195	0.83	120	**	**	50.8	2.00	0.76	0.51
44.5	1 3/4	4.95	0.195	1.21	175	**	**	66.0	2.60	0.94	0.63
50.8	2	5.35 ±1.05	0.21 ±0.04	0.76	110	**	**	66.8	2.63	1.06	0.71
57.0	2 1/4	5.35	0.21	0.62	90	**	**	69.9	2.75	1.21	0.81
62.5	2 1/2	5.35	0.21	0.62	90	**	**	76.2	3.00	1.31	0.88
66.7***	2 5/8	5.35	0.21	0.55	80	**	**	82.6	3.25	1.37	0.92
88.9***	3 1/2	5.35	0.21	0.34	50	**	**	101.6	4.00	1.90	1.28

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



DRIVEN BY POSSIBILITY™

HENN QUICK CONNECTORS

FOR COOLANT AND TURBOCHARGER SYSTEMS

MAKE THE RIGHT CONNECTION IN HIGH-TECH HOSE SYSTEMS.

At Gates, we provide high-tech hose connection systems for charge air cooler, turbo and coolant systems that offer innovative connection technology.

HENN Quick Connectors are designed for the standard VDA-style spigot. Due to their durability and quick assembly, they have been increasingly replacing conventional hose-bead connectors. Made of galvanized or stainless steel and manufactured in one piece ensures high stability and excellent corrosion properties.

Making the connection has never been easier with HENN Quick Connectors.

FEATURES + BENEFITS

- Short length
- Fast Assembly – No clamp to assemble
- Catch spring on the coupling eliminates one-sided catching
- 100% traceability with “Data Matrix”
- Low assembly and disassembly forces
- Anti-turn locking device
- Low system and assembly labor costs
- Meets VDA standards



DRIVEN BY POSSIBILITY™

HENN QUICK CONNECTORS:

RELIABLE HIGH-TECH HOSE CONNECTIONS.

When clamped hose connections leak or cause assembly problems, look to Gates for your solution. HENN Quick Connectors offer simple assembly with proven reliable technology, especially in tight spaces. No matter what kind of job you have, Gates has the hose solution that works as hard as you and your team.

SAFE AND INNOVATIVE CONNECTION TECHNOLOGY

INDUSTRIES + APPLICATIONS

- Truck + Bus
- Construction
- Agriculture
- Mining
- Charge Air Cooler
- Turbocharger
- Intake Manifold
- Radiator

HC TYPE	HOSE ID (IN)	HOSE ID (MM)	HC HOSE WALL THICKNESS (MM)	HC MAX. HOSE OD (MM)	HCW HOSE WALL THICKNESS (MM)	HCW MAX. HOSE OD (MM)
HC 32	1.50 to 1.56	38 to 39.6	2.5 to 5.2 +/- 0.6	50.0	-	-
HC 35	1.57 to 1.64	40 to 41.6	2.5 to 5.2 +/- 0.6	52.0	-	-
HC 38	1.74 to 1.81	44.3 to 45.9	2.5 to 5.2 +/- 0.6	56.3	-	-
HC 40	1.81 to 1.87	46 to 47.6	2.5 to 5.2 +/- 0.6	58.0	-	-
HC45/HCW45	2.0 to 2.07	51 to 52.6	2.5 to 5.2 +/- 0.6	63.0	5.2 to 7.1 +/- 0.6	66.5
HC50/HCW50	2.20 to 2.27	56 to 57.6	2.5 to 5.2 +/- 0.6	68.0	5.2 to 7.1 +/- 0.6	71.5
HC55/HCW55	2.40 to 2.46	61 to 62.6	2.5 to 5.2 +/- 0.6	73.0	5.2 to 7.1 +/- 0.6	76.5
HC60/HCW60	2.64 to 2.70	67 to 68.6	2.5 to 5.2 +/- 0.6	79.0	5.2 to 7.1 +/- 0.6	82.5
HC65/HCW65	2.83 to 2.90	72 to 73.6	2.5 to 5.2 +/- 0.6	84.0	5.2 to 7.1 +/- 0.6	87.5

PRODUCT SPECIFICATIONS FOR WATER:

- **PLUG:** Galvanized Steel
- **CATCH SPRINGS + COVER:**
Catch Springs: Stainless steel
Catch Spring Covering: PA 6.6/PA 6-blend
- **SEALING ELEMENT:** LSR
- **OPERATING PRESSURE:**
14.3 psi vacuum to 72.5 psi pressure (1 bar vacuum to 5 bar pressure)
- **TEMPERATURE RANGE:**
LSR -40°F to +275°F (-40°C to +135°C)

PRODUCT SPECIFICATIONS FOR AIR:

- **PLUG:** Stainless Steel
- **CATCH SPRINGS + COVER:**
Catch Springs: Stainless steel
Catch Spring Covering: PA 6.6/PA 6-blend
- **SEALING ELEMENT:** AEM or FPM
- **OPERATING PRESSURE:**
5.8 psi vacuum to 50 psi pressure (0.4 bar vacuum to 3.5 bar pressure)
- **TEMPERATURE RANGE:**
AEM -40°F to +320°F (-40°C to +160°C); FPM -4°F to +446°F (-20°C to +230°C)



DRIVEN BY POSSIBILITY



DRIVEN BY POSSIBILITY™

MODERN FUELS REQUIRE MODERN FUEL HOSE

BARRICADE™ FUEL INJECTION AND CARBURETION HOSE
WITH GREENSHIELD® TECHNOLOGY

INSTALLING BARRICADE™ PROTECTS AGAINST THE AGGRESSIVE FUEL MIXTURES OF TODAY'S MODERN FUELS, WHICH CAN DEGRADE BASIC RUBBER HOSE AND RESULT IN EARLY HOSE FAILURE.

BARRICADE™ OFFERS BEST-IN-CLASS WORKING PSI OF 225 FOR FUEL INJECTION AND WORKS WELL WITH BIODIESEL, UP TO B100, WITHOUT BREAKING A SWEAT.





FUEL

Low Pressure, Rubber Fuel Line

4219G / 4219XL	Standard fuel and oil hose	58
3225ST	Standard fuel and oil hose, metric sizes, European market	59
4324	Textile cover, European market	60
4219D	Higher temperature, pressure, and lower permeation	60
4219BG (Barricade™)	Standard low permeation, with plastic barrier layer	61
4219	Submersible, special construction for in-tank use	65
4219M	Standard marine fuel and oil hose	66
4219N	Marine fuel line, open (ventillated) environment	66
4219BM (Barricade™ Marine)	Marine fuel line, low permeation, with plastic barrier layer	67

Also see:

4202 (Hotline™)	Heated line	89
Steel or aluminum tube assemblies in the AIR Section		110

Low Pressure, Plastic Fuel Tubing

4327DT	Standard diesel fuel, nylon tubing	65
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High Pressure

3284AC / 3284SS (RLA 30R2)	Standard fuel and oil hose with higher pressure	61
4219BF (Barricade™ Fuel Injection)	Low permeation, fuel injection, with plastic barrier layer	63
4219BD	High temperature diesel and biodiesel fuel and fuel injection	64
3658E (C5E)	Fuel filter line, high pressure with wire braid, hard wall, used with couplings	122
3658F (C5M)	Marine fuel line, high pressure with wire braid, hard wall, used with couplings	67
3658BC (C5C XH)	Higher temperature diesel line, high pressure with wire braid, hard wall, used with couplings	76
3658D (C5D)	Higher temperature diesel line, high pressure with wire braid, hard wall, used with couplings	75

Gaseous Fuels

LP350, LPG Vapor 125 See Gates Industrial Hose Products catalog

Fuel Fill Hose

4663K	Standard flexible fill hose with embedded wire helix	68
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Also see:

Formed hose section below

Formed Hose

4278	Standard elbows, fuel fill, transfer, and vent	69
4278CN	Standard fuel fill, transfer and vent	83
4278BD	Biodiesel fill, transfer, and vent	69

Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts



4219G / 4219XL

STANDARD FUEL AND OIL HOSE



Relative Cost ●○○○○



Applications

Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, tank vent, crank case vent, or coolant bottle. Not for in-tank, gaseous fuels, or biodiesel above 20% (B20) at 51°C (124°F).



Temperature

-40°C to +125°C (-40°F to +257°F). Up to B5 biodiesel, 80°C (176°F) continuous or 100°C (212°F) intermittent. Up to B20, 51°C (124°F) maximum.



Standards

SAE 30R6 or SAE 30R7.



Construction

Nitrile tube, synthetic fiber reinforcement, nitrile/PVC cover.



Packaging

Bulk lengths shipped on a reel. Maximum 5 pieces. Custom lengths available with minimum order quantity.



Couplings

Hose bead fitting fastened with hose clamps. (pages 127 - 133) Also can use GC stem with crimp ring.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
3.2 ±0.4	1/8 ±.016	8.3 ±0.58	0.33 ±0.02	0.34	50	1.72	250	81	24	51	2	0.06	0.04	76	250	3225-4038
4.0	5/32	9.2	0.36	0.34	50	1.72	250	81	24	51	2	0.06	0.04	168	550	4219-0104
4.8	3/16	10.4	0.41	0.34	50	1.72	250	81	24	76	3	0.09	0.06	168	550	4219-0093
6.4	1/4	12.7	0.50	0.34	50	1.72	250	81	24	76	3	0.13	0.09	168	550	4219-0103
7.9	5/16	14.3	0.56	0.34	50	1.72	250	81	24	76	3	0.15	0.1	168	550	4219-0107
9.5	3/8	15.9	0.62	0.34	50	1.72	250	81	24	102	4	0.16	0.11	168	550	4219-0109
11.1 ±0.58	7/16 ±0.02	18.3 ±0.79	0.72 ±0.03	0.24	35	1.21	175	81	24	127	5	0.22	0.15	76	250	3225-4810
12.7	1/2	19.8	0.78	0.24	35	1.21	175	34	10	127	5	0.24	0.16	168	550	4219-0102
15.9 ±0.79	5/8 ±0.03	23.8 ±1.59	0.94 ±0.06	0.24	35	1.21	175	34	10	152	6	0.33	0.22	168	550	4219-0097
19.1	3/4	28.6	1.13	0.24	35	1.21	175	34	10	178	7	0.48	0.32	61	200	4219-0116

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

3225ST

**METRIC FUEL AND OIL HOSE
(EUROPEAN MARKET ONLY)**



- Relative Cost** ●○○○○
- Applications** Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, tank vent, or crank case vent. Not for in-tank, gaseous fuels, or biodiesel applications.
- Temperature** -40°C to +125°C (-40°F to +257°F). Up to B5 biodiesel, 80°C (176°F) continuous or 100°C (212°F) intermittent. Up to B20, 51°C (124°F) maximum.
- Standards** SAE 30R7, DIN 73379, tolerances excepted.
- Construction** Nitrile tube, synthetic fiber reinforcement, nitrile/PVC cover.
- Packaging** Bulk lengths shipped on a reel except 3225-10014 and 3225-10015 shipped in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	15m Length
3.2 ±0.40	1/8	7.7 ±0.58	0.30	0.76	110	3.03	440	81	24	71	2.8	0.05	0.034	3225-00050
4	5/32	9.2	0.36	0.76	110	3.03	440	81	24	76	3	0.07	0.05	3225-00051
5	13/64	10.6	0.42	0.76	110	3.03	440	81	24	76	3	0.09	0.06	3225-00055
6 ±0.50	1/4	12.0 ±0.63	0.47	0.76	110	3.03	440	81	24	79	3.1	0.12	0.08	3225-00052
7	9/32	13.1	0.52	0.76	110	3.03	440	81	24	89	3.5	0.13	0.09	3225-00056
8	5/16	14.0	0.55	0.76	110	3.03	440	81	24	91	3.6	0.13	0.09	3225-00053
10 ±0.63	3/8	17.0 ±0.63	0.67	0.76	110	3.03	440	81	24	114	4.5	0.19	0.13	3225-10014
12.0	15/32	19.05 ±0.79	0.75	0.76	110	3.03	440	34	10	127	5	0.24	0.16	3225-00054=10m

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4324

METRIC TEXTILE COVER FUEL AND OIL HOSE (EUROPEAN MARKET ONLY)



- Relative Cost** ●●○○○
- Applications** Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, tank vent, crank case vent, or coolant bottle. Not for in-tank, gaseous fuels, or biodiesel applications.
- Temperature** -30 °C to +100 °C (-22 °F to +212 °F).
- Standards** DIN 73379:1982.
- Construction** Nitrile+PVC/braided rayon.
- Packaging** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	15m Length
2.7 ±0.25	7/64 ±.010	7.0	0.28	1.00	145	3.00	435	*	*	*	*	0.040	0.03	4324-10047 ** 4324-10048 ***
3.2	1/8	7.0	0.28	0.60	87	2.30	334	*	*	*	*	0.044	0.03	4324-10050
4 ±0.30	5/32 ±0.012	9.0	0.35	0.60	87	2.30	334	*	*	*	*	0.068	0.05	4324-10051
5	3/16	10.0	0.39	0.60	87	2.30	334	*	*	*	*	0.080	0.05	4324-10055
6	1/4	11.0	0.43	0.60	87	2.30	334	*	*	*	*	0.090	0.06	4324-10052
7 ±0.40	9/32 ±0.016	12.0	0.47	0.60	87	2.30	334	*	*	*	*	0.100	0.07	4324-10056
8	5/16	13.0	0.51	0.60	87	2.30	334	*	*	*	*	0.110	0.07	4324-10053
10 ±0.50	3/8 ±0.020	15.0	0.59	0.60	87	2.30	334	*	*	*	*	0.133	0.09	4324-10054 (10m length)

* No specification requirement.
 ** ECO rubber tube/braided rayon reinforcement, to meet German automotive standards. -40° to +110°C (-40° to +230°F)
 *** HNBR rubber tube/braided rayon reinforcement, to meet German automotive standards. -40° to +110°C (-40° to +230°F)

4219D

HIGHER TEMPERATURE AND PRESSURE FUEL AND OIL HOSE



- Relative Cost** ●●●●○
- Applications** Fuel line and fuel injection for high heat and flexibility. Also suitable for low pressure hydraulic oil, engine oil, or crank case vent. Not for in-tank or gaseous fuels.
- Temperature** -40 °C to +135 °C (-40 °F to +275 °F) with peaks up to 150 °C (302 °F). Biodiesel B100 up to 135 °C (275 °F).
- Standards** SAE 30R9, EPA Non-Road Fuel Lines (<15g/m²/day) for spark ignition engines.
- Construction** FKM/CPE tube, synthetic fiber braid reinforcement, CPE cover.
- Packaging** Bulk lengths shipped on a reel or in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133) Also can use GC stem with crimp ring.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	25 ft. Length	550 ft. Reel	Pallet Box Length
6.4 ±0.4	1/4 ±.016	12.7 ±0.58	0.50 ±0.02	1.24	180	6.2	900	81	24	76	3	0.13	0.09		4219-4102	4219-5147 =5000ft
7.9	5/16	14.3	0.56	1.24	180	6.2	900	81	24	76	3	0.15	0.1	4219-3682	4219-3656	4219-6883 =4000ft
9.5	3/8	15.9	0.62	1.24	180	6.2	900	81	24	102	4	0.16	0.11		4219-3072	

3284AC / 3284SS (RLA 30R2)

HIGHER PRESSURE FUEL AND OIL HOSE



- Relative Cost** ●●○○○
- Applications** Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, or air. Not for in-tank or gaseous fuels.
- Temperature** -40°C to +100°C (-40°F to +212°F), biodiesel up to B-20, max. 52°C. (125°F)
- Standards** SAE 30R2 Type 1. Burst, vacuum, and bend radius exceed SAE 30R2. Also JDS-G253 (non-conductive).
- Construction** Nitrile tube, synthetic fiber reinforcement, nitrile/PVC cover.
- Packaging** Bulk lengths shipped on a reel and 25 foot lengths coiled in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133) Also GLP, Megacrimp, or Powercrimp couplings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		25' (7.62M) Length	Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	Item Number	meters	feet	Bulk Length
4.8 ± 0.40	3/16 ± 0.016	10.52 ± 0.6	0.41 ± 0.03	1.72	250	6.89	1000	95	28	76	3	0.10	0.07	3284-5312	168	550	3284-5306
6.35	1/4	12.1	0.48	1.72	250	6.89	1000	95	28	76	3	0.15	0.1	3284-5313	168	550	3284-5307
7.9	5/16	13.7	0.54	1.72	250	6.89	1000	95	28	102	4	0.16	0.11	3284-5314	168	550	3284-5282
9.5	3/8	15.3	0.60	1.72	250	6.89	1000	95	28	102	4	0.22	0.15	3284-5315	168	550	3284-5304
12.7 ± 0.58	1/2 ± 0.023	19.0 ± 0.79	0.75 ± 0.03	1.38	200	5.52	800	68	20	127	5	0.34	0.23	3284-5316	168	550	3284-5308
15.9	5/8	22.2	0.88	1.38	200	5.52	800	51	15	152	6	0.39	0.26	3284-5317	168	550	3284-5309
19.1	3/4	27.8	1.09	1.38	200	5.52	800	34	10	152	6	0.48	0.32	3284-4088	198	650	3284-0170
25.4 ± 0.79	1 ± 0.03	33.7 ± 1.20	1.33 ± 0.05	1.10	160	4.41	640	34	10	203	8	0.61	0.41	3284-4181	122	400	3284-0180

4219BG (BARRICADE™)

LOW PERMEATION FUEL HOSE



- Relative Cost** ●●○○○
- Applications** Low-permeation fuel line including gasoline, ethanol blends, 100% methanol (no blends), diesel, biodiesel (including all blends of SME, RME or PME). Not for in-tank or gaseous fuels.
- Temperature** -40°C to +125°C (-40°F to +257°F) and -40°C to +100°C (-40°F to +212°F) for biodiesel up to B100.
- Standards** SAE 30R14 T1, EPA Non-Road Fuel Lines (<15g/m²/day) for spark ignition engines. Also JDS G-253 (non-conductive).
- Construction** Nitrile tube with thermoplastic barrier, synthetic fiber reinforcement, nitrile/PVC cover.
- Packaging** Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133) Also can use GC stems with crimp rings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
4.8 ± 0.40	3/16 ± 0.016	10.40 ± 0.58	0.410 ± 0.023	0.34	50	1.72	250	81	24	55	2.17	0.07	0.05	4219-5520
6.4	1/4	12.69	0.500	0.34	50	1.72	250	81	24	65	2.56	0.13	0.09	4219-5521
7.9	5/16	14.28	0.562	0.34	50	1.72	250	81	24	75	2.95	0.15	0.1	4219-5522
9.5	3/8	15.87	0.625	0.34	50	1.72	250	81	24	85	3.35	0.18	0.12	4219-5523
12.7 ± 0.58	1/2 ± 0.023	19.84 ± 0.79	0.780 ± 0.031	0.24	35	1.21	175	34	10	120	4.72	0.24	0.16	4219-5524

Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts

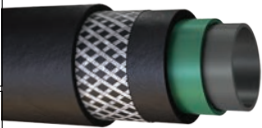


BARRICADE[®]

FUEL INJECTION AND CARBURETION HOSE

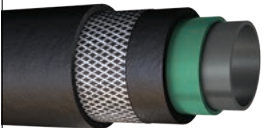
with GreenShield[®] Technology

Gates Barricade™ 4219BG Fuel Line (page 61)



- > Multiple fuel compatibility: Gasoline, E10, E15, E85, Diesel, biodiesel (B0 to B100: SME, PME, RME).
- > Low permeation <15g/m²/day: Meets EPA requirements.
- > Working pressure: 50 psi max.
- > Working temperature: -40 to +125 °C, or +100 °C for biodiesel B-10 to B-100.
- > Marine version available with USCG fire rating: 4219BM [page 67].

Gates Barricade™ 4219BF Fuel Injection Hose (page 63)



- > Multiple fuel compatibility: Gasoline, E10, E15, E85, Diesel, biodiesel (B0 to B100: SME, PME, RME).
- > Low permeation <15g/m²/day: Meets EPA requirements.
- > Working pressure: 225 psi max.
- > Working temperature: -40 to +135 °C continuous, or +150 °C intermittent for gasoline and all diesel fuels including B-100.

MODERN FUELS REQUIRE MODERN FUEL HOSE.

Installing Barricade™ protects the system against the aggressive fuel mixtures of today's modern fuels, which can degrade basic rubber hose and result in customer comebacks.

- > **BEST-IN-CLASS** working psi of 225 (for fuel injection).
- > Exceeds EPA requirement.
- > Multi-fuel compatible: Approved for use with leaded and unleaded Gasoline, Diesel, Biodiesel†, E-85, 100% Methanol, **ETHANOL** and gasohol fuels.








Don't make a mistake: in CARB-regulated states, it is **ILLEGAL** to "alter the original design of the system." Replacement of OEM hose with general-purpose carburetion hose is considered an alteration.

† Biodiesel fuel must meet the ASTM D6751 specification for biodiesel fuel and be produced, marketed and distributed by BQ9000 accredited facilities.

4219BF BARRICADE™ FUEL INJECTION

**LOW PERMEATION,
HIGHER PRESSURE FUEL HOSE**



-  **Relative Cost** ●●●○○
-  **Applications** Low-permeation fuel injection line including gasoline, ethanol blends, 100% methanol (no blends), diesel, biodiesel (including all blends of SME, RME or PME). Not for in-tank or gaseous fuels.
-  **Temperature** -40°C to +135°C (-40°F to +275°F) with peaks up to 150°C (302°F). Biodiesel B100 up to 135°C (275°F).
-  **Standards** SAE 30R13 T2 except no kink test and higher burst, EPA Non-Road Fuel Lines (<15g/m²/day) for spark ignition engines, CAT 1E4340B.
-  **Construction** HNBR tube with thermoplastic barrier, aramid fiber reinforcement, CPE cover.
-  **Packaging** Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133) Also can use GC stems with crimp rings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
4.8 ±0.40	3/16 ±.016	10.4 ±0.58	0.406 ±0.023	1.55	225	8.0	1160	81	24	55	2.17	0.07	0.05	4219-6705
6.4	1/4	12.69	0.500	1.55	225	8.0	1160	81	24	65	2.56	0.13	0.09	4219-5651
7.9	5/16	14.28	0.562	1.55	225	8.0	1160	81	24	75	2.95	0.15	0.1	4219-5652
9.5	3/8	15.87	0.625	1.55	225	8.0	1160	81	24	85	3.35	0.18	0.12	4219-5653
12.7 ±0.58	1/2 ±0.023	19.84 ±0.79	0.780 ±0.031	1.55	225	8.0	1160	34	10	140	5.5	0.24	0.16	4219-5654

*** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4219BD DIESEL FUEL INJECTION

HIGHER PRESSURE DIESEL AND BIO-DIESEL FUEL HOSE



- Relative Cost** ●●●○○○
- Applications** Fuel injection hose for diesel and biodiesel (including all blends of SME, RME or PME). Also for gasoline, ethanol blends, 100% methanol (no blends), or engine oil. Not for in-tank or gaseous fuels.
- Temperature** -40 °C to +150 °C (-40 °F to +302 °F) and -40 °C to +135 °C (-40 °F to +275 °F) for biodiesel up to B100.
- Standards** CAT 1E4340B.
- Construction** HNBR tube, aramid fiber reinforcement, CPE cover.
- Packaging** Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133) Also can use GC stems with crimp rings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
4.8±0.40	3/16±0.016	10.4 ±0.6	0.410±0.024	1.21	175	7.24	1050	81	24	57	2.25	0.09	0.06	*
6.35±0.61	1/4±0.024	12.9 ±1.0	0.508±0.039	1.21	175	7.24	1050	81	24	65	2.56	0.13	0.09	*
7.94± 0.40	5/16±.016	13.5± 0.60	0.531±0.024	1.21	175	7.24	1050	81	24	75	2.95	0.15	0.10	*
9.52±0.61	3/8±0.024	16.1± 1.0	0.634±0.039	1.21	175	7.24	1050	81	24	85	3.35	0.16	0.11	*
12.7± 0.61	1/2±0.024	19.7± 1.0	0.776±0.039	1.21	175	7.24	1050	34	10	120	4.72	0.24	0.16	*
15.9 ±0.79	5/8±0.031	23.4 ±1.2	0.922±0.047	1.21	175	7.24	1050	34	10	140	5.5	0.33	0.22	4219-6772
19.05±0.79	3/4±0.031	27.4±2.0	1.078±0.078	1.21	175	7.24	1050	34	10	160	6.3	0.48	0.32	*








* Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4327DT

NYLON TUBING FOR DIESEL FUEL










-  **Relative Cost** ○○○○○
-  **Applications** Non-conductive fuel line from tank to engine. Also suitable for DEF vent line. Not for in-tank or gaseous fuels.
-  **Temperature** -40°C to +93°C (-40°F to +200°F).
-  **Standards** SAE J844
-  **Construction** Heat and light stabilized seamless extruded nylon 12 tube and cover. The 1/4" size is Type A, which is non-reinforced and not recognized by DOT. Other sizes are Type B, reinforced with one open ply of fibrous nylon.
-  **Packaging** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
-  **Couplings** Gates DOT SureLok™ or Gates Compression Couplings (see Gates Automotive Hydraulic and Fleet Hose catalog under "Air Brake"). Biodiesel applications should not use brass or zinc plated couplings.

OD		Wall Nominal		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.35	1/4	1.01	0.040	0.07	10	0.34	50	81	24	32	1.25	0.02	0.01	30	100	4327-3901
9.53	3/8	1.58	0.062	1.03	150	3.45	500	81	24	38	1.5	0.04	0.03	30	100	4327-3902
12.70	1/2	1.58	0.062	1.03	150	3.45	500	81	24	64	2.5	0.06	0.04	30	100	4327-3903
15.90	5/8	2.35	0.092	1.03	150	3.45	500	81	24	76	3	0.12	0.08	15	50	4327-3904
19.05	3/4	2.35	0.092	1.03	150	4.14	600	81	24	127	5	0.13	0.09	15	50	4327-3905

4219

SUBMERSIBLE FUEL HOSE



-  **Relative Cost** ●●●●●
-  **Applications** Fuel line or vent inside the fuel tank. Not recommended for other applications due to cost.
-  **Temperature** -40°C to +150°C (-40°F to +302°F).
-  **Standards** SAE 30R10.
-  **Construction** FKM tube, synthetic fiber braid reinforcement, FKM cover.
-  **Packaging** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft Length	250 ft Length	10 m Length
6.4 ±0.4	1/4 ±.016	12.7 ±0.58	0.50 ±0.02	0.69	100	3.4	500	*	*	*	*	0.15	0.10	4219-0010		4219-0008
7.9	5/16	14.3	0.56	0.69	100	3.4	500	*	*	*	*	0.22	0.15	4219-0012	4219-0024	4219-0005
9.5	3/8	15.9	0.62	0.69	100	2.8	400	*	*	*	*	0.27	0.18	4219-0013	4219-0030	4219-0006

* No specification requirement.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4219M MARINE MASTER™ FUEL LINE 40

STANDARD MARINE FUEL AND OIL HOSE



Relative Cost ●●●○○

Applications Fuel line with marine fire rating suitable for diesel and gasohol blends of ethanol, methanol, and ethers up to 10%. Also suitable for, tank vent, crank case vent, or coolant bottle. Not for in-tank, gaseous fuels, or biodiesel applications.

Temperature -40°C to +100°C (-40°F to +212°F).

Standards SAE J1527, USCG Type A Class 1 Style R1. Tube: ARPM (Class A high oil resistance). Hose is NMMA type accepted.

Construction Nitrile tube, synthetic fiber reinforcement, nitrile cover.

Packaging The 25 and 50 foot lengths are boxed, and 250 foot lengths shipped on a reel with maximum of 3 pieces. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number	Gates Item Number
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	25 ft. Length	50 ft. Length	250 ft. Length
6.4 ±0.4	1/4 ±0.016	16.3 ±0.79	0.64 ±0.03	0.28	40	2.76	400	95	28	64	2.5	0.25	0.17	4219-4145	4219-4146	4219-4140
7.9	5/16	17.8	0.70	0.28	40	2.76	400	95	28	76	3	0.28	0.19	4219-4565	4219-4566	4219-4560
9.5	3/8	19.6	0.77	0.28	40	2.76	400	95	28	76	3	0.33	0.22	4219-4385	4219-4567	4219-4380
12.7 ±0.58	1/2 ±0.023	22.6	0.89	0.28	40	2.76	400	95	28	127	5	0.39	0.26	4219-4125	***	4219-4120
15.9 ±0.79	5/8 ±0.031	25.7 ±1.59	1.01 ±0.06	0.28	40	276	400	95	28	152	6	0.48	0.32	4219-4585	***	4219-4580

*** Not stocked. Minimum order quantity applies.

4219N

STANDARD MARINE, OPEN ENVIRONMENT FUEL AND OIL HOSE



Relative Cost ●●○○○

Applications Fuel line for use when hose is in an open environment. Hose has marine fire rating and is suitable for diesel and gasohol blends of ethanol, methanol and ethers up to 10%. Also suitable for tank vent, crank case vent or coolant bottle. Not for in-tank, gaseous fuels or biodiesel applications. Not approved for use on commercial or for-hire craft.

Temperature -40°C to +121°C (-40°F to +250°F)

Standards SAE J1527, USCG Type B Class 1 Style R1. Tube: ARPM (Class A high oil resistance). Hose is NMMA type accepted.

Construction Nitrile tube, synthetic fiber reinforcement, nitrile cover.

Packaging The 50 foot lengths are boxed and 250 foot lengths shipped on a reel with maximum of 2 pieces. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	50 ft. Length	250 ft. Length
6.4 ±0.40	1/4 ±0.016	12.7 ±0.5	0.50 ±0.02	0.28	40	1.38	200	95	28	64	2.5	0.13	0.09	4219-4046	4219-4040
7.9	5/16	14.7	0.58	0.28	40	1.38	200	95	28	76	3	0.16	0.11	4219-4066	4219-4060

*** Not stocked. Minimum order quantity applies.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake








Accessories

Belts

4219BM (BARRICADE™ MARINE)

LOW PERMEATION FUEL HOSE WITH MARINE FIRE RATING



-  **Relative Cost** ●●●○○○
-  **Applications** USCG fire rated low permeation fuel line that is compatible with virtually all fuels in use today for marine applications with working pressures up to 35 PSI.
-  **Temperature** -20°C to +100°C (-4°F to 212°F).
-  **Standards** SAE J1527, USCG Type A1-15 Style R1, EPA Non-Road Fuel Lines (<15g/m²/day).
-  **Construction** NBR tube with thermoplastic barrier, fiber reinforcement, NBR+PVC cover.
-  **Packaging** Bulk lengths 7.6 meters (25 feet) shipped on a reel. Custom lengths available with minimum order quantity.
-  **Couplings** Hose bead fitting fastened with hose clamps. (page 127 - 133) Also can use GC stems with crimp rings.








ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	25 feet
6.4 ±0.4	1/4 ±0.016	16.6	0.65	0.24	35	1.2	175	81	24	133	5.25	0.13	0.09	4219-6340
7.9	5/16	18.1	0.71	0.24	35	1.2	175	81	24	146	5.75	0.15	0.10	4219-6341
9.5	3/8	18.9	0.74	0.24	35	1.2	175	81	24	152	6	0.18	0.12	4219-6342
12.7 ±0.58	1/2 ±0.023	22.6	0.89	0.24	35	1.2	175	34	10	184	7.25	0.24	0.16	***

*** Not stocked. Minimum order quantity applies.

3658F (C5M)

HIGH PRESSURE MARINE FUEL AND OIL HOSE



-  **Relative Cost** ●●●●○○
-  **Applications** High-pressure fuel or oil hose with marine fire rating suitable for diesel, gasoline, and oil.
-  **Temperature** -20°C to +100°C (-4°F to +212°F), biodiesel B100 to +52°C (125°F)
-  **Standards** SAE J1527, USCG Type A Class 1 Style R3, SAE J1942, exceeds SAE 30R2 except dimensions.
-  **Construction** Nitrile tube, wire braid reinforcement, CSM cover except sizes -10 through -16 is nitrile/PVC cover.
-  **Packaging** Bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.
-  **Couplings** C5 field-attachable coupling (see Gates Hydraulic Catalog). Biodiesel applications should not use brass or zinc plated couplings.

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-5	14.7	0.58	3.45	500	13.79	2000	81	24	33	1.3	0.31	0.21	117	385	3658-1965
7.9	5/16	-6	17.0	0.67	3.45	500	13.79	2000	81	24	33	1.3	0.40	0.27	117	385	3658-1969
10.3	13/32	-8	19.6	0.77	3.45	500	13.79	2000	81	24	46	1.8	0.43	0.29	101	330	3658-1973
12.7	1/2	-10	23.4	0.92	3.45	500	13.79	2000	68	20	58	2.3	0.60	0.4	84	275	3658-1977
15.9	5/8	-12	27.4	1.08	3.45	500	13.79	2000	68	20	71	2.8	0.76	0.51	67	220	3658-1981
22.2	7/8	-16	31.2	1.23	3.45	500	13.79	2000	68	20	89	3.5	0.92	0.62	50	165	3658-1985

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



4663K

WIRE REINFORCED FUEL AND OIL HOSE



Relative Cost ●●●○○

Applications Fuel or oil fill or cross-over hose where tight bends or vacuum resistance is required. Also suitable with biodiesel to B20 for intermittent contact.

Temperature -40°C to +100°C (-40°F to +212°F).

Standards SAE 30R5. Wall thickness is 4.47±1.42mm (0.176±0.056 inch) excluding embedded wire area.

Construction Nitrile tube, synthetic fabric reinforcement plies with two embedded helical wires, neoprene coated fabric cover.

Packaging Bulk lengths are 3 foot sticks in a box. Custom lengths or ends with no wire are available with minimum order quantity.

Couplings Hose bead fitting fastened with super-hex hose clamps. (page 127 - 133)








ID		OD Reference		Work. Press.* Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	10 ft. Length
34.9 +0.76 / -2.88"	3/8 +0.03 / -0.09	41.7	1.64	0.14	20	0.62	90	101	30	127	5	0.62	0.42	***	4663-2828
38.1	1 1/2	45.0	1.77	0.14	20	0.62	90	101	30	127	5	0.65	0.44	4663-3601	4663-2830
41.3	1 5/8	48.3	1.90	0.14	20	0.62	90	101	30	140	5.5	0.71	0.48	***	4663-3624 ***
44.5	1 3/4	51.3	2.02	0.14	20	0.62	90	101	30	152	6	0.76	0.51	***	4663-3976
47.6	1 7/8	56.1	2.21	0.14	20	0.62	90	101	30	152	6	0.79	0.53	4663-3603	4663-2933 ***
50.8	2	59.4	2.34	0.14	20	0.62	90	101	30	178	7	0.85	0.57	4663-3604	4663-2930
57.2	2 1/4	65.8	2.59	0.14	20	0.62	90	101	30	203	8	0.95	0.64	4663-3605	4663-2932
63.5	2 1/2	72.1	2.84	0.14	20	0.62	90	101	30	305	12	1.03	0.69	4663-3606	4663-2929 ***
76.2	3	83.1	3.27	0.14	20	0.62	90	101	30	**	**	1.34	0.90	***	4663-3625 ***

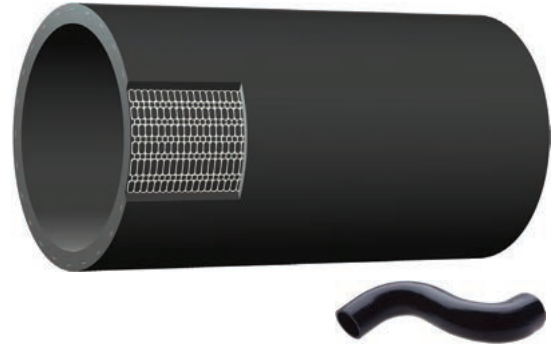
* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4278BD

BIODIESEL FORMED FUEL HOSE

-  **Relative Cost** ●●●●○
-  **Applications** Fuel filler, crossover, supply, or vent. Also suitable for cold side CAC. Compatible with biodiesel SME, RME, and PME to B100. Not for gasoline or fuel injection.
-  **Temperature** -40 °C to +100 °C (-40 °F to +212 °F) continuous, and 125 °C (257 °F) intermittent.
-  **Standards** SAE 30R6 except oxygenated fuel and extractables tests.
-  **Construction** ECO tube, synthetic knit reinforcement, ECO cover.
-  **Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)










ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
25.4 ±0.79	1 ±0.03	4.77	0.195	1.20	174	**	**	38.1	1.50	0.70	0.47
38.1 ±0.99	1 1/2 ±0.04	4.95 ±0.65	0.195 ±0.025	0.55	80	**	**	50.0	1.97	0.76	0.67
50.8	2	4.95	0.195	0.55	80	**	**	67.1	2.64	0.93	0.96
63.5	2 1/2	5.35 ±1.05	0.21 ±0.04	0.55	80	**	**	79.0	3.11	1.16	1.10
76.2	3	6.35	0.25	0.55	80	**	**	92.2	3.63	1.42	1.31

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

4278

FORMED FUEL AND OIL HOSE STANDARD SHAPES

-  **Relative Cost** ●●●●○
-  **Applications** Engine oil, fuel filler, and hydraulic return. Also suitable for tank vent and crank case vent. Not for fuel injection or air intake.
-  **Temperature** -40 °C to +125 °C (-40 °F to +257 °F).
-  **Standards** SAE 30R7 except the oxidized gasoline test, or SAE 30R6.
-  **Construction** Nitrile tube, synthetic knit reinforcement, nitrile/PVC cover.
-  **Packaging** Boxed.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)



ID		Wall Nominal		Burst Minimum		90° Bend*		45° Bend*		Straight Length**		Weight Nominal	
mm	inch	mm	inch	MPa	psi	Gates Item No.	Inter-change No.	Gates Item No.	Inter-change No.	Gates Item No.	Inter-change No.	kg/m	lbs/ft
34.9 ±0.99	1 3/8 ±0.039	4.95 ±0.65	0.195 ±0.025	0.55	80					4271-0025	24702	0.74	0.50
38.1	1 1/2	4.95	0.195	0.55	80	4278-6998	24715	4278-6988	24710	4271-0030	23964	0.80	0.54
44.5	1 3/4	4.95	0.195	0.55	80	4278-6999	24716	4278-6989	24711	4271-0035	23968	0.94	0.63
50.8	2	4.95	0.195	0.55	80	4278-7000	24717	4278-6990	24712	4271-0045	23972	1.04	0.70
63.5	2 1/2	5.35	0.21	0.55	80	4278-7002	24719	4278-6992	24714	4271-0065	23980	1.22	0.82

* Both leg lengths 203±6.4mm (8.00±0.25 inch).
 ** Length 914±11.2mm (36.00±0.44 inch).

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

Hose lines can be designed using a combination of flexible hose and metal tubing.

The advantages of this type of assembly are:

- > Utilize standard threaded port connections/adapters instead of hose barb connections with clamps.
- > Rigid metal line prevents sagging between support points for long lengths.
- > Metal line can save cost over hose for long lengths.
- > Crimp hose connections instead of clamp for greater sealing force.

Hose/Tube Combo can be used for:

- > Oil cooler lines for engine, transmission, or other coolers.
- > Power steering lines
- > Fuel lines
- > Air conditioning refrigerant lines
- > Hydraulic supply and return
- > Turbo oil drain (for large diameter charge air tube/boot combinations, please see page 95).
- > Air, coolant, and more.

Steel lines per SAE J525 are available in standard sizes from 4.8 to 32mm OD or more (3/16" to 1-1/4" OD), and in standard wall thicknesses from 0.89 to 3.05mm. Also available are SAE J356, J524, J2467, and similar to SAE J2614, among others. Aluminum lines for refrigerant and coolant are also available.



Tube Plating

Gates has a long history of providing best-in-class corrosion protection for hose couplings, adapters, and tubing.



Gates Tuffcoat® enhanced trivalent chrome plating has been a leader in the industry by providing red rust protection to 500 hours of salt spray as tested per ASTM B117. That's well beyond the required 72 hour test specified by SAE for non-deformed surfaces.



Gates Tuffcoat Extreme® zinc-nickel plating uses proprietary plating technology to provide red rust protection to 500 hours of salt spray on deformed surfaces, and 840 hours on non-deformed surfaces. Tuffcoat Extreme® also meets multiple OE specifications for resistance to agricultural chemicals.

Nickel plating, typically used for couplings in contact with biodiesel, avoids the use of zinc which can adhere to the inside passage of the coupling and cause precipitates to form, which can clog injectors, filters, or entire lines.

Powder coating, plastic coating, and painting are also available, depending on the type of tubing and desired corrosion resistance.

Tube End Terminations

Terminations	-4	-6	-8	-10	-12	-16	Nut Size	-4	-6	-8	-10	-12	-16
JIC, 37°	Yes	Yes	Yes	Yes	Yes	Yes	JIC, 37°	14mm	19mm	24mm	27mm	32mm	41mm
ORS	Yes	Yes	Yes	Yes	Yes	Yes	ORS	17mm	22mm	24mm	30mm	36mm	41mm
Quick Lok™ H	Yes	Yes	Yes	Yes	Yes	Yes	Quick-Lok H	19mm	22mm	24mm	30mm	36mm	41mm
Flange	NA	NA	Yes	Yes	Yes	Yes							

NOTE: Jumps should be made in the adapter or in the hose assembly.

NOTE: Flange Terminations include Code 61, Code 62. Please check with Product Application for additional flange termination types.

NOTE: For other terminations, please check with Product Application.

Clamping and Brackets

Various clamp types are available to hold a tube line in place. Two of the most common are the P-Clamp and the Shell Clamp. The P-Clamp is typically low-cost, whereas the Shell Clamp provides better holding ability, particularly for dual lines. (insert pictures of p-clamp and shell-clamp).



P-Clamp



Shell Clamp

Safety First!

Care must be taken to avoid potential injuries resulting from poor designs. For more information, refer to SAE J1273 and to the Gates manual Safe Hydraulics – A Guide to Preventative Maintenance & Safety for Hydraulic Hoses & Couplings.



DRIVEN BY POSSIBILITY™

PERFORMANCE WITHOUT COMPROMISE

TRANSMISSION OIL COOLER HOSE + POWER STEERING

WHETHER YOUR VEHICLE IS INDUSTRIAL OR RECREATIONAL, YOU RELY ON IT TO OPERATE CONSISTENTLY AND EFFICIENTLY. DON'T TAKE CHANCES WHEN IT COMES TO YOUR OIL SYSTEMS. TRUST GATES TO DELIVER SAFE, RELIABLE ENGINE

HOSES AND COMPONENTS, GUARANTEED TO HELP YOUR TRUCKS, RECREATIONAL EQUIPMENT, AND HEAVY-DUTY VEHICLES MEET SAE REQUIREMENTS, AND KEEP THEM RUNNING LONGER.





OIL (Engine lube, hydraulic, transmission, power steering)

Lower Pressure, Textile Reinforcement

3319HT (GTH)..... Per SAE 100R6	74	
3319CA (G3H)..... Per SAE 100R3	74	
4219HT	Higher temperature nitrile rubber	75
4319 (MegaTech™ LOC).....	Higher temperature CPE rubber, clamps not needed (tightens with pressure)	77

Also see

3284AC (RLA 30R2)..... Oil hose per SAE 30R2 performance	61
3319CT (RLC)..... Larger diameters than RLA 30R2. See Gates Hydraulic Catalog	
Steel or aluminum tube assemblies in the AIR Section.....	110

Higher Pressure And Temperature, Steel Wire Reinforcement, Hard Wall, Used With Hydraulic Couplings

3658D (C5D)	Use field-attachable couplings.....	75
3658BC (C5C XH)	Higher pressure per SAE 100R5	76
4657AM (MegaTech™ 250).....	Standard.....	77
4657DT (MegaTech™ 500).....	Larger sizes.....	78
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Coolant
Fuel
OIL
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts



3319HT (GTH)

HIGHER PRESSURE TRANSMISSION OIL COOLER HOSE



- Relative Cost** ●●○○○
- Applications** Lube oil, hydraulic oil, and transmission oil cooler. Also suitable for coolant, or water.
- Temperature** -40 °C to +135 °C (-40 °F to +275 °F). Do not let coolant or water boil.
- Standards** SAE 100R6.
- Construction** Nitrile tube, fiber braid reinforcement, neoprene cover.
- Packaging** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.
- Couplings** MegaCrimp® Couplings except -3 size uses PowerCrimp. Also can use hose clamp over a hose bead fitting (pages 127 - 133).

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	3/16	-3	11.2	0.44	3.45	500	13.79	2000	95	28	51	2	0.12	0.08	218	715	3319-3301
6.4	1/4	-4	12.7	0.50	2.76	400	11.03	1600	95	28	75	2.5	0.13	0.09	236	775	3319-3305
7.9	5/16	-5	14.2	0.56	2.76	400	11.03	1600	95	28	76	3	0.16	0.11	198	650	3319-3310
12.7	1/2	-8	19.8	0.78	2.76	400	11.03	1600	61	18	125	4	0.27	0.18	122	400	3319-3320
15.9	5/8	-10	23.1	0.91	2.41	350	9.65	1400	51	15	140	5	0.31	0.21	76	250	3319-3325
19.1	3/4	-12	26.9	1.06	2.07	300	8.27	1200	51	15	150	5.5	0.43	0.29	69	225	3319-3335
25.4	1	-16	33.5	1.32	1.72	250	6.89	1000	34	10	205	8	0.60	0.40	50	165	3319-3345

3319CA (G3H)

HIGH PRESSURE TRANSMISSION OIL COOLER HOSE



- Relative Cost** ●●○○○
- Applications** Lube oil, hydraulic oil, and transmission oil cooler. Also suitable for coolant, or water.
- Temperature** -40 °C to +135 °C (-40 °F to +275 °F) Do not let coolant or water boil.
- Standards** SAE 100R3.
- Construction** Nitrile tube, two fiber braid reinforcement, neoprene cover.
- Packaging** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.
- Couplings** MegaCrimp® Couplings to -10 and GLX -8 and above. Also can use hose clamp over a hose bead fitting (pages 127 - 133).

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	14.2	0.56	8.62	1250	34.47	5000	95	28	75	3	0.19	0.13	139	455	3319-0088
7.9	5/16	-5	16.8	0.66	8.27	1200	33.10	4800	95	28	89	3.5	0.27	0.18	101	330	3319-4287
9.5	3/8	-6	19.1	0.75	7.76	1125	31.03	4500	95	28	100	4	0.33	0.22	107	350	3319-0087
12.7	1/2	-8	23.9	0.94	6.89	1000	27.58	4000	95	28	125	5	0.48	0.32	69	225	3319-0090
15.9	5/8	-10	27.9	1.10	6.21	900	24.82	3600	95	28	140	5.5	0.57	0.38	61	200	3319-4288
22.2	3/4	-12	31.8	1.25	5.17	750	20.68	3000	95	28	150	6	0.71	0.48	49	160	3319-0091
25.4	1	-16	38.1	1.50	3.90	565	15.58	2260	68	20	205	8	0.92	0.62	37	120	3319-0092
31.8	1 1/4	-20	44.5	1.75	2.59	375	10.34	1500	51	15	250	10	1.10	0.74	37	120	3319-0071
38.1	1 1/2	-24	49.3	1.94	2.07	300	8.27	1200	34	10	300	12	1.31	0.88	37	120	3319-4289

4219HT

STANDARD TRANSMISSION OIL COOLER HOSE



- Relative Cost** ●●○○○
- Applications** Low pressure transmission oil cooler.
- Temperature** -40°C to +135°C (-40°F to +275°F).
- Standards** SAE 1532 Type B.
- Construction** Nitrile tube, synthetic fiber reinforcement, neoprene cover.
- Packaging** Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
7.9 ±0.50	5/16 ±0.02	14.2 ±0.80	0.56 ±0.03	1.0	145	4.14	600	68	20	76	3	0.13	0.09	4219-3087***
8.7	11/32	17.0	0.67	1.0	145	4.14	600	68	20	76	3	0.19	0.13	4219-5300
9.5	3/8	17.5	0.69	1.0	145	4.14	600	68	20	76	3	0.21	0.14	4219-3088
12.7 ±0.59	1/2 ±0.23	20.6	0.81	1.0	145	4.14	600	68	20	127	5	0.27	0.18	4219-3058
15.9	5/8	24.6	0.97	1.0	145	4.14	600	68	20	152	6	0.36	0.24	4219-3824***

*** Not stocked. Minimum order quantity applies.

3658D (C5D)

HIGH TEMPERATURE OIL HOSE



- Relative Cost** ●●●○○
- Applications** Multi-fluid hose for turbo charger oil, hot lube lines, power steering (heavy duty vehicles only), diesel fuel lines, and hydraulic fluids except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline.
- Temperature** -40°C to +150°C (-40°F to +302°F).
- Standards** DOT FMVSS-106-74 type All and SAE J1402 type All for air brake (-4 to -12 sizes).
- Construction** CPE tube, textile and wire braid reinforcement, CPE with green braided textile cover.
- Packaging** Bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.
- Couplings** C5 field-attachable couplings. (See Gates Hydraulic Catalog)

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	0.19	-4	13.1	0.52	10.34	1500	41.37	6000	85	25	25	1	0.21	0.14	134	440	3658-0020
6.8	0.27	-5	14.8	0.58	10.34	1500	41.37	6000	85	25	38	1.5	0.22	0.15	117	385	3658-0027
8.2	0.32	-6	17.2	0.68	10.34	1500	41.37	6000	85	25	46	1.8	0.27	0.18	117	385	3658-0021
10.7	0.42	-8	19.5	0.77	8.62	1250	34.47	5000	85	25	51	2	0.34	0.23	101	330	3658-0022
13.2	0.52	-10	23.4	0.92	8.62	1250	34.47	5000	85	25	51	2	0.40	0.27	84	275	3658-0028
16.4	0.65	-12	27.4	1.08	5.17	750	20.68	3000	85	25	58	2.3	0.60	0.40	67	220	3658-0029
22.8	0.90	-16	31.3	1.23	2.76	400	11.03	1600	85	25	89	3.5	0.68	0.46	50	165	3658-0030

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

3658BC (C5C XH)**HIGH PRESSURE,
HIGH TEMPERATURE OIL HOSE**

- Relative Cost** ●●●●○
- Applications** Multi-fluid hose for turbo charger oil, hot lube lines, rotary air compressor, diesel fuel and filtration lines, and hydraulic fluids except concentrated phosphate ester. Not for bio-diesel blends greater than 5% (above B5) or gasoline.
- Temperature** -40 °C to +150 °C (-40 °F to +302 °F).
- Standards** SAE 100R5, SAE 1405 for hot oil circulation, DOT FMVSS-106-74 type All and SAE J1402 type All for air brake (-4 to -12 sizes).
- Construction** CPE tube, wire braid reinforcement, CPE with blue braided textile cover.
- Packaging** Bulk lengths are shipped on a reel except 3658-0157 is in a box. Custom lengths available with minimum order quantity.
- Couplings** C5 field-attachable coupling on all sizes, or MegaCrimp® on all sizes except -10 and -12 should use GS couplings.

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.8	0.27	-5	14.8	0.58	20.68	3000	82.74	12000	85	25	86	3.4	0.28	0.19	117	385	3658-0151
8.2	0.32	-6	17.2	0.68	15.51	2250	62.05	9000	85	25	102	4	0.33	0.22	117	385	3658-0152
10.7	0.42	-8	19.5	0.77	13.79	2000	55.16	8000	85	25	117	4.6	0.37	0.25	101	330	3658-0153
13.2	0.52	-10	23.4	0.92	12.07	1750	48.26	7000	85	25	140	5.5	0.51	0.34	84	275	3658-0154
16.4	0.65	-12	27.4	1.08	10.34	1500	41.37	6000	85	25	165	6.5	0.67	0.45	67	220	3658-0155
22.8	0.90	-16	31.3	1.23	5.52	800	22.06	3200	85	25	188	7.4	0.70	0.47	50	165	3658-0156
29.2	1.15	-20	38.0	1.49	4.31	625	17.24	2500	85	25	229	9	0.77	0.52	37	120	3658-0157

4319 (MEGATECH™ LOC)

HIGH TEMPERATURE LOCK-ON TRANSMISSION OIL COOLER HOSE



- Relative Cost** ●●○○○
- Applications** Transmission oil cooler, turbo charger and lube oil, and diesel fuel. Not for biodiesel blends greater than 5% (above B5) or gasoline.
- Temperature** -40°C to +150°C (-40°F to +302°F).
- Standards** None
- Construction** CPE tube, textile braid reinforcement, CPE with black braided textile cover.
- Packaging** Bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.
- Couplings** Field-attachable LOC couplings, GLP couplings (-4 to -12) or MegaCrimp® couplings (-16). Also can use hose clamps over a beaded hose fitting (pages 127 - 133).

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	0.25	-4	13.1	0.50	2.07	300	8.27	1200	76	3	0.15	0.1	175	575	4319-0106
9.5	0.38	-6	17.2	0.64	2.07	300	8.27	1200	76	3	0.18	0.12	183	600	4319-0107
12.7	0.50	-8	19.5	0.78	2.07	300	8.27	1200	127	5	0.24	0.16	102	335	4319-0108
15.9	0.63	-10	23.4	0.91	2.07	300	8.27	1200	152	6	0.31	0.21	79	260	4319-0109
19.1	0.75	-12	27.4	1.08	2.07	300	8.27	1200	178	7	0.37	0.25	67	220	4319-0110
25.4	1.00	-16	31.3	1.33	2.07	300	8.27	1200	178	7	0.51	0.34	61	200	4319-0111

4657AM (MEGATECH™ 250)

HIGH TEMPERATURE TRANSMISSION OIL COOLER HOSE



- Relative Cost** ●●●○○
- Applications** Transmission oil, turbo oil, power steering suction and return, and lubricating oil lines. Also suitable for hydraulic oil, coolant, or water. Not for biodiesel blends greater than 5% (above B5) or gasoline.
- Temperature** -40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.
- Standards** None
- Construction** CPE tube, steel wire reinforcement, CPE with black braided textile cover.
- Packaging** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.
- Couplings** MegaCrimp® Couplings -4 to -12.

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	13.2	0.52	1.72	250	6.89	1000	85	25	25	1	0.13	0.09	76	250	4657-2339
9.5	3/8	-6	16.3	0.64	1.72	250	6.89	1000	85	25	46	1.8	0.19	0.13	107	350	4657-2340
12.7	1/2	-8	19.8	0.78	1.72	250	6.89	1000	85	25	64	2.5	0.25	0.17	107	350	4657-2341
15.9	5/8	-10	23.6	0.93	1.72	250	6.89	1000	85	25	76	3	0.36	0.24	91	300	4657-2342
19.1	3/4	-12	26.9	1.06	1.72	250	6.89	1000	85	25	89	3.5	0.42	0.28	61	200	4657-2343
25.4	1	-16	34.5	1.36	1.72	250	6.89	1000	85	25	102	4	0.65	0.44	46	150	4657-2344
31.8	1 1/4	-20	41.9	1.65	1.72	250	6.89	1000	85	25	114	4.5	0.83	0.56	37	120	4657-2345

- Coolant
- Fuel
- OIL
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4657DT (MegaTech™ 500)**HIGH TEMPERATURE LARGE DIAMETER OIL/AIR HOSE**

Relative Cost ●●●○○○

Applications Air brake, pressurized hot oil return lines and rotary oil/air compressor lines. Not for diesel fuel or gasoline.

Temperature -40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.

Standards None

Construction CPE tube, steel wire reinforcement, CPE with black braided textile cover.

Packaging Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.

Couplings GL Couplings, GSP Couplings for -24 and -32.

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
38.1	1 1/2	-24	49.5	1.95	3.45	500	13.79	2000	381	15	1.49	1.00	30	100	4657-0204
50.8	2	-32	63.0	2.48	3.45	500	13.79	2000	457	18	2.05	1.38	30	100	4657-0205
63.5	2 1/2	-40	75.4	2.97	3.45	500	13.79	2000	559	22	2.19	1.47	30	100	4657-0206
76.2	3	-48	88.9	3.50	3.45	500	13.79	2000	610	24	2.74	1.84	30	100	4657-0207

4657PS (MEGATECH™ 3000)**HIGH TEMPERATURE AND PRESSURE OIL/AIR HOSE**

Relative Cost ●●●○○○

Applications Power steering and rotary air compressor, petroleum based transmission and lubricating oils, and hydraulic oil except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline.

Temperature -40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.

Standards None

Construction CPE tube, two steel wire braid reinforcement, CPE with black braided textile cover.

Packaging Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.

Couplings MegaCrimp® Couplings.

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	15.0	0.59	20.68	3000	82.74	12000	51	2	0.37	0.25	122	400	4657-2373
9.5	3/8	-6	18.8	0.74	20.68	3000	82.74	12000	64	2.5	0.52	0.35	107	350	4657-2374
12.7	1/2	-8	21.8	0.86	20.68	3000	82.74	12000	89	3.5	0.55	0.37	107	350	4657-2319

4657JT (MEGATECH™ II)

**HIGH TEMPERATURE AND PRESSURE
LARGE DIAMETER OIL/AIR HOSE**



- Relative Cost** ●●●●○
- Applications** Large diameter lines for rotary air compressor, petroleum based transmission and lubricating oils, and hydraulic oil except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline.
- Temperature** -40 °C to +150 °C (-40 °F to +302 °F).
- Standards** SAE 100R2 and 100R2 Type S.
- Construction** CPE tube, two steel wire braid reinforcement, CPE with blue braided textile cover.
- Packaging** Bulk lengths shipped in a carton. May not be continuous lengths. Custom lengths available with minimum order quantity.
- Couplings** MegaCrimp® Couplings (-20), GSP Couplings (-24 and -32).

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
31.8	1 1/4	-20	48.0	1.89	15.51	2250	62.05	9000	381	15	2.35	1.58	30	100	4657-8018
38.1	1 1/2	-24	54.1	2.13	10.34	1500	41.37	6000	508	20	2.59	1.74	30	100	4657-2484
50.8	2	-32	66.3	2.61	8.96	1300	35.85	5200	635	25	3.24	2.18	30	100	4657-2485

4657TB (MEGATECH™ G5TB)

HIGH TEMPERATURE OIL/AIR HOSE



- Relative Cost** ●●●○○
- Applications** Turbo hot oil return and rotary air compressor. Not for biodiesel blends greater than 5% (above B5) or gasoline, and -24 and -32 not for diesel fuel or gasoline.
- Temperature** -40 °C to +150 °C (-40 °F to +302 °F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100 °C (212 °F) max.
- Standards** None.
- Construction** CPE tube, steel wire braid reinforcement, CPE with blue braided textile cover.
- Packaging** Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.
- Couplings** MegaCrimp® Couplings, GL couplings (-24 and -32).

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	15.0	0.59	20.68	3000	82.74	12000	51	2	0.36	0.24	122	400	4657-2183
9.5	3/8	-6	18.8	0.74	20.68	3000	82.74	12000	64	2.5	0.52	0.35	107	350	4657-2184
12.7	1/2	-8	21.8	0.86	20.68	3000	82.74	12000	89	3.5	0.55	0.37	107	350	4657-2185
15.9	5/8	-10	24.1	0.95	13.79	2000	55.16	8000	102	4	0.58	0.39	91	300	4657-2186
19.1	3/4	-12	27.9	1.10	13.79	2000	55.16	8000	119	4.7	0.88	0.59	61	200	4657-2187
25.4	1	-16	34.8	1.37	6.89	1000	27.58	4000	152	6	1.12	0.75	46	150	4657-2188
31.8	1 1/4	-20	42.4	1.67	6.89	1000	27.58	4000	216	8.5	1.41	0.95	30	100	4657-2189
38.1	1 1/2	-24	49.5	1.95	3.45	500	13.79	2000	241	9.5	1.65	1.11	30	100	4657-2190
50.8	2	-32	64.3	2.53	3.45	500	13.79	2000	267	10.5	2.40	1.61	30	100	4657-2191

- Coolant
- Fuel
- OIL**
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

3317LE (PS188)**POWER STEERING PRESSURE LINE**

- Relative Cost** ●●●○○
- Applications** Power steering pressure line.
- Temperature** -40°C to +150°C (-40°F to +302°F).
- Standards** SAE J2050 Class B (light weight).
- Construction** CSM tube, synthetic fabric reinforcement, CSM cover (CPE tube and cover for 3317-0107).
- Packaging** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
- Couplings** Power Steering Couplings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	25 ft. Length	50 ft. Length
9.5 +0.8/-0.1	3/8 +.03/-0.005	17.9 ±0.63	0.705 ±0.025	10.34	1500	41.37	6000	95	28	127	5	0.30	0.2	3317-0107	3317-0108

3317AB (MEGATECH™ HVE)**NOISE DAMPENING POWER STEERING PRESSURE LINE**

- Relative Cost** ●●●○○
- Applications** Power steering pressure line with high volumetric expansion for noise and impulse dampening.
- Temperature** -40°C to +150°C (-40°F to +302°F).
- Standards** None.
- Construction** CPE tube, synthetic fiber braid reinforcement, CPE with black braided textile cover.
- Packaging** Shipped on a reel. May not be continuous lengths. Custom lengths available with minimum order quantity.
- Couplings** Global spiral stem with 8GB1F-PS ferrule.

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
13.1	.515	-8	23,4	0.92	15.51	2250	62.05	9000	178	7	0.31	0.21	104	340	3317-5005

3283SA

POWER STEERING RETURN LINE



- Relative Cost** ●●●○○
- Applications** Power steering return line.
- Temperature** -40°C to +135°C (-40°F to +275°F).
- Standards** SAE J189.
- Construction** Nitrile tube, synthetic fiber reinforcement, neoprene cover.
- Packaging** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.
- Couplings** MegaCrimp® Couplings -4 to -12.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
9.5	3/8	16.6	0.66	1.72	250	6.89	1000	95	28	100	4	0.22	0.15	7.6	25	3283-4490
12.7	1/2	19.1	0.75	2.07 *	300 *	8.27 *	1200 *	95	28	125	5	0.27	0.18	3.0	10	3283-0922
15.9	5/8	24.6	0.97	1.38 *	200 *	5.52 *	800 *	95	28	140	5.5	0.41	0.27	3.0	10	3283-0923
19.1	3/4	26.2	1.03	1.72 *	250 *	6.89 *	1000 *	95	28	150	7	0.36	0.24	3.0	10	3283-0924

* No specification requirement.

3283LF

HIGH TEMPERATURE POWER STEERING RETURN LINE



- Relative Cost** ●●●○○
- Applications** Power steering return line.
- Temperature** -40°C to +150°C (-40°F to +302°F).
- Standards** SAE J189 and SAE J2076.
- Construction** CPE tube, synthetic fiber reinforcement, CPE cover.
- Packaging** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)








ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
8.7	11/32	17.3	0.68	1.72	250	12.41	1800	95	28	125	5	0.24	0.16	7.6	25	3283-0921
9.5	3/8	16.6	0.66	1.72	250	12.41	1800	95	28	100	4	0.24	0.16	7.6	25	3283-4485

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4278

**FORMED FUEL AND OIL HOSE
STANDARD SHAPES**



-  **Relative Cost** ●●●●○
-  **Applications** Engine oil, fuel filler, and hydraulic return. Also suitable for tank vent and crank case vent. Not for fuel injection or air intake.
-  **Temperature** -40 °C to +125 °C (-40 °F to +257 °F).
-  **Standards** SAE 30R7 except the oxidized gasoline test, or SAE 30R6.
-  **Construction** Nitrile tube, synthetic knit reinforcement, nitrile/PVC cover.
-  **Packaging** Boxed.
-  **Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

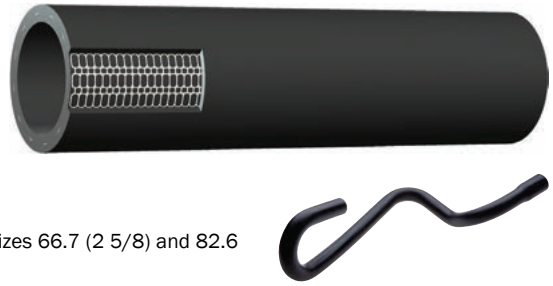
ID		Wall Nominal		Burst Minimum		90° Bend*		45° Bend*		Straight Length**		Weight Ref.	
mm	inch	mm	inch	MPa	psi	Gates Item No.	Inter-change No.	Gates Item No.	Inter-change No.	Gates Item No.	Inter-change No.	kg/m	lbs/ft
34.9 ±0.99	1 3/8 ±0.039	4.95 ±0.65	0.195 ±0.025	0.55	80					4271-0025	24702	0.74	0.50
38.1	1 1/2	4.95	0.195	0.55	80	4278-6998	24715	4278-6988	24710	4271-0030	23964	0.80	0.54
44.5	1 3/4	4.95	0.195	0.55	80	4278-6999	24716	4278-6989	24711	4271-0035	23968	0.94	0.63
50.8	2	4.95	0.195	0.55	80	4278-7000	24717	4278-6990	24712	4271-0045	23972	1.04	0.70
57.2	2 1/4	5.35 ±1.05	0.21 ±0.04	0.55	80	4278-7001	24718	4278-6991	24713	4271-0055	23976	1.15	0.77
63.5	2 1/2	5.35	0.21	0.55	80	4278-7002	24719	4278-6992	24714	4271-0065	23980	1.22	0.82

* Both leg lengths 203±6.4mm (8.00±0.25 inch).
 ** Length 914±11.2mm (36.00±0.44 inch).

- Coolant
- Fuel
- Oil**
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4278CN

STANDARD FORMED FUEL AND OIL HOSE



Relative Cost ●●●○○

Applications Engine oil, fuel filler, and hydraulic suction. Also suitable for tank vent and crank case vent. Not for fuel injection or air.

Temperature -40°C to +125°C (-40°F to +257°F).

Standards SAE 30R7 except the oxidized gasoline test, or SAE 30R6. Sizes 66.7 (2 5/8) and 82.6 (3 1/4) meet SAE J2006 for marine wet exhaust.

Construction Nitrile tube, synthetic knit reinforcement, nitrile/PVC cover.

Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
4.8 ±0.40	3/16 ±0.016	11.2 ±0.58	0.44 ±0.023	1.72	250	81	24	13.2	0.52	0.10	0.07
6.4	1/4	12.7	0.50	1.72	250	81	24	12.7	0.50	0.12	0.08
7.9	5/16	14.3	0.56	1.72	250	81	24	12.7	0.50	0.13	0.09
8.0	0.32	14.3	0.56	4.14	600	81	24	15.7	0.62	0.15	0.10
8.7	11/32	15.1	0.59	1.72	250	81	24	12.7	0.50	0.15	0.10
9.5	3/8	15.9	0.62	1.72	250	81	24	17.5	0.69	0.15	0.10
11.1 ±0.58 ***	7/16 ±0.023	18.3 ±0.79	0.72 ±0.031	1.21	175	34	10	19.1	0.75	0.20	0.14
12.7	1/2	19.8	0.78	1.21	175	34	10	19.1	0.75	0.22	0.15
14.0 ±0.79	0.55 ±0.031	20.8	0.82	1.21	175	34	10	19.1	0.75	0.25	0.17
15.9	5/8	23.8	0.94	1.21	175	34	10	20.8	0.82	0.30	0.20
16.8	0.66	24.65 ±1.59	0.97 ±0.063	1.21	175	34	10	21.6	0.85	0.34	0.23
18.3	23/32	27.8	1.09	1.21	175	34	10	26.9	1.06	0.42	0.28
19.1	3/4	28.6	1.13	1.21	175	34	10	28.7	1.13	0.43	0.29
22.2	7/8	31.8	1.25	1.21	175	34	10	30.2	1.19	0.48	0.32
23.1	0.91	32.7	1.29	1.21	175	34	10	36.6	1.44	0.60	0.40
25.4	1	34.9	1.38	1.21	175	34	10	38.1	1.50	0.57	0.38

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
26.4 ±0.99	1.04 ±0.039	4.95 ±0.65	0.195 ±0.025	0.55	80	**	**	42.9	1.69	0.60	0.40
28.6	1 1/8	4.95	0.195	0.55	80	**	**	44.5	1.75	0.60	0.40
31.8	1 1/4	4.95	0.195	0.55	80	**	**	46.2	1.82	0.68	0.46
33.0 ***	1.30	4.95	0.195	0.55	80	**	**	47.8	1.88	0.71	0.48
34.9	1 3/8	4.95	0.195	0.55	80	**	**	48.5	1.91	0.74	0.50
38.1	1 1/2	4.95	0.195	0.55	80	**	**	50.8	2.00	0.80	0.54
41.3	1 5/8	4.95	0.195	0.55	80	**	**	52.3	2.06	0.86	0.58
44.5	1 3/4	4.95	0.195	0.55	80	**	**	60.5	2.38	0.94	0.63
47.6	1 7/8	4.95	0.195	0.55	80	**	**	63.5	2.50	1.00	0.67
50.8	2	4.95	0.195	0.55	80	**	**	73.2	2.88	1.04	0.70
57.2	2 1/4	5.35 ±1.05	0.21 ±0.04	0.55	80	**	**	73.2	2.88	1.15	0.77
60.3	2 3/8	5.35	0.21	0.55	80	**	**	76.2	3.00	1.18	0.79
63.5	2 1/2	5.35	0.21	0.55	80	**	**	77.7	3.06	1.22	0.82
66.7	2 5/8	5.35	0.21	0.55	80	**	**	81.0	3.19	1.38	0.93
69.9	2 3/4	5.35	0.21	0.55	80	**	**	81.0	3.19	1.43	0.96
76.2	3	5.70 ±1.40	0.225 ±0.055	0.55	80	**	**	88.9	3.50	1.58	1.06
82.6	3 1/4	5.70	0.225	0.55	80	**	**	101.6	4.00	2.05	1.38
88.9	3 1/2	5.70	0.225	0.55	80	**	**	101.6	4.00	1.83	1.23
92.1	3 5/8	5.70	0.225	0.55	80	**	**	101.6	4.00	1.93	1.30

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.
 *** Contact Gates for availability.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

42780B

HIGHER PRESSURE FORMED FUEL AND OIL HOSE

- Relative Cost** ●●●●○
- Applications** Engine oil and hydraulic suction applications. Not for fuel injection or air.
- Temperature** -40°C to +125°C (-40°F to +257°F).
- Standards** SAE 30R2 Type 1 except burst and thickness.
- Construction** Nitrile tube, aramid knit reinforcement, nitrile/PVC cover.
- Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
12.7 ±0.58	1/2 ±0.023	20.7 ±0.79	0.81 ±0.031	1.72	250	34	10	25.4	1.00	0.24	0.16
15.9	5/8	23.9	0.94	1.72	250	**	**	25.4	1.00	0.28	0.19
19.1	3/4	27.7	1.09	1.72	250	**	**	25.4	1.00	0.33	0.22

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
25.4 ±0.99	1 ±0.039	4.95 ±0.65	0.195 ±0.025	2.07	300	**	**	35.1	1.38	0.60	0.40
28.6	1 1/8	4.95	0.195	2.07	300	**	**	38.1	1.50	0.60	0.40
31.8	1 1/4	4.95	0.195	1.72	250	**	**	38.1	1.50	0.68	0.46
33.3***	1.31	4.95	0.195	1.72	250	**	**	42.7	1.68	0.73	0.49
34.9***	1 3/8	4.95	0.195	1.72	250	**	**	42.9	1.69	0.74	0.50
38.1	1 1/2	4.95	0.195	1.38	200	**	**	44.5	1.75	0.80	0.54

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.

4278SS

HIGHER TEMPERATURE FORMED OIL HOSE



- Relative Cost** ●●●○○
- Applications** Power steering remote reservoir, crank case vent, transmission oil, turbo oil drain, and turbo air. Not for fuel line.
- Temperature** -40°C to +150°C (-40°F to +302°F) for power steering or engine oil, and 135°C (275°F) for crank case vent.
- Standards** Material to SAE J200 M5DE 710 B15 E036.
- Construction** Peroxide cured CPE tube, polyester knit reinforcement, peroxide cured CPE cover.
- Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
9.5 ±0.76	3/8 ±0.03	16.8 ±0.51	0.66 ±0.02	1.20	174	**	**	14.7	0.58	0.24	0.13
12.7	1/2	20.3	0.80	1.20	174	**	**	17.5	0.69	0.24	0.17
15.1	19/32	23.1 ±0.76	0.91 ±0.03	1.20	174	**	**	18.8	0.74	0.28	0.19
15.9	5/8	23.9	0.94	1.20	174	**	**	19.6	0.77	0.28	0.20
19.1	3/4	28.6	1.12	1.03	150	**	**	25.1	0.99	0.33	0.30

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
25.4 ±1.59	1 ±0.06	4.95 ±0.65	0.195 ±0.025	0.86	125	**	**	35.1	1.38	0.55	0.41
31.8	1 1/4	4.95	0.195	0.76	110	**	**	41.3	1.63	0.60	0.50
38.1	1 1/2	4.95	0.195	0.76	110	**	**	44.5	1.75	0.76	0.59
44.5	1 3/4	4.95	0.195	0.76	110	**	**	50.8	2.00	1.09	0.73

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

- Coolant
- Fuel
- OIL**
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



DRIVEN BY POSSIBILITY™

CARBON FIBER TECHNOLOGY ENGINEERED FOR OPTIMAL SCR PERFORMANCE

GATES® SCR SYSTEMS DIESEL ENGINE EMISSION REGULATIONS ARE SERIOUS BUSINESS, SO WHEN IT COMES TIME TO DESIGN YOUR SCR HOSE ASSEMBLY, GATES HAS YOU COVERED. WE MANU-

FACTURE SCR HOSES TO NEARLY ANY LENGTH, WITH INNOVATIVE HEATING SYSTEMS TO THAW MORE EFFICIENTLY IN COLD WEATHER, CONSERVE FUEL, AND LAST LONGER.



SCR (SELECTIVE CATALYTIC REDUCTION)

Diesel emissions fluid (DEF) for SCR systems

4202.....	Heated line for DEF injection / return	89
4401.....	Heated Line for DEF Injection/Return.....	91
4217IS.....	Bulk length transfer and tank filler / vent.....	88
4256PC.....	Formed tank filler / vent (not co-axial vent).....	88

Also see:

4327.....	Colored nylon tubing for unheated DEF injection / return, or tank vent.....	124-125
4697G.....	(Renegade or Chem Master™ Plus UHMWPE SD)	
	Bulk length transfer, chemical hose with wire helix. See Gates Industrial Hose catalog.	
Coolant hose section.....	SCR system heater / coolant hoses.....	16 - 53

Coolant
Fuel
OIL
SCR
DEF
Exhaust
Air
Refrigerant
Brake
Accessories
Belts



4217IS

STANDARD DIESEL EMISSION FLUID HOSE



Relative Cost ●●●○○

DEF Applications Transfer of urea solutions such as AdBlue® used in exhaust treatment of diesel engines equipped with selective catalytic reduction (SCR) technology.

Temperature -40 °C to +125 °C (-40 °F to +257 °F).

Standards None.

Construction Zinc-free peroxide cured EPDM tube, synthetic fiber reinforcement, EPDM cover, wrapped appearance.

Packaging Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133) or stainless steel braid couplings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	12.7	0.50	3.45	500	13.79	2000	95	28	76	3	0.15	0.10	152	500	4217-0007
9.5	3/8	16.8	0.66	2.41	350	6.89	1000	95	28	76	3	0.22	0.15	229	750	4217-0302
12.7	1/2	23.9	0.94	2.41	350	6.89	1000	95	28	76	3	0.42	0.28	305	1000	4217-0303
19.1	3/4	28.5	1.12	2.41	350	6.89	1000	51	15	102	4	0.48	0.32	168	550	4217-0310
25.4	1	34.5	1.36	2.41	350	6.89	1000	34	10	152	6	0.61	0.41	122	400	4217-0311

Also see 4327 nylon tubing (page 62) or 4697G Chem Master™ Plus UHMWPE (125-200) SD hose in the Gates Industrial Hose catalog.

4256PC

DEF TANK FILL AND VENT



Relative Cost ●●●○○

DEF Applications Fill or vent lines for DEF fluid reservoir. Also used for engine coolant. Not for conveying fuel or oil.

Temperature -40 °C to +150 °C (-40 °F to +302 °F).

Standards Similar to SAE 20R3 EC HT Class D3 or 20R4 EC HT Class D3

Construction p-EPDM tube, aramid knit reinforcement, EPDM cover.

Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC HT Class D3											
9.5 ±0.8	3/8 ±0.03	16.2 ±0.8	0.64 ±0.03	1.72	250	**	**	14.2	0.56	0.14	0.09
19.0	3/4	27.0	1.03	1.72	250	**	**	29.0	1.14	0.30	0.20

ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Nominal	
mm	in.	mm	inch	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC HT Class D3											
25.4	1	5.00 ±0.7	0.197 ±0.028	1.72	250	**	**	43.2	1.70	0.54	0.36
31.8***	1 1/4	5.00	0.197	1.72	250	**	**	50.8	2.00	0.62	0.41

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement.

*** Contact Gates for availability.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



4202 (NYLON HOTLINE™)

DIESEL EMISSION FLUID HEATED LINE



- Relative Cost** ●●●●●
- Applications** DEF fluid tank to dosing pump, to DEF injector, and return to tank. Electric connections per customer specification, 12V or 24V. Also suitable for diesel fuel or oil heated line when using FKM O-rings.
- Temperature** -40°C to +125°C (-40°F to +257°F).
- Standards** Resistance to DEF per ISO 22241, connectors per SAE J2044, coupling integrity per J2045.
- Construction** Nylon tube, carbon fiber heating sleeve, EPDM closed-cell foam or nylon convolute, thermoplastic over-molded quick-connect ends (straight or 90° angle). Minimum length = 200mm (12") for 12V system, or 400mm (24") for 24V system.
- Packaging** All parts made and packaged to order. Minimum order quantity applies.
- Couplings** SAE J2044 quick connect.

ID		OD		Work. Press. Max.		Sleeve OD		Bend Rad. Min.		Weight Nominal	
mm	in.	mm	in.	MPa	psi	mm	in.	mm	in.	kg/m	lbs/ft
3.2	0.13	5.2	0.20	1.4	200	12.7	0.5	12.5	0.49	0.13	0.09
6.0	0.24	8.0	0.31	1.4	200	16	0.6	38	1.50	0.15	0.10

4202 (EPDM HOTLINE™)

DIESEL EMISSION FLUID HEATED LINE



- Relative Cost** ●●●●●
- Applications** DEF fluid tank to dosing pump, to DEF injector, and return to tank. Electric connections per customer specification, 12V or 24V. Also suitable for diesel fuel or oil heated line when using FKM O-rings.
- Temperature** -40°C to +150°C (-40°F to +302°F).
- Standards** Resistance to DEF per ISO 22241, connectors per SAE J2044 and coupling integrity per J2045.
- Construction** Zinc-free peroxide-cured EPDM rubber tube, carbon fiber heating sleeve, EPDM closed-cell foam or nylon convolute, thermoplastic over-molded quick-connect ends (straight or 90° angle). Minimum length = 200mm (12") for 12V system, or 400mm (24") for 24V system.
- Packaging** All parts made and packaged to order. Minimum order quantity applies.
- Couplings** SAE J2044 quick connect.

ID		OD		Work. Press. Max.		Sleeve OD		Bend Rad. Min.		Weight Nominal	
mm	in.	mm	in.	MPa	psi	mm	in.	mm	in.	kg/m	lbs/ft
4.0	0.157	9.4	0.37	1.4	200	18	0.72	51	2.00	0.22	0.15
5.5	0.217	11.4	0.45	1.4	200	21	0.83	70	2.75	0.24	0.16

- Coolant
- Fuel
- Oil
- SCR
- DEF
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



DRIVEN BY POSSIBILITY™

THE LATEST TECHNOLOGY IN DIESEL EMISSION FLUID HOSE: GATES SCR FLUID SYSTEMS WITH HEAT WEAVE TECHNOLOGY

AN OPTIMIZED AND INNOVATIVE SOLUTION FOR DEF FLUID TRANSFER.

Gates Heat Weave Technology is the latest advancement in SCR systems. Our patented new design offers resistance within the integrated, conductive helical strands producing heat along the length of the SCR hose line — twice.

Gates heat weave heated diesel emission fluid lines are efficient and robust designs for the toughest industrial applications.

Gates SCR Heat Weave Technology is engineered to deliver optimal SCR system performance.

FEATURES + BENEFITS

- **Corrosion Resistant** — Sealed connectors prevent exposed circuit wires
- **Uniform Heating** — Heat Weave creates consistent heating pattern
- **Abrasion Resistance** — Woven heating strands provide redundant circuits and new TPR cover protects heating elements
- **Compact Design** — For easier routing in tight spaces and improved ergonomics
- **Lighter Weight** — Drives achievement of weight and fuel efficiency targets





DRIVEN BY POSSIBILITY™

THE NEXT GENERATION IN EMISSION REDUCTION

GATES SCR SYSTEMS WITH HEAT WEAVE:

THE MOST ADVANCED SCR TECHNOLOGY FOR DIESEL ENGINES.

Diesel engine emission regulations are serious business, so when it comes time to design your SCR system, Gates has you covered. We manufacture SCR hoses to nearly any length, with innovative heat-weave heating systems to thaw more efficiently in cold weather while surviving the harshest environmental conditions.

Gates SCR Technology is designed to help reduce diesel engine emissions by thawing frozen diesel exhaust fluid (DEF) and transporting it to the SCR catalyst, which converts nitrogen oxide (NOx) into harmless water vapor and nitrogen gas, helping diesel engines meet emission standards without sacrificing reliability or performance.

INDUSTRIES + APPLICATIONS:

- Truck + Bus
- Construction + Mining
- Agriculture
- DEF Fluid Tank to and from Dosing Pump
- DEF Injector + Return to Tank
- 12V or 24V Systems
- Diesel Fuel or Oil Heated Line (using FKM O-rings)

4401 (HEAT WEAVE™)

DIESEL EMISSION FLUID HEATED LINE



	Relative Cost	●●●●○
	Applications	DEF fluid tank to dosing pump, to DEF injector, and return to tank. Electric connections per customer specification, 12V or 24V. Also suitable for diesel fuel or oil heated line when using FKM O-rings.
	Temperature	-40 °C to +125 °C (-40 °F to +257 °F).
	Standards	Resistance to DEF per ISO 22241, connectors per SAE J2044, coupling integrity per J2045.
	Construction	Nylon tube, woven heating sleeve, TPR cover, thermo-plastic weatherproof quick connect ends. Minimum length = 530mm (20.9") for 12V system, or 1060mm (41.7") for 24V system.
	Packaging	All parts made and packaged to order. Minimum order quantity applies.
	Couplings	SAE J2044 quick connect.

ID		OD		Work. Press. Max.		Bend Rad. Min.		Weight Nominal	
mm	in.	mm	in.	MPa	psi	mm	in.	kg/m	lbs/ft
6.0	0.24	10.5	0.415	1.4	200	38	1.50	0.09	0.06

- Coolant
- Fuel
- Oil
- SCR
- DEF
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



DRIVEN BY POSSIBILITY



DRIVEN BY POSSIBILITY™

ENGINEERED FOR PEACE OF MIND

MARINE WET EXHAUST HOSE

WHEN YOUR OPERATIONS ARE OUT AT SEA, YOU CAN'T AFFORD CRITICAL SYSTEM FAILURE. TRUST GATES WHEN YOU NEED HIGH-PERFORMING, LONG-LASTING SOLUTIONS IN MARINE FUEL HOSE, COOLANT HOSE, AND MARINE WET EXHAUST. GATES ENGINEERS MARINE HOSES WITH CORROSION-RESISTANT CONSTRUCTION, FLEXIBILITY FOR TIGHT BENDS AND HEAVY-DUTY SUCTION. OUR PROCESS

OF DISCOVERY AND INTENTIONAL INNOVATION LEADS TO BREAKTHROUGHS THAT ENHANCE TECHNOLOGY, ALLOWING GATES TO CREATE SOLUTIONS THAT EXCEED THE EXPECTATIONS OF OUR CUSTOMERS AROUND THE WORLD. OUR MATERIALS SCIENCE AND ENGINEERING CAPABILITIES ARE WHAT DIFFERENTIATE US; IT'S OUR BIGGEST COMPETITIVE ADVANTAGE.





EXHAUST

Marine Wet Exhaust

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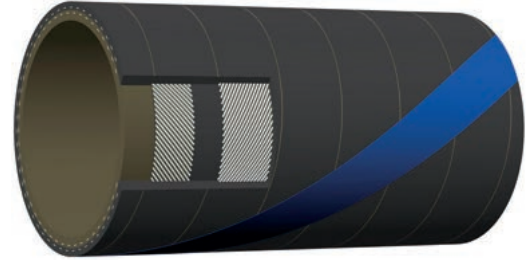
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Coolant
Fuel
Oil
SCR
Exhaust 
Air
Refrigerant 
Brake
Accessories
Belts

3137ME

MARINE WET EXHAUST HOSE



Relative Cost ●●●○○



Applications Wet exhaust, engine coolant, and water circulation or discharge hose. Also suitable for air. Not for conveying fuel or oil.



Temperature -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.



Standards SAE J2006 R1.



Construction EPDM tube, synthetic fabric reinforcement plies, EPDM cover with blue spiral and wrapped appearance.



Packaging Bulk lengths are 12.5 foot sticks polyfilm wrapped. Custom lengths available with minimum order quantity.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	12.5 ft. Length
28.6 ±1.6	1 1/8 ±0.06	35.6 ±1.6	1.40 ±0.06	0.69	100	2.07	300	**	**	*	*	0.67	0.45	3137-1207
31.8	1 1/4	38.9	1.53	0.69	100	2.07	300	**	**	*	*	0.72	0.49	3137-1209
34.9	1 3/8	42.9	1.69	0.69	100	2.07	300	**	**	*	*	0.78	0.53	3137-1213
38.1	1 1/2	45.2	1.78	0.69	100	2.07	300	**	**	*	*	0.85	0.57	3137-1215
41.3	1 5/8	48.5	1.91	0.69	100	2.07	300	**	**	*	*	0.91	0.61	3137-1217
44.5	1 3/4	51.6	2.03	0.69	100	2.07	300	**	**	*	*	0.97	0.65	3137-1219
47.6	1 7/8	55.6	2.19	0.69	100	2.07	300	**	**	*	*	1.03	0.69	3137-1221
50.8	2	58.9	2.32	0.69	100	2.07	300	**	**	*	*	1.09	0.73	3137-1223
54.0	2 1/8	62.2	2.45	0.69	100	2.07	300	**	**	*	*	1.15	0.78	3137-1225
57.2	2 1/4	65.3	2.57	0.69	100	2.07	300	**	**	*	*	1.19	0.80	3137-1227
60.3	2 3/8	68.3	2.69	0.69	100	2.07	300	**	**	*	*	1.27	0.86	3137-1229
63.5	2 1/2	71.6	2.82	0.69	100	2.07	300	**	**	*	*	1.34	0.90	3137-1231
66.7	2 5/8	74.9	2.95	0.69	100	2.07	300	**	**	*	*	1.40	0.94	3137-1233
69.9	2 3/4	78.5	3.09	0.69	100	2.07	300	**	**	*	*	1.46	0.98	3137-1235
73.0	2 7/8	82.0	3.23	0.69	100	2.07	300	**	**	*	*	1.52	1.02	3137-1237
76.2	3	85.3	3.36	0.69	100	2.07	300	**	**	*	*	1.72	1.16	3137-1239
88.9	3 1/2	98.0	3.86	0.69	100	2.07	300	**	**	*	*	1.98	1.33	3137-1245
101.6	4	110.7	4.36	0.69	100	2.07	300	**	**	*	*	2.21	1.49	3137-1249
114.3	4 1/2	123.4	4.86	0.69	100	2.07	300	**	**	*	*	2.50	1.68	3137-1252
127.0	5	136.4	5.37	0.69	100	2.07	300	**	**	*	*	2.78	1.87	3137-1253
152.4	6	162.1	6.38	0.69	100	2.07	300	**	**	*	*	3.23	2.17	3137-1254

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

4686ME

WIRE REINFORCED MARINE WET EXHAUST HOSE



Relative Cost ●●●○○

Applications Wet exhaust, engine coolant, and water circulation or discharge hose where tight bends or vacuum is required. Also suitable for air. Not for conveying fuel or oil.

Temperature -40 °C to +125 °C (-40 °F to +257 °F) continuous for coolant, and 100 °C (212 °F) maximum for conveying air.

Standards SAE J2006 R2.

Construction EPDM tube, synthetic fabric reinforcement plies and two helical steel wires, EPDM cover with wrapped appearance.

Packaging Bulk lengths are 12.5 foot sticks polyfilm wrapped. Custom lengths available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

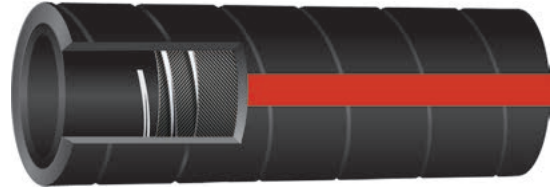
ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	12.5 ft. Length	200 ft. Length
28.6 ±1.6	1 1/8 ±0.06	38.1 ±1.6	1.50 ±0.06	0.69	100	2.07	300	101	30	64	2.5	0.87	0.58	4686-0602	
31.8	1 1/4	41.1	1.62	0.69	100	2.07	300	101	30	64	2.5	0.94	0.63	4686-0604	
34.9	1 3/8	44.5	1.75	0.69	100	2.07	300	101	30	76	3.0	1.02	0.68	4686-0606	
38.1	1 1/2	47.8	1.88	0.69	100	2.07	300	101	30	89	3.5	1.09	0.74	4686-0608	
41.3	1 5/8	50.8	2.00	0.69	100	2.07	300	101	30	89	3.5	1.15	0.78	4686-0610	
44.5	1 3/4	53.9	2.12	0.69	100	2.07	300	101	30	102	4.0	1.25	0.84	4686-0612	
47.6	1 7/8	56.9	2.24	0.69	100	2.07	300	101	30	114	4.5	1.32	0.89	4686-0614	
50.8	2	59.9	2.36	0.69	100	2.07	300	101	30	127	5.0	1.42	0.95	4686-0616	
54.0	2 1/8	63.3	2.49	0.69	100	2.07	300	101	30	140	5.5	1.49	1.00	4686-0618	
57.2	2 1/4	66.8	2.63	0.69	100	2.07	300	101	30	152	6.0	1.55	1.04	4686-0620	
60.3	2 3/8	69.9	2.75	0.69	100	2.07	300	101	30	165	6.5	1.64	1.10	4686-0622	
63.5	2 1/2	73.7	2.90	0.69	100	2.07	300	101	30	165	6.5	1.73	1.16	4686-0624	
66.7	2 5/8	76.7	3.02	0.69	100	2.07	300	101	30	178	7.0	1.80	1.21	4686-0626	
69.9	2 3/4	81.8	3.22	0.69	100	2.07	300	101	30	191	7.5	1.87	1.26	4686-0628	
73.0	2 7/8	86.9	3.42	0.69	100	2.07	300	101	30	203	8.0	1.96	1.32	4686-0630	
76.2	3	89.9	3.54	0.69	100	2.07	300	101	30	229	9.0	2.30	1.55	4686-0632	4686-0656 ***
88.9	3 1/2	102.6	4.04	0.69	100	2.07	300	101	30	229	9.0	2.65	1.78	4686-0638	4686-0657 ***
101.6	4	115.3	4.54	0.69	100	2.07	300	101	30	305	12.0	3.28	2.20	4686-0640	
114.3	4 1/2	128.0	5.04	0.69	100	2.07	300	101	30	305	12.0	3.67	2.46	4686-0642	
127.0	5	140.7	5.54	0.69	100	2.07	300	101	30	508	20.0	4.04	2.71	4686-0643	
139.7	5 1/2	153.4	6.04	0.69	100	2.07	300	101	30	559	22.0	4.66	3.13	4686-0645	
152.4	6	165.9	6.53	0.69	100	2.07	300	101	30	610	24.0	4.79	3.22	4686-0646	

*** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4684CF

**WIRE REINFORCED,
OIL RESISTANT COOLANT HOSE**



Relative Cost ●●●○○



Applications Engine coolant lower radiator hose where fuel and oil resistance and tight bends or vacuum is required. Also suitable for marine wet exhaust and diesel fuel filler.



Temperature -40°C to +100°C (-40°F to +212°F)



Standards SAE 20R2 Class B tube, Class C cover except vacuum SAE J2006. Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.



Construction Nitrile tube, synthetic fabric reinforcement plies with two embedded helical wires, neoprene cover with wrapped appearance.



Packaging Bulk lengths are 10 foot sticks in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length	200 ft. Length
25.4 ±0.08	1 ±0.03	37.3	1.47	0.69	100	2.76	400	84.5	25	76	3	0.73	0.49	4684-1540	
28.6	1 1/8	40.6	1.60	0.69	100	2.76	400	84.5	25	102	4	0.80	0.54	4684-1545	
31.8	1 1/4	43.7	1.72	0.69	100	2.76	400	84.5	25	102	4	0.88	0.59	4684-1551	
34.9	1 3/8	47.0	1.85	0.60	88	2.41	350	84.5	25	102	4	0.95	0.64	4684-1556	
38.1	1 1/2	50.0	1.97	0.60	88	2.41	350	67.6	20	102	4	1.01	0.68	4684-1561	
41.3	1 5/8	53.3	2.10	0.52	75	2.07	300	67.6	20	127	5	1.08	0.72	4684-1601	
44.5	1 3/4	56.4	2.22	0.52	75	2.07	300	67.6	20	127	5	1.15	0.77	4684-1611	
47.6	1 7/8	59.4	2.34	0.43	63	1.72	250	67.6	20	127	5	1.20	0.81	4684-1651	
50.8 ±1.6	2 ±0.06	62.7	2.47	0.43	63	1.72	250	67.6	20	127	5	1.27	0.86	4684-1660	
54.0	2 1/8	66.0	2.60	0.39	56	1.55	225	67.6	20	152	6	1.35	0.91	4684-1670	
57.2	2 1/4	69.1	2.72	0.39	56	1.55	225	67.6	20	152	6	1.42	0.95	4684-1680	
60.3	2 3/8	72.4	2.85	0.34	50	1.38	200	67.6	20	178	7	1.49	1.00	4684-1690	
63.5	2 1/2	75.4	2.97	0.34	50	1.38	200	67.6	20	178	7	1.55	1.04	4684-1700	
66.7	2 5/8	78.7	3.10	0.30	44	1.21	175	50.7	15	229	9	1.61	1.08	4684-1711	
69.9	2 3/4	81.8	3.22	0.30	44	1.21	175	50.7	15	254	10	1.69	1.13	4684-1720	
73.0	2 7/8	85.1	3.35	0.30	44	1.21	175	50.7	15	279	11	1.75	1.18	4684-1730	
76.2	3	88.1	3.47	0.30	44	1.21	175	50.7	15	305	12	1.82	1.22	4684-1740	4684-1706***
88.9	3 1/2	100.8	3.97	0.26	38	1.03	150	50.7	15	432	17	2.10	1.41	4684-1750	4684-1707***
101.6	4	113.5	4.47	0.22	31	0.86	125	33.8	10	610	24	2.38	1.60	4684-1760	
114.3	4 1/2	126.2	4.97	0.17	25	0.69	100	16.9	5	686	27	2.66	1.79	4684-1764***	4684-1708***
127.0	5	138.9	5.47	0.13	19	0.52	75	16.9	5	762	30	2.94	1.98	4684-1766***	4684-1709***
152.4	6	164.3	6.47	0.13	19	0.52	75	16.9	5	914	36	3.50	2.35	4684-1722***	

*** Not stocked. Minimum order quantity applies.











4040T

HIGH TEMPERATURE SILICONE VACUUM TUBING



- Relative Cost** ●○○○○
-  **Applications** Differential pressure sensor tubing and vacuum lines for extreme temperatures. Also suitable for coolant overflow or vent. Not for conveying fuel or oil.
-  **Temperature** -55°C to +177°C (-67°F to +350°F).
-  **Standards** SAE J200 M2GE 705 Z1(60-70 Shore A).
-  **Construction** Orange silicone tube without reinforcement.
-  **Packaging** Coiled in a plastic clamshell container. Custom lengths available with minimum order quantity.
-  **Couplings** Hose bead fitting with or without hose clamps. (pages 127 - 133)

ID		Size Fitting		OD		Work. Press. Max.		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	6 ft. Length
2.77 +0/-0.8	0.109 +0/-0.03	3.2	1/8	5.8	0.229	*	*	85	25	25	1	0.021	0.014	4040-4140
3.96	.156	4.8	3/16	7.0	0.276	*	*	85	25	38	1.5	0.039	0.026	4040-4141
5.54	.218	6.4	1/4	8.6	0.338	*	*	85	25	38	1.5	0.050	0.033	4040-4142
6.35	.250	7.9	5/16	9.4	0.370	*	*	85	25	38	1.5	0.057	0.038	4040-4143

* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



DRIVEN BY POSSIBILITY™

FLEXIBLE DESIGNS FOR FLEXIBLE HOSES

AIR INTAKE, CHARGE AIR + AIR DUCTING HOSES

ENGINE AIR HOSES ARE THE LARGEST HOSES ON THE ENGINE, AND THE ROUTINGS ARE GETTING MORE DIFFICULT AND COMPLEX. FLEXIBILITY IS KEY, BOTH IN THE DESIGN OF THE HOSES AS WELL

AS THE CONSTRUCTION. TRUST GATES FOR ROBUST, FLEXIBLE SOLUTIONS TO KEEP YOUR EQUIPMENT RUNNING.



AIR

Defroster, Air Duct, Pre-Cleaner

7768	Low cost, thin propylene-ethylene with PP helix	100
4663A	Thicker, neoprene with wire helix	101
4663J	Heavy duty, neoprene with wire helix	102
4663G	Heavy duty, neoprene with wire helix, for abrasive environments	103

Air Cleaner

4663J	Oil resistant, with wire helix for flexibility	102
4663G	Oil resistant, with wire helix for flexibility, abrasive environments	103
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Also see:

Coolant hose section

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Vacuum Tubing

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Air Brake Compressor

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Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts



7768

DEFROSTER / AIR INTAKE HOSE



Relative Cost ○○○○○

Applications Defrosters, air ducts, air intakes, under-hood applications, and other low pressure/ low suction applications. Also approved for marine applications.

Temperature -40°C to +107°C (-40°F to +225°F).

Standards Meets DOT FMVSS 302.

Construction Propylene-ethylene reinforced with one polypropylene helix. Wall thickness 0.3mm (0.013 inch) between the coils.

Packaging Individually boxed in 1.83m (6 foot) lengths compressed to 0.53m (21 inches).

Couplings Fasten with hose clamps. (pages 127 - 133)

ID		Work. Press. Max.		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	Interchange Number
mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft		
32 +3/-0	1 1/4 +.12/-0	0.07	10	*	*	38	1.5	0.09	0.06	7768-4070	23820
38	1 1/2	0.07	10	*	*	51	2	0.12	0.08	7768-4071	23824
45	1 3/4	0.07	10	*	*	64	2.5	0.13	0.09	7768-4072	23828
50	2	0.07	10	*	*	76	3	0.15	0.1	7768-4073	23832
57	2 1/4	0.06	9	*	*	89	3.5	0.16	0.11	7768-4074	23836
63	2 1/2	0.06	9	*	*	95	3.75	0.19	0.13	7768-4075	23840
70	2 3/4	0.06	8	*	*	102	4	0.21	0.14	7768-4076	23844
76	3	0.06	8	*	*	108	4.25	0.21	0.14	7768-4077	23848
83	3 1/4	0.03	5	*	*	102	4	0.22	0.15	7768-4085	23850
89	3 1/2	0.02	3	*	*	108	4.25	0.27	0.18	7768-4078	23856
102	4	0.02	3	*	*	114	4.5	0.33	0.22	7768-4080	23864
114	4 1/2	0.05	7	9.5	2.8	64	2.5	0.00		7768-4081	23872
127	5	0.04	6	6.8	2.0	76	3	0.00		7768-4082	23880
152	6	0.03	5	11.9	3.5	102	4	0.67	0.45	7768-4084	23896

* Not recommended.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4663A (63SB)

WIRE REINFORCED, OIL RESISTANT, THIN WALL AIR HOSE



Relative Cost ●●●○○

Applications Air cleaner or defroster duct where tight bends are required. Not for conveying liquids.

Temperature -34°C to +121°C (-30°F to +250°F)

Standards None.

Construction Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene impregnated fabric cover.

Packaging Bulk lengths are 10 foot coil in a box. Custom lengths or ends with no wire are available with minimum order quantity.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
15.9	5/8	20.7	0.81	0.07	10	0.28	40	16.9	5	25	1	0.16	0.11	4663-4108
19.1	3/4	23.9	0.94	0.07	10	0.28	40	16.9	5	25	1	0.19	0.13	4663-4109
22.2	7/8	27.0	1.06	0.07	10	0.28	40	16.9	5	25	1	0.22	0.15	4663-4110
25.4	1	30.2	1.19	0.07	10	0.28	40	16.9	5	25	1	0.27	0.18	4663-4111
31.8	1 1/4	36.6	1.44	0.07	10	0.28	40	16.9	5	25	1	0.33	0.22	4663-4112
34.9	1 3/8	39.7	1.56	0.07	10	0.28	40	16.9	5	38	1.5	0.34	0.23	4663-4113
38.1	1 1/2	42.9	1.69	0.07	10	0.28	40	16.9	5	38	1.5	0.37	0.25	4663-4114
41.3	1 5/8	46.1	1.81	0.07	10	0.28	40	16.9	5	51	2	0.40	0.27	4663-4115
44.5	1 3/4	49.3	1.94	0.07	10	0.28	40	16.9	5	51	2	0.43	0.29	4663-4116
47.6	1 7/8	52.4	2.06	0.07	10	0.28	40	16.9	5	51	2	0.46	0.31	4663-4117
50.8	2	55.6	2.19	0.03	5	0.14	20	10.1	3	51	2	0.49	0.33	4663-4118
54.0	2 1/8	58.8	2.31	0.03	5	0.14	20	10.1	3	64	2.5	0.52	0.35	4663-4119
57.2	2 1/4	62.0	2.44	0.03	5	0.14	20	10.1	3	64	2.5	0.55	0.37	4663-4120
60.3	2 3/8	65.1	2.56	0.03	5	0.14	20	10.1	3	64	2.5	0.57	0.38	4663-4121
63.5	2 1/2	68.3	2.69	0.03	5	0.14	20	10.1	3	64	2.5	0.60	0.40	4663-4122
66.7	2 5/8	71.5	2.81	0.03	5	0.14	20	10.1	3	71	2.8	0.62	0.42	4663-4123
69.9	2 3/4	74.7	2.94	0.03	5	0.14	20	10.1	3	71	2.8	0.65	0.44	4663-4124
76.2	3	81.0	3.19	0.03	5	0.14	20	10.1	3	76	3	0.71	0.48	4663-4125
88.9	3 1/2	93.7	3.69	0.03	5	0.14	20	10.1	3	89	3.5	0.83	0.56	4663-4126
92.1	3 5/8	96.8	3.81	0.03	5	0.14	20	10.1	3	102	4	0.86	0.58	4663-4127
101.6	4	106.4	4.19	0.03	5	0.14	20	10.1	3	102	4	1.09	0.73	4663-4128
114.3	4 1/2	119.1	4.69	0.03	5	0.14	20	10.1	3	127	5	1.21	0.81	4663-4129
127.0	5	131.8	5.19	0.03	5	0.14	20	10.1	3	152	6	1.34	0.90	4663-4130
139.7	5 1/2	144.5	5.69	0.03	5	0.14	20	10.1	3	152	6	1.47	0.99	4663-4131
152.4	6	157.2	6.19	0.03	5	0.14	20	10.1	3	**	**	1.59	1.07	4663-1491 ***
177.8	7	182.6	7.19	0.03	5	0.14	20	10.1	3	**	**	1.86	1.25	4663-3992 ***

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity applies.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



4663J (163SB)

WIRE REINFORCED, OIL RESISTANT, AIR HOSE



Relative Cost ●●●○○

Applications Heavy-duty air cleaner or defroster duct where tight bends are required. Not for conveying liquids.

Temperature -34°C to +121°C (-30°F to +250°F)

Standards None.

Construction Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene cover.

Packaging Bulk lengths are 10 foot coil in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.

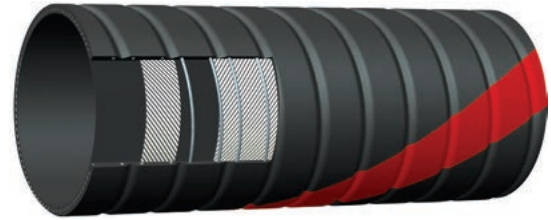
Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
19.1	3/4	24.6	0.97	0.14	20	0.55	80	50.7	15	25	1	0.25	0.17	4663-1516***
25.4	1	31.0	1.22	0.14	20	0.55	80	50.7	15	25	1	0.33	0.22	4663-1518***
31.8	1 1/4	37.3	1.47	0.14	20	0.55	80	50.7	15	25	1	0.43	0.29	4663-1530***
34.9	1 3/8	40.6	1.60	0.10	15	0.41	60	50.7	15	38	1.5	0.49	0.33	4663-3321***
38.1	1 1/2	45.5	1.79	0.10	15	0.41	60	50.7	15	38	1.5	0.52	0.35	4663-1540***
41.3	1 5/8	47.2	1.86	0.10	15	0.41	60	50.7	15	46	1.8	0.55	0.37	4663-1543***
44.5	1 3/4	50.3	1.98	0.10	15	0.41	60	50.7	15	46	1.8	0.60	0.40	4663-3954***
47.6	1 7/8	53.6	2.11	0.10	15	0.41	60	50.7	15	46	1.8	0.64	0.43	4663-1548***
50.8	2	56.6	2.23	0.10	15	0.41	60	50.7	15	51	2	0.65	0.44	4663-1550***
54.0	2 1/8	61.0	2.40	0.07	10	0.28	40	50.7	15	64	2.5	0.70	0.47	4663-3461***
57.2	2 1/4	63.0	2.48	0.07	10	0.28	40	50.7	15	64	2.5	0.73	0.49	4663-1556***
60.3	2 3/8	66.3	2.61	0.07	10	0.28	40	50.7	15	64	2.5	0.77	0.52	4663-1560***
63.5	2 1/2	69.3	2.73	0.07	10	0.28	40	50.7	15	64	2.5	0.82	0.55	4663-1565***
66.7	2 5/8	72.6	2.86	0.07	10	0.28	40	50.7	15	76	3	0.85	0.57	4663-1615***
69.9	2 3/4	75.7	2.98	0.07	10	0.28	40	50.7	15	178	7	0.94	0.63	4663-3456***
76.2	3	82.0	3.23	0.07	10	0.28	40	23.7	7	254	10	0.97	0.65	4663-1570***
79.4	3 1/8	85.1	3.35	0.07	10	0.28	40	23.7	7	254	10	1.01	0.68	4663-1569***
88.9	3 1/2	94.7	3.73	0.07	10	0.28	40	23.7	7	254	10	1.12	0.75	4663-1575***
101.6	4	107.4	4.23	0.07	10	0.28	40	23.7	7	305	12	1.26	0.85	4663-1580***
114.3	4 1/2	120.1	4.73	0.07	10	0.28	40	23.7	7	305	12	1.56	1.05	4663-1589***
127.0	5	132.8	5.23	0.07	10	0.28	40	20.3	6	305	12	1.73	1.16	4663-1595***
139.7	5 1/2	145.5	5.73	0.07	10	0.28	40	20.3	6	305	12	1.89	1.27	4663-3454***
152.4	6	158.2	6.23	0.06	8	0.22	32	20.3	6	381	15	2.07	1.39	4663-1599***

*** Not stocked. Minimum order quantity applies.

4663G

WIRE REINFORCED, OIL RESISTANT, HEAVY WALL AIR HOSE



Relative Cost ●●●○○



Applications Heavy-duty air cleaner for abrasive environments where tight bends are required. Not for conveying liquids.



Temperature -40°C to +125°C (-40°F to +257°F)



Standards None.



Construction Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene cover.



Packaging Bulk lengths are 10 foot coil in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.



Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
101.6	4	107.4	4.23	0.07	10	0.28	40	23.7	7	305	12	1.32	0.89	4663-4132
114.3	4 1/2	120.1	4.73	0.07	10	0.28	40	23.7	7	305	12	1.49	1.00	4663-4133
127.0	5	132.8	5.23	0.07	10	0.28	40	20.3	6	305	12	1.64	1.10	4663-4134
139.7	5 1/2	145.5	5.73	0.07	10	0.28	40	20.3	6	305	12	1.80	1.21	4663-4135

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

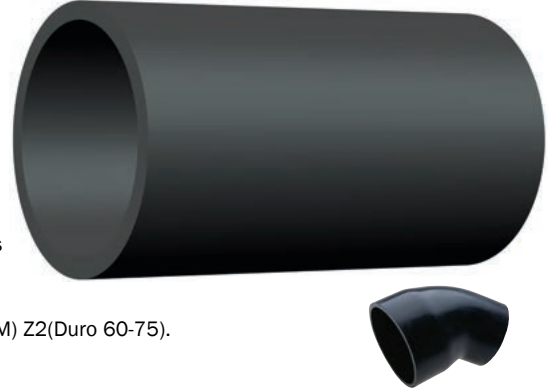
Brake

Accessories

Belts

4289E

**STANDARD FORMED AIR INTAKE/
VACUUM HOSE**



Relative Cost ●●●○○

Applications Engine air intake or air ducting. Also suitable for water suction. Not for conveying fuel or oil.

Temperature -40°C to +135°C (-40°F to +275°F) continuous with peaks of 150°C (302°F).

Standards SAE J200 M3CA 707 A25 B35 C32 F17 Z1(Duro 60-75), or SAE J200 M4CA 710 A25 B35 C32 EA14 F17 G21 Z1 (EPDM) Z2(Duro 60-75).

Construction EPDM tube with no reinforcement.

Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.






Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		Extruded ID		Wall Nominal			Vacuum Min.**		Expanded End ID*		Weight Nominal	
mm	in.	mm	inch	mm	inch	rtg.	kPa	inch Hg	mm	inch	kg/m	lbs/ft
5.6 ±0.8	7/32 ±0.03	4.8	0.19	2.92 ±0.51	0.115 ±0.02	1			11.1	0.4375	0.09	0.06
6.4	1/4	6.4	0.25	2.92	0.115	1			12.7	0.5	0.10	0.07
8.7	11/32	8.1	0.32	2.41	0.095	1			17.5	0.6875	0.10	0.07
8.7	11/32	8.1	0.32	4.95	0.195	2			17.5	0.6875	0.24	0.16
8.7	11/32	8.1	0.32	7.62	0.300	6	95	28.0	17.5	0.6875	0.44	0.30
9.5	3/8	9.1	0.36	1.40	0.055	1			19.1	0.75	0.06	0.04
11.9	15/32	11.4	0.45	4.57 ±0.76	0.180 ±0.030	1			23.8	0.9375	0.27	0.18
12.7	1/2	11.4	0.45	3.05	0.120	1			25.4	1	0.17	0.11
15.9	5/8	14.2	0.56	3.81	0.150	1			31.8	1.25	0.26	0.17
18.5	.73	17.5	0.69	4.06	0.160	1			37.1	1.46	0.31	0.21
19.1	3/4	18.0	0.71	0.51	0.020	2			38.1	1.5	0.43	0.29
19.1	3/4	18.0	0.71	6.48	0.255	4	95	28.0	38.1	1.5	0.57	0.38
22.2	7/8	21.1	0.83	3.81	0.150	1			44.5	1.75	0.36	0.24
25.4	1	24.1	0.95	5.59 ±1.02	0.220 ±0.040	2	37	11.0	50.8	2	0.61	0.41
28.6	1 1/8	27.2	1.07	4.70	0.185	2	22	6.6	57.2	2.25	0.55	0.37
31.8	1 1/4	30.2	1.19	6.35 ±1.27	0.250 ±0.050	4	37	11.0	63.5	2.5	0.85	0.57
33.3	1.31	31.5	1.24	6.35	0.250	4	30	8.8	66.5	2.62	0.43	0.29
34.9	1 3/8	33.3	1.31	6.35	0.250	4	27	8.1	69.9	2.75	0.92	0.62
36.6	1.44	34.8	1.37	6.35	0.250	4	22	6.6	73.2	2.88	0.95	0.64
36.6	1.44	34.8	1.37	9.91	0.390	9	37	11.0	73.2	2.88	1.58	1.06
38.1	1 1/2	36.1	1.42	4.83	0.190	3	19	5.5	76.2	3	0.70	0.47
38.1	1 1/2	36.1	1.42	6.35	0.250	4	22	6.6	76.2	3	0.98	0.66
38.1	1 1/2	36.1	1.42	6.73	0.265	5	22	6.6	76.2	3	1.06	0.71
41.3	1 5/8	39.1	1.54	6.35	0.250	4	22	6.6	82.6	3.25	1.06	0.71
44.5	1 3/4	42.2	1.66	4.95	0.195	2	8	2.5	88.9	3.5	0.86	0.58
44.5	1 3/4	42.2	1.66	5.97	0.235	3	10	3.0	88.9	3.5	1.06	0.71
44.5	1 3/4	42.2	1.66	6.35	0.250	4	14	4.0	88.9	3.5	1.13	0.76
44.5	1 3/4	42.2	1.66	6.60	0.260	5	14	4.0	88.9	3.5	1.18	0.79
44.5	1 3/4	42.2	1.66	7.75	0.305	7	17	5.0	88.9	3.5	1.41	0.95
47.6	1 7/8	45.5	1.79	5.08	0.200	2	7	2.0	95.3	3.75	0.94	0.63
47.6	1 7/8	45.5	1.79	6.35	0.250	4	10	3.0	95.3	3.75	1.21	0.81
47.6	1 7/8	45.5	1.79	6.86	0.270	5	14	4.0	95.3	3.75	1.31	0.88
50.8	2	48.3	1.90	5.08	0.200	2	5	1.5	101.6	4	1.00	0.67
50.8	2	48.3	1.90	6.35	0.250	4	8	2.5	101.6	4	1.26	0.85
50.8	2	48.3	1.90	7.87	0.310	5	15	4.5	101.6	4	1.61	1.08
50.8	2	48.3	1.90	8.89	0.350	8	20	5.9	101.6	4	1.85	1.24



4289E

STANDARD FORMED AIR INTAKE/VACUUM HOSE (CON'T)

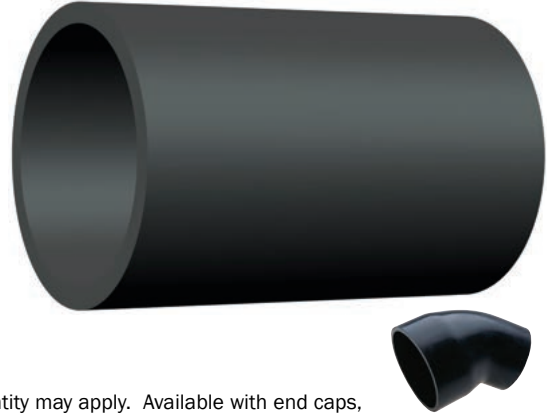
 ID		Extruded ID		 Wall Nominal			 Vacuum Min.**			 Expanded End ID*		 Weight Nominal	
mm	in.	mm	inch	mm	inch	rtg.	kPa	inch Hg	mm	inch	kg/m	lbs/ft	
53.8	2.12	51.3	2.02	2.92	0.115	1	2	0.5	107.7	4.24	0.60	0.40	
53.8	2.12	51.3	2.02	7.87	0.310	6	14	4.3	107.7	4.24	1.70	1.14	
53.8	2.12	48.5	1.91	9.65	0.380	9	24	7.0	107.7	4.24	2.04	1.37	
55.6	2.19	52.8	2.08	6.35	0.250	4	8	2.3	111.3	4.38	1.37	0.92	
57.2	2 1/4	54.4	2.14	4.95	0.195	2	3	1.0	114.3	4.5	1.06	0.71	
57.2	2 1/4	54.4	2.14	6.35	0.250	4	7	2.0	114.3	4.5	1.41	0.95	
57.2	2 1/4	54.4	2.14	7.62	0.300	5	12	3.5	114.3	4.5	1.73	1.16	
57.2	2 1/4	54.4	2.14	8.76	0.345	7	19	5.5	114.3	4.5	2.01	1.35	
57.9	2.28	55.1	2.17	3.99	0.157	1	2	0.5	115.8	4.56	0.85	0.57	
59.9	2.36	56.9	2.24	6.35	0.250	4	7	2.0	119.9	4.72	1.47	0.99	
59.9	2.36	56.9	2.24	7.87	0.310	8	14	4.0	119.9	4.72	1.86	1.25	
63.5	2 1/2	60.2	2.37	4.83	0.190	1	3	1.0	127.0	5	1.13	0.76	
63.5	2 1/2	60.2	2.37	5.59	0.220	2	5	1.5	127.0	5	1.35	0.91	
63.5	2 1/2	60.2	2.37	6.35	0.250	4	7	2.0	127.0	5	1.55	1.04	
63.5	2 1/2	60.2	2.37	7.37	0.290	6	10	3.0	127.0	5	1.82	1.22	
63.5	2 1/2	60.2	2.37	8.13	0.320	8	14	4.0	127.0	5	2.02	1.36	
63.5	2 1/2	60.2	2.37	9.14	0.360	9	17	5.0	127.0	5	2.31	1.55	
65.0	2.56	61.7	2.43	6.35	0.250	4	7	2.0	130.0	5.12	1.58	1.06	
69.9 ±1.5	2 3/4 ±0.06	66.3	2.61	6.35	0.250	4	5	1.5	139.7	5.5	1.68	1.13	
69.9	2 3/4	66.3	2.61	6.73	0.265	5	5	1.5	139.7	5.5	1.79	1.20	
69.9	2 3/4	66.3	2.61	7.37	0.290	6	7	2.0	139.7	5.5	1.98	1.33	
69.9	2 3/4	66.3	2.61	8.13	0.320	8	10	3.0	139.7	5.5	2.20	1.48	
69.9	2 3/4	66.3	2.61	9.53	0.375	9	19	5.5	139.7	5.5	2.62	1.76	
76.2	3	72.4	2.85	6.35	0.250	4	3	1.0	152.4	6	1.83	1.23	
76.2	3	72.4	2.85	6.86	0.270	5	5	1.5	152.4	6	1.98	1.33	
76.2	3	72.4	2.85	7.37	0.290	6	7	2.0	152.4	6	2.14	1.44	
76.2	3	72.4	2.85	8.13	0.320	7	10	3.0	152.4	6	2.38	1.60	
76.2	3	72.4	2.85	8.76	0.345	8	14	4.0	152.4	6	2.59	1.74	
76.2	3	72.4	2.85	9.40	0.370	9	17	5.0	152.4	6	2.80	1.88	
79.4	3 1/8	75.4	2.97	6.35	0.250	4	3	1.0	158.8	6.25	1.90	1.28	
82.6	3 1/4	78.5	3.09	6.35	0.250	4	3	1.0	165.1	6.5	1.96	1.32	
82.6	3 1/4	78.5	3.09	8.13	0.320	7	7	2.0	165.1	6.5	2.56	1.72	
88.9	3 1/2	84.3	3.32	6.35	0.250	4	2	0.5	165.1	6.5	2.10	1.41	
88.9	3 1/2	84.3	3.32	8.13	0.320	6	7	2.0	165.1	6.5	2.74	1.84	
88.9	3 1/2	84.3	3.32	8.76	0.345	7	8	2.5	165.1	6.5	2.96	1.99	
88.9	3 1/2	84.3	3.32	9.53	0.375	8	12	3.5	165.1	6.5	3.24	2.18	
95.3	3.75	90.4	3.56	6.35	0.250	4	2	0.5	165.1	6.5	2.25	1.51	
95.3	3.75	90.4	3.56	8.13	0.320	8	5	1.5	165.1	6.5	2.92	1.96	
101.6	4	96.5	3.80	6.35	0.250	4	2	0.5	165.1	6.5	2.38	1.60	
101.6	4	96.5	3.80	7.87	0.310	6	5	1.5	165.1	6.5	2.99	2.01	
101.6	4	96.5	3.80	8.89	0.350	8	7	2.0	165.1	6.5	3.41	2.29	
101.6	4	96.5	3.80	9.53	0.375	9	8	2.5	165.1	6.5	3.66	2.46	
101.6	4	96.5	3.80	10.03	0.395	7	10	3.0	165.1	6.5	3.93	2.64	
106.9	4.21	101.6	4.00	9.53	0.375	9	8	2.5	165.1	6.5	3.84	2.58	

* For cuff length on one end only. This guideline is subject to change based on the complexity of the hose design.
 ** Not a specification requirement. See the hose design section. Can be increased with a wire coil inserted in the hose ID.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4289N

**OIL RESISTANT FORMED AIR INTAKE/
VACUUM HOSE**



Relative Cost ●●●●○

Applications Engine air intake with internal oil mist, exhaust fumes, or crank case fumes, or external oily environment. Also suitable for water suction. Not for conveying fuel.

Temperature -40 °C to +100 °C (-40 °F to +212 °F)

Standards SAE J200 M3BC 707 E014 E034 F17 Z1(8.28MPa Tb), or SAE J200 M3BC 707 A14 C12 E014 E034 F17.

Construction Neoprene tube with no reinforcement.

Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		Extruded ID		Wall Nominal			Vacuum Min.**			Expanded End ID*		Weight Nominal	
mm	in.	mm	inch	mm	inch	rtg.	kPa	inch Hg	mm	inch	kg/m	lbs/ft	
15.9 ±0.8	5/8 ±0.03	15.0	0.59	6.35 ±0.76	0.250 ±0.03	4	95	28.0	11.1	0.4375	0.61	0.41	
19.1	3/4	18.0	0.71	0.51	0.020	2	95	28.0	38.1	1.5	0.54	0.36	
19.1	3/4	18.0	0.71	6.35	0.250	4	95	28.0	38.1	1.5	0.70	0.47	
25.4	1	24.1	0.95	6.35	0.250	4	44	13.0	50.8	2	0.88	0.59	
28.6	1 1/8	26.9	1.06	5.08 ±1.27	0.200 ±0.05	2	30	8.8	57.2	2.25	0.74	0.50	
31.8	1 1/4	30.2	1.19	6.35	0.250	4	37	11.0	63.5	2.5	1.06	0.71	
38.1	1 1/2	36.3	1.43	6.35	0.250	4	22	6.6	76.2	3	1.22	0.82	
39.9	1.57	37.8	1.49	1.52	0.060	1	2	0.5	79.8	3.14	0.28	0.19	
41.4	1.63	39.4	1.55	3.43	0.135	1	7	2.0	82.8	3.26	0.67	0.45	
41.4	1.63	39.4	1.55	4.19	0.165	2	17	5.0	82.8	3.26	1.00	0.67	
44.5	1 3/4	42.2	1.66	6.35	0.250	4	14	4.0	88.9	3.5	1.40	0.94	
44.5	1 3/4	42.2	1.66	7.75	0.305	5	19	5.5	88.9	3.5	1.74	1.17	
50.8	2	48.3	1.90	5.08	0.200	3	5	1.5	101.6	4	1.21	0.81	
50.8	2	48.3	1.90	6.35	0.250	4	8	2.5	101.6	4	1.56	1.05	
50.8	2	48.3	1.90	7.49	0.295	5	12	3.5	101.6	4	1.89	1.27	
57.2	2 1/4	54.4	2.14	6.35	0.250	5	7	2.0	114.3	4.5	1.74	1.17	
63.5	2 1/2	60.5	2.38	6.35	0.250	4	7	2.0	127.0	5	1.92	1.29	
63.5	2 1/2	60.5	2.38	7.62	0.300	5	12	3.5	127.0	5	2.34	1.57	
68.8	2.71	65.3	2.57	9.53	0.375	6	19	5.5	137.7	5.42	3.20	2.15	
69.9 ±1.5	2 3/4 ±0.06	66.3	2.61	6.99	0.275	5	6	1.8	139.7	5.5	2.31	1.55	
76.2	3	72.4	2.85	6.35	0.250	4	3	1.0	152.4	6	2.26	1.52	
76.2	3	72.4	2.85	8.13	0.320	5	10	3.0	152.4	6	2.95	1.98	
88.9	3 1/2	84.3	3.32	6.35	0.250	4	2	0.5	152.4	6	2.60	1.75	
101.6	4	96.5	3.80	6.35	0.250	4	2	0.5	152.4	6	2.95	1.98	
101.6	4	96.5	3.80	8.00	0.315	6	5	1.5	152.4	6	3.76	2.53	
127.0	5	106.7	4.20	6.35	0.250	4	2	0.5	152.4	6	3.24	2.18	

* For cuff length on one end only. This guideline is subject to change based on the complexity of the hose design.

** Not a specification requirement. See the hose design section. Can be increased with a wire coil inserted in the hose ID.

7736

AIR INTAKE HOSE - STANDARD SHAPES



- Relative Cost** ●●○○○
- Applications** Connection to the air filter or other air ducting. Also suitable for water suction. Not for conveying fuel or oil.
- Temperature** -40°C to +107°C (-40°F to +225°F)
- Standards** SAE J200 M3BC 714 A14 E034 F17. ID tolerance is +0/-1.6 mm (+0/-0.062 inch) unless otherwise specified.
- Construction** Neoprene rubber with or without reinforcement.
- Packaging** Boxed.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)

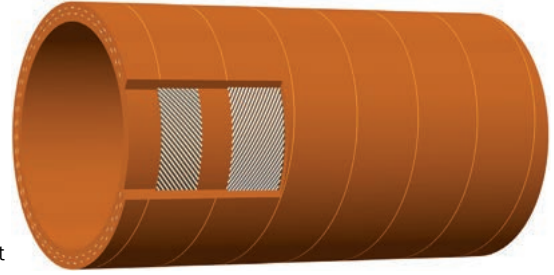
ID		Length		Bend Angle	Gates Item Number
mm	in.	mm	in.	Degrees	
Hump Hose					
101.6	4	127.00	5.00	-	3177-1005
127.0	5	152.40	6.00	-	3177-1007
139.7	5 1/2	152.40	6.00	-	3177-1006
152.4	6	127.00	5.00	-	3177-1008
Reducer Hump Hose					
76.2 x 88.9	3 x 3 1/2	133.35	5.25	-	7736-1041
76.2 x 101.6	3 x 4	133.35	5.25	-	7736-1042
139.7 x 152.4	5 1/2 x 6	152.40	6.00	-	7736-1027
152.4 x 177.8	6 x 7	127.00	5.00	-	7736-1030
Elbow Hose					
76.2	3	133.4 x 133.4	5.25 x 5.25	90	7736-1050
88.9	3 1/2	133.4 x 133.4	5.25 x 5.25	45	7736-1051
88.9	3 1/2	139.7 x 139.7	5.50 x 5.50	90	7736-1052*
127.0	5	133.4 x 133.4	5.25 x 5.25	45	7736-1026
127.0	5	152.4 x 152.4	6.00 x 6.00	90	7736-1025
139.7 x 152.4	5 1/2 x 6	177.8 x 177.8	7.00 x 7.00	90	7736-1063
152.4	6	165.1 x 165.1	6.50 x 6.50	45	7736-1028*
152.4	6	190.5 x 190.5	7.50 x 7.50	45	7736-1058*
152.4	6	177.8 x 177.8	7.00 x 7.00	90	7736-1029*
177.8	7	190.5 x 190.5	7.50 x 7.50	90	7736-1033

* Ribbed exterior surface for added vacuum resistance.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4171H

HIGH TEMPERATURE SILICONE AIR HOSE



- Relative Cost** ●●●●○
- Applications** Turbo hose or connector.
- Temperature** -40°C to +288°C (-40°F to +550°F)
- Standards** None.
- Construction** Orange silicone tube, high temperature fabric reinforcement plies, orange silicone cover with wrapped appearance.
- Packaging** Bulk lengths are 10 foot coil in a box. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting fastened with hose clamps. (pages 127 - 133)


ID		OD Reference		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
22.2 ±0.8	7/8 ±0.031	27.8 ±1.6	1.09 ±0.063	1.38	200	5.52	800	*	*	**	**	0.30	0.2	***
25.4	1	31.0	1.22	1.38	200	5.52	800	*	*	**	**	0.33	0.22	4171-0652***
31.8	1 1/4	37.4	1.47	1.38	200	5.52	800	*	*	**	**	0.40	0.27	4171-0672***
34.9	1 3/8	40.5	1.59	1.38	200	5.52	800	*	*	**	**	0.43	0.29	***
38.1	1 1/2	43.7	1.72	1.38	200	5.52	800	*	*	**	**	0.46	0.31	4171-0695***
44.5	1 3/4	50.1	1.97	1.24	180	4.96	720	*	*	**	**	0.54	0.36	4171-0655***
50.8	2	56.4	2.22	1.10	160	4.41	640	*	*	**	**	0.61	0.41	4171-0656
57.2 ±1.2	2 1/4 ±0.047	62.8	2.47	1.10	160	4.41	640	*	*	**	**	0.67	0.45	4171-0657***
60.3	2 3/8	65.9	2.59	0.97	140	3.86	560	*	*	**	**	0.70	0.47	***
63.5	2 1/2	69.1	2.72	0.92	134	3.68	534	*	*	**	**	0.74	0.5	4171-0659
69.9	2 3/4	75.5	2.97	0.83	120	3.31	480	*	*	**	**	0.88	0.59	4171-0660***
76.2	3	81.8	3.22	0.78	113	3.12	452	*	*	**	**	0.95	0.64	4171-0661
82.6	3 1/4	88.2	3.47	0.72	105	2.88	418	*	*	**	**	0.98	0.66	4171-0662
85.7	3 3/8	91.3	3.60	0.69	100	2.76	400	*	*	**	**	1.26	0.85	***
88.9 ±1.6	3 1/2 ±0.063	95.8	3.77	0.83	120	3.31	480	*	*	**	**	1.35	0.91	4171-0663***
95.3	3 3/4	102.1	4.02	0.83	120	3.31	480	*	*	**	**	1.44	0.97	***
101.6	4	108.5	4.27	0.78	113	3.12	452	*	*	**	**	1.52	1.02	4171-0664
114.3	4 1/2	121.2 ±3.2	4.77 ±0.125	0.69	100	2.76	400	*	*	**	**	1.61	1.08	4171-0654***
127.0	5	133.9	5.27	0.62	90	2.48	360	*	*	**	**	1.77	1.19	4171-0665***


* No specification requirement.
 ** If minimum bend radius is required, use 8 times the O.D. as a guide.
 *** Not stocked. Minimum order quantity applies.

4177W (GREEN STRIPE™) / 4177C
OIL RESISTANT HUMP HOSE




Relative Cost ●●●●○


Applications  Vibration dampening connector on the air filter. Also suitable for coolant or cold-side charge air connections. There is no vacuum rating specification. Not for conveying fuel or oil.

Temperature  -40 °C to +100 °C (-40 °F to +212 °F).

Standards  SAE 20R1 Class B tube, Class C cover.

Construction  NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.

Packaging  Individually bagged and shipped in a box.

Couplings  Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		OD Hump		Length		Work. Press. Max.		Burst Minimum		Gates Item No.	Inter-change No.
mm	in.	mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	P/N	
31.8	1 1/4	41.7	1.64	56.4	2.22	101.6	4	0.47	69	1.90	275	3177-0027	23505
34.9	1 3/8	44.8	1.76	61.2	2.41	127.0	5	0.43	63	1.72	250	3177-0034	23511
38.1	1 1/2	48.0	1.89	63.5	2.50	127.0	5	0.43	63	1.72	250	3177-0023	23515
44.5	1 3/4	54.4	2.14	71.4	2.81	127.0	5	0.39	56	1.55	225	3177-0022	23520
50.8	2	60.7	2.39	81.8	3.22	88.9	3 1/2	0.34	50	1.38	200	3177-0032	23531
50.8	2	60.7	2.39	81.8	3.22	127.0	5	0.34	50	1.38	200	3177-0024	23533
57.2	2 1/4	67.1	2.64	88.9	3.50	114.3	4 1/2	0.30	44	1.21	175	3177-0026	23547
60.3	2 3/8	70.2	2.76	94.5	3.72	127.0	5	0.26	38	1.03	150	3177-0025	23557
60.3	2 3/8	70.2	2.76	94.5	3.72	158.8	6 1/4	0.26	38	1.03	150	3177-0015	23559
63.5	2 1/2	73.4	2.89	96.8	3.81	114.3	4 1/2	0.26	38	1.03	150	3177-0030	23562
63.5	2 1/2	73.4	2.89	96.8	3.81	152.4	6	0.26	38	1.03	150	3177-0028	23550
69.9	2 3/4	79.8	3.14	103.9	4.09	82.6	3 1/4	0.22	31	0.86	125	3177-0040	23566
69.9	2 3/4	79.8	3.14	103.9	4.09	114.3	4 1/2	0.22	31	0.86	125	3177-0033	23567
69.9	2 3/4	79.8	3.14	103.9	4.09	136.5	5 3/8	0.22	31	0.86	125	3177-0039	23568
76.2	3	86.1	3.39	112.0	4.41	101.6	4	0.17	25	0.69	100	3177-0004	23572
76.2	3	86.1	3.39	112.0	4.41	177.8	7	0.17	25	0.69	100	3177-0038	23575
88.9	3 1/2	98.8	3.89	127.0	5	139.7	5 1/2	0.10	15	0.41	60	3177-0043	23585
101.6	4	111.5	4.39	139.7	5.5	127.0	5	*	*	*	*	3177-1005	23002
127.0	5	136.9	5.39	175.5	6.91	152.4	6	*	*	*	*	3177-1007	23004
139.7	5 1/2	149.6	5.89	188.2	7.41	152.4	6	*	*	*	*	3177-1006	23005
152.4	6	162.3	6.39	200.9	7.91	127.0	5	*	*	*	*	3177-1008	23006

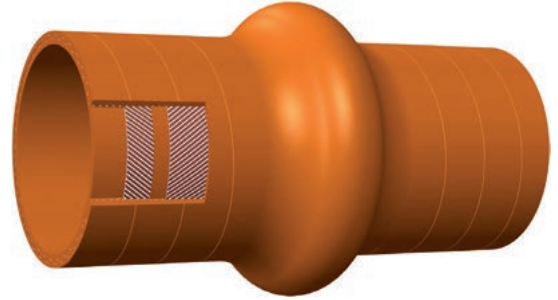
* Unreinforced hose - not rated for pressurized applications.

Coolant
Fuel
OIL
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts



4177S

HIGH TEMPERATURE SILICONE HUMP HOSE



Relative Cost ●●●●●

Applications Vibration dampening connector for turbocharger or charge air cooler. Also suitable for coolant.

Temperature -51°C to +177°C (-60°F to +350°F).

Standards SAE 20R1 Class A.

Construction Multiple plies of silicone and polyester.

Packaging All parts made and packaged to order. Minimum order quantity applies.

Couplings Hose bead fitting fastened with hose clamps. (pages 127 - 133)

ID		OD Nominal		OD Hump		Vacuum Minimum		Length		Work. Press. Max.		Burst Minimum	
mm	in.	mm	in.	mm	in.	kPa	in. Hg	mm	in.	MPa	psi	MPa	psi
31.8	1 1/4	41.7	1.64	56.4	2.22	17	5	101.6	4	0.45	65	1.90	275
44.5	1 3/4	54.4	2.14	71.4	2.81	17	5	86 to 127	3 3/8 to 5	0.38	55	1.55	225
50.8	2	60.7	2.39	81.8	3.22	17	5	70 to 230	2 3/4 to 9	0.34	50	1.38	200
57.2	2 1/4	67.1	2.64	88.9	3.50	17	5	76 to 230	3 to 9	0.28	40	1.21	175
63.5	2 1/2	73.4	2.89	96.8	3.81	17	5	76 to 203	3 to 8	0.24	35	1.03	150
69.9	2 3/4	79.8	3.14	103.9	4.09	17	5	70 to 178	2 3/4 to 7	0.21	30	0.86	125
76.2	3	86.1	3.39	112.0	4.41	17	5	76 to 178	3 to 7	0.17	25	0.69	100
88.9	3 1/2	98.8	3.89	127.0	5	17	5	89 to 178	3 1/2 to 7	0.12	17	0.52	75
101.6	4	111.5	4.39	139.7	5.5	17	5	102 to 165	4 to 6 1/2	0.08	12	0.34	50

STEEL / ALUMINUM TUBE ASSEMBLIES



Relative Cost ●●●●○

Applications Hot or cold side charge air, coolant, low pressure hydraulic, or oil applications.

Temperature Depends on hose connectors.

Standards ASTM A787 aluminized steel, A513 stainless steel, 6061-P4 aluminum, many more...

Construction Steel, aluminized steel, stainless steel, or aluminum tube, 1/4" to 6" OD, available with brushed, painted, or coated surface. Connector hoses are straight, curved, or hump hoses assembled with clamps or crimped rings.

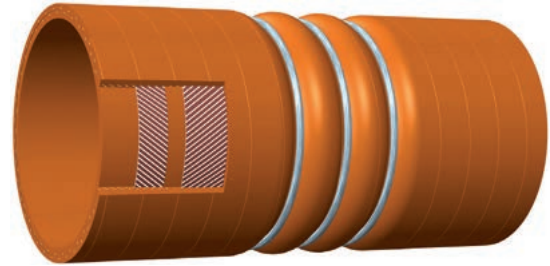
Packaging Boxed. Optional plugs, bulk bags, or individual bags.

Couplings Hose bead fitting fastened with hose clamps or T-bolt clamps.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4177

HIGH TEMPERATURE SILICONE HUMP AND RING HOSE

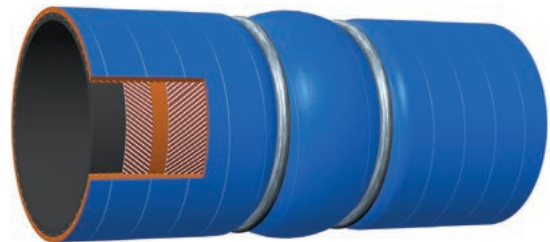


- Relative Cost** ●●●●●
- Applications** Vibration dampening connector for turbocharger or charge air cooler. Also suitable for coolant. Not for oil or fuel exposure.
- Temperature** -54 °C to +260 °C (-65 °F to +500 °F).
- Standards** Material per SAE J20 Class A.
- Construction** Multiple plies of silicone and synthetic fabric reinforcement with three or four stainless steel rings.
- Packaging** Parts are bagged and shipped in a box. Custom diameters or designs may be available with minimum order quantity and setup.
- Couplings** Hose bead fitting fastened with T-bolt clamps or spring-loaded T-bolt clamps. (page 129)

ID		OD Nominal		Length*		Work. Press. Max.		Burst Minimum		Number of Rings	Weight Ref.		Gates Item Number
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi		kg/each	lbs/ea.	
76.2 ±1.6	3.0 ±0.06	81.8	3.22	152	6	0.17	25	0.69	100	3	0.48	0.32	4177-4000
88.9	3 1/2	94.5	3.72	152	6	0.17	25	0.69	100	3	0.61	0.41	4177-4001
101.6	4	109.0	4.29	152	6	0.17	25	0.80	116	3	0.94	0.63	4177-4003
101.6	4	109.0	4.29	203	8	0.17	25	0.80	116	4	1.35	0.91	4177-4004

4177

HIGH TEMPERATURE SILICONE HUMP AND RING HOSE WITH OIL RESISTANT LINER



- Relative Cost** ●●●●●
- Applications** Hot or cold side charge air connector (including clamps) for use with internal recirculated crank case fumes or oil mist. Not for conveying fuel.
- Temperature** -51 °C to +225 °C (-60 °F to +437 °F).
- Standards** FKM tube per SAE J200 M2HK 710 A19 E036 F17, silicone cover per SAE J200 M5GE 606 A19 E016.
- Construction** FKM/silicone tube, meta-aramid fabric reinforcement, silicone cover with stainless steel rings.
- Packaging** Individually bagged with T-bolt clamps included.
- Couplings** Hose bead fitting fastened with T-bolt clamps or spring-loaded T-bolt clamps. (page 129)

ID		OD Nominal		Length		Work. Press. Max.		Burst Minimum		Number of Rings	Weight Ref. w/ Clamps		Gates Item Number
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi		kg/each	lbs/ea.	
75.0 ±1.6	2.95 ±.06	81.0	3.19	90	3.54	0.20	29	1.00	145.04	1	0.83	0.56	4177-1400
75.0	2.95	81.0	3.19	102	4.02	0.20	29	1.00	145.04	2	0.92	0.62	4177-1600
76.0	2.99	82.0	3.23	130	5.12	0.20	29	1.00	145.04	1	0.74	0.5	4177-1213
76.2x81.0	3.00x3.19	82.2x87	3.24x3.43	102	4.02	0.20	29	1.00	145.04	2	1.06	0.71	4177-1500
89.0	3.50	95.0	3.74	102	4.02	0.20	29	1.00	145.04	1	1.26	0.85	4177-1217

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

HM6060

OIL RESISTANT CHARGE AIR HOSE

Relative Cost ●●○○○



Applications Charge air hose for use with internal recirculated crank case fumes or oil mist. Not for conveying fuel.



Temperature -35 °C to +150 °C (-31 °F to +302 °F).



Standards Rubber material per FIAT 9.02136/01 B3-0, SAE J200 M5EE 708 621 21(Duro 60-75).



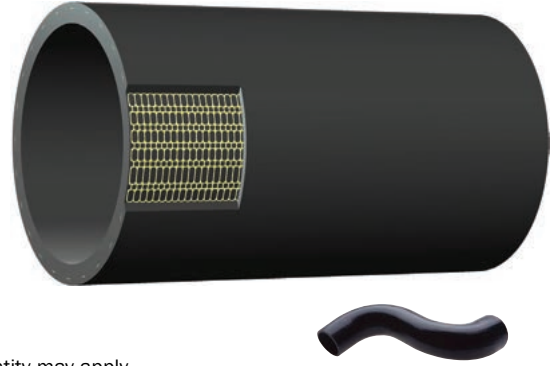
Construction AEM tube, knit aramid reinforcement, AEM cover.



Packaging Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.



Couplings Quick-connect couplings or hose bead fitting fastened with T-bolt clamps or spring loaded T-bolt clamps (Page 129).



ID		Wall Nominal		Burst Minimum		Vacuum Minimum		Expanded End ID*		Weight Ref.	
mm	inch	mm	inch	MPa	psi	kPa	in. Hg	mm	inch	kg/m	lbs/ft
10.0 ± 0.5	0.39 ± 0.02	3.5 ± 0.5	0.14 ± 0.02	1.0	145	**	**	13.0	0.51	0.19	0.13
15.0	0.59	4.5	0.18	1.0	145	**	**	19.5	0.77	0.36	0.24
19.0	0.75	4.0	0.16	1.0	145	**	**	25.0	0.98	0.37	0.25
22.0	0.87	4.5	0.18	0.8	116	**	**	29.0	1.14	0.49	0.33
35.0	1.38	4.5	0.18	0.6	87	**	**	45.0	1.77	0.72	0.48
36.0	1.42	5.0	0.20	0.6	87	**	**	47.0	1.85	0.83	0.56
38.0	1.50	5.0	0.20	0.6	87	**	**	49.0	1.93	0.87	0.58
39.0	1.54	4.5	0.18	0.6	87	**	**	51.0	2.01	0.80	0.54
41.0	1.61	4.5	0.18	0.6	87	**	**	53.0	2.09	0.83	0.56
44.0	1.73	4.0	0.16	0.6	87	**	**	57.2	2.25	0.78	0.52
44.0	1.73	5.0	0.20	0.6	87	**	**	57.2	2.25	1.00	0.67
48.0	1.89	5.0	0.20	0.6	87	**	**	63.0	2.48	1.08	0.73
50.0	1.97	5.0	0.20	0.6	87	**	**	63.5	2.50	1.12	0.75
54.0	2.13	5.0	0.20	0.6	87	**	**	65.0	2.56	1.20	0.81
63.0	2.48	5.0	0.20	0.6	87	**	**	76.2	3.00	1.48	0.99

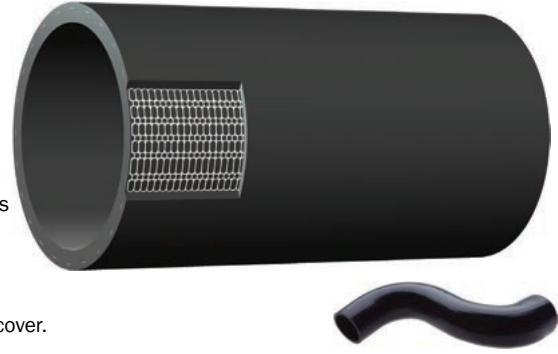
* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement.

4256NP / 4256PM

COLD SIDE CHARGE AIR HOSE

- Relative Cost** ●●●●○
- Applications** Cold side charge air hose. Not for conveying fuel or oil.
- Temperature** -40°C to +125°C (-40°F to +257°F) continuous with peaks to 150°C (302°F).
- Standards** SAE 20R4 Class D1 except wall 5.7 ± 1.4 mm (0.225 ± 0.055 inch).
- Construction** EPDM tube, meta-aramid fabric knit reinforcement, EPDM cover.
- Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
- Couplings** Hose bead fitting fastened with T-bolt clamps. (page 129)



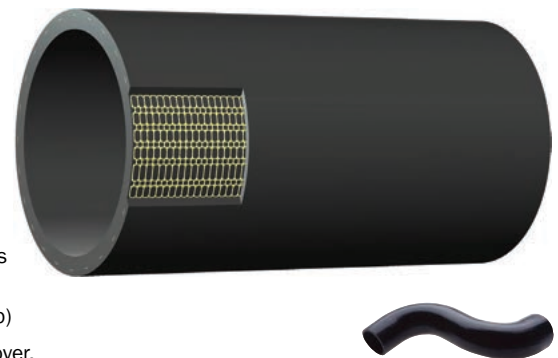
ID		Wall Nominal		Burst Minimum		Vacuum Min.**		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
57.2 ±0.8	2 1/4 ±0.03	5.7 ± 1.4	0.225 ± 0.055	0.76	110	**	**	73.2	2.88	0.98	0.66
63.5	2 1/2	5.70	0.225	0.76	110	**	**	82.6	3.25	1.08	0.72
66.7	2 5/8	5.70	0.225	0.76	110	**	**	87.6	3.45	1.28	0.86
76.2 ±1.6	3 ±0.06	5.70	0.225	0.76	110	**	**	99.1	3.90	1.43	0.96
88.9	3 1/2	5.70	0.225	0.76	110	**	**	101.6	4.00	1.70	1.14
101.6	4	5.70	0.225	0.76	110	**	**	114.3	4.50	1.92	1.29
101.6***	4	6.5 ± 1.5	0.255 ± 0.060	0.93	135	**	**	114.3	4.50	2.48	1.67

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.
 ***4256PM specification

4278AA

OIL AND FATIGUE RESISTANT COLD SIDE CHARGE AIR HOSE

- Relative Cost** ●●●●○
- Applications** Cold side charge air hose for use with internal recirculated crank case fumes or oil mist. Not for conveying fuel.
- Temperature** -40°C to +105°C (-40°F to +221°F) continuous with peaks to 125°C (257°F).
- Standards** Rubber per SAE J200 M3CE 810 B15 C32 F17 Z1(200% Eb)
- Construction** CPE tube, patented hybrid fabric knit reinforcement, CPE cover.
- Packaging** Various size boxes. Setup charge and minimum order quantity may apply. Available with end plugs, individually bagged, or bulk bagged in the box.
- Couplings** Hose bead fitting fastened with T-bolt clamps. (page 129)



ID		Wall Nominal		Burst Minimum		Vacuum Minimum**		Expanded End ID*		Weight Nominal	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
63.5 ±0.8	2 1/2 ±0.03	5.35 ±1.05	0.21 ±0.04	0.83	121	**	**	76.2	3.00	1.43	0.96
76.2 ±1.6	3 ±0.06	5.7 ±1.4	0.22 ±0.06	0.83	121	**	**	92.2	3.63	1.90	1.28
101.6	4	5.7 ±1.4	0.22 ±0.06	0.83	121	**	**	114.3	4.50	2.69	1.81

* For cuff length on one end only. This guideline is subject to change based on hose design.
 ** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



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WHEN CLIMATE CONTROL COUNTS, GATES HELPS YOU ADAPT TO ANY WEATHER

AIR CONDITIONING HOSE + COUPLINGS

WHETHER YOU'RE DRIVING A SEMI CROSS-COUNTRY OR HAULING YOUR TRACTOR IN THE FIELD, GATES AIR CONDITIONING HOSES, SYSTEMS AND ASSEMBLIES MAKE SURE YOU DON'T LOSE YOUR COOL. WE DESIGN EVERY GATES A/C COMPONENT TO THE MOST STRINGENT STANDARDS IN THE INDUSTRY, WITH ENERGY-EFFICIENT, ENVIRONMENTALLY SAFE AIR

CONDITIONING HOSE AND COUPLING SOLUTIONS BUILT TO RESIST HEAT, MOISTURE, AND OZONE DEGRADATION TO MAXIMIZE YOUR SYSTEM LONGEVITY. IF YOU NEED HELP DETERMINING WHICH HOSES AND ASSEMBLIES ARE BEST FOR YOUR APPLICATION, GATES APPLICATION AND PRODUCT EXPERTS ARE ALWAYS HERE TO HELP.





REFRIGERANT

Air Conditioning (Refrigerant)

3353 (PolarSeal™ II)..... Thin wall refrigerant hose	116
3353 (PolarSeal™)..... Standard refrigerant hose.....	117
Tube assemblies available.....	70, 110

Air Conditioning Duct

7768..... Low cost, thin propylene - ethylene with PP helix.....	100
--	-----

Air Conditioning Condensate Drain

4040A..... Unreinforced EPDM	39
7744 FoodMaster® PVC clear	See Gates Industrial Hose Catalog

Also see:

Coolant hose section

Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant ❄️
Brake
Accessories
Belts



3353 PolarSeal™ II

THIN WALL AIR CONDITIONING HOSE



Relative Cost ●●●○○



Applications Liquid and gaseous R134a and R12 refrigerants in air conditioning and refrigeration units with reduced bend radius and weight.



Temperature -40 °C to +135 °C (-40 °F to +275 °F).



Standards SAE J3062 Type C Class I.



Construction Neoprene, nylon barrier, neoprene, braided polyester, butyl rubber cover.



Packaging Bulk lengths are on a reel, 50 foot lengths are boxed. Custom lengths available with minimum order quantity.



Couplings PolarSeal™ II couplings (see Gates Hydraulic Catalogs) G45 series.

Size			ID		OD Nominal		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Nominal		Gates Item Number	Bulk Length		Gates Item Number
Dash	mm	inch	mm	inch	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	50ft. length	mm	ft	Bulk Length
-6	8	5/16	7.9 / 8.6	.309 / .339	14.2 / 15.2	.560 / .600	3.4	500	13.8	2000	38	1.5	0.17	0.12	3353-5007	152.4	500	3353-5006
-8	10	13/32	10.2 / 11.2	.401 / .440	16.8 / 17.8	.660 / .700	3.4	500	13.8	2000	51	2	0.22	0.146	3353-5009	152.4	500	3353-5008
-10	12	1/2	12.5 / 13.5	.490 / .530	18.9 / 19.9	.745 / .785	3.4	500	13.8	2000	64	2.5	0.25	0.168	3353-5011	91.4	300	3353-5010
-12	16	5/8	15.6 / 16.6	.615 / .655	23.1 / 24.1	.910 / .950	2.4	350	12.0	1750	76	3	0.39	0.264	3353-5013	76.2	250	3353-5012

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



3353 PolarSeal™

AIR CONDITIONING HOSE



Relative Cost ●●●○○

Applications Liquid and gaseous R134a and R12 refrigerants in air conditioning and refrigeration units.

Temperature -30 °C to +125 °C (-22 °F to +257 °F).

Standards SAE J3062 Type C Class II, SAE J51 Type A2 dimensions Type D performance.

Construction CR, nylon barrier, spiral polyester, EPDM.

Packaging Bulk lengths are on a reel, 25 foot lengths are boxed. Custom lengths available with minimum order quantity.

Couplings PolarSeal™ couplings (see Gates Hydraulic Catalogs). G46 series.

Size			ID		OD Nominal		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Nominal		Gates Item Number	Bulk Length		Gates Item Number
Dash	mm	inch	mm	inch	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	25ft. length	mm	ft	Bulk Length
-6	8	5/16	7.8/8.6	.31/.34	18.3/19.8	.72/.78	3.4	500	13.8	2000	51	2	0.30	0.20	3353-0901	103.6	340	3353-0903
-8	10	13/32	10.2/11.1	.40/.44	22.2/23.8	.88/.94	3.4	500	13.8	2000	76	3	0.42	0.28	3353-0906	71.6	235	3353-0908
-10	12	1/2	12.4/13.6	.49/.54	24.6/26.2	.97/1.03	3.4	500	13.8	2000	102	4	0.48	0.32	3353-0911	64.0	210	3353-0913
-12	16	5/8	15.6/16.8	.62/.66	27.8/29.4	1.09/1.16	2.4	350	12.0	1750	127	5	0.57	0.38	3353-0916	53.3	175	3353-0918

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant ❄️
- Brake
- Accessories
- Belts



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WE STAND FOR QUALITY, RELIABILITY AND SAFETY

GATES® AIR + VACUUM BRAKE HOSE
THE MOST IMPORTANT SAFETY SYSTEM ON A VEHICLE IS THE BRAKES, AND AIR BRAKE SYSTEMS CAN BE AMAZINGLY COMPLEX. FROM THE AIR COMPRESSOR INTAKE AND DISCHARGE ON THE ENGINE TO THE DROP

LINES ON THE AXLE, YOU CAN TRUST GATES. WE SERVE CUSTOMERS ACROSS INDUSTRIES, BRINGING RELENTLESS INNOVATION, AND UN-COMPROMISING QUALITY TO EVERY PRODUCT WE MAKE.





BRAKE

Air Brake, Air Compressor

3245E..... Standard.....	120
3245T..... Low temperature	120
3658C (C5C)..... Higher pressure, wire braid reinforced, use field-attachable couplings	121
3658E (C5E)..... Higher pressure and temperature, wire braid, use field-attachable couplings.....	122
4657DT (MegaTech™ 1000)..... High pressure and temperature	122
7752 (C14)..... Very high temperature PTFE tube, stainless steel braid cover.....	123
4657AB (TR500)..... Higher temperature, wire braid, crimped couplings, DOT registration required	121

Vacuum Brake

3276..... Standard automotive vacuum brake.....	123
4327 (NABT)..... Nylon air brake tubing, color coded	124 - 125

Tube Assemblies	70, 110
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Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts

3245E

STANDARD AIR BRAKE HOSE



Relative Cost ●○○○○

Applications Air brake hose.

Temperature -40°C to +100°C (-40°F to +212°F).

Standards SAE J1402 Type A. Complies with DOT FMVSS 106.

Construction EPDM tube, 2-spiral polyester reinforcement, EPDM cover.

Packaging Bulk lengths 76.2 meters (250 feet) shipped on a reel or 15.24 meters (50 feet) in a box. Custom lengths available with minimum order quantity.



Couplings All styles of air brake coupling including conventional brass and plastic couplings.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number	
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	50 ft. Length	250 ft. Length
9.6 ±0.5	3/8 ±0.02	19.1 ±0.8	0.75 ±0.03	1.55	225	6.21	900	81	24	90	3.5	0.30	0.2	3245-0601	3245-0602
12.7 ±0.8	1/2 ±0.03	22.4 ±0.9	.88 ±0.035	1.55	225	6.21	900	81	24	100	4	0.37	0.25	3245-0603	3245-0604

3245T

LOW TEMPERATURE AIR BRAKE AND VACUUM BRAKE HOSE



Relative Cost ●●●○○

Applications Heavy duty air brake or vacuum brake hose for cold conditions.

Temperature -54°C to +100°C (-65°F to +212°F).

Standards SAE J1403 Type H. Complies with DOT FMVSS 106.

Construction Neoprene tube, braided rayon reinforcement, neoprene cover.

Packaging Bulk lengths are 50 feet shipped in a box. Custom lengths available with minimum order quantity.



Couplings All styles of air brake coupling including conventional brass and plastic couplings.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	Bulk Length
9.53 ±0.76	3/8 ±0.03	19.1 ±0.76	0.75 ±0.03	0.59	85	6.21	900	101	30	76	3	0.31	0.21	3245-4468
12.70 ±0.76	1/2 ±0.03	22.2 ±0.76	0.88 ±0.03	0.59	85	6.21	900	101	30	127	5	0.42	0.28	3245-4467
15.88 ±0.76	5/8 ±0.03	27.6 ±0.76	1.09 ±0.03	0.59	85	6.21	900	101	30	152	6	0.64	0.43	3245-4476

3658C (C5C)

HIGHER PRESSURE BRAKE HOSE



Relative Cost ●●●○○

Applications Higher pressure air brake hose with internal wire braid. Also suitable for lube oil and petroleum-based hydraulic oil, and transmission oil. Not for fuel.

Temperature -40 °C to +100 °C (-40 °F to +212 °F).

Standards SAE J1402 Type AII and DOT FMVSS 106, and SAE 100R5.

Construction Nitrile or neoprene tube, synthetic fiber and steel braid reinforcement layers, neoprene cover.

Packaging Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.

Couplings C5 Field Attachable Couplings. See Gates Hydraulic Catalog.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	3/16	-4	13.2	0.52	20.68	3000	82.74	12000	85	25	75	3	0.24	0.16	134	440	3658-1775
6.4	1/4	-5	14.7	0.58	20.68	3000	82.74	12000	85	25	86	3.4	0.28	0.19	117	385	3658-1776
7.9	5/16	-6	17.0	0.67	15.51	2250	62.05	9000	85	25	100	4	0.36	0.24	117	385	3658-1777
10.3	13/32	-8	19.6	0.77	13.79	2000	55.16	8000	85	25	125	4.6	0.42	0.28	101	330	3658-1778
12.7	1/2	-10	23.4	0.92	12.07	1750	48.26	7000	85	25	140	5.5	0.57	0.38	84	275	3658-1779
15.9	5/8	-12	27.4	1.08	10.34	1500	41.37	6000	85	25	150	6.5	0.70	0.47	67	220	3658-1780

4657AB (TR500)

HIGH TEMPERATURE OIL/AIR HOSE



Relative Cost ●●●○○

Applications Air brake, pressurized hot oil return lines and rotary oil/air compressor lines. Not for biodiesel, gasoline, or diesel fuel.

Temperature -40 °C to +121 °C (-40 °F to +250 °F).

Standards DOT FMVSS 106-74, SAE J1402 for air brake (-4, -6, -8, -10).

Construction Nitrile tube, steel wire braid reinforcement, rubber coated textile braid cover.

Packaging Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with minimum order quantity.

Couplings GLP and MegaCrimp® Couplings.

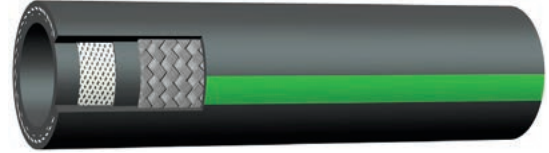
Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	12.8	0.51	3.45	500	13.79	2000	25	1	0.18	0.12	76	250	4657-2228
9.5	3/8	-6	17.3	0.68	3.45	500	13.79	2000	46	1.8	0.28	0.19	107	350	4657-2520
12.7	1/2	-8	20.3	0.80	3.45	500	13.79	2000	58	2.3	0.34	0.23	107	350	4657-2521
15.9	5/8	-10	23.6	0.93	3.45	500	13.79	2000	71	2.8	0.43	0.29	91	300	4657-2229
22.2	3/4	-12	26.4	1.04	3.45	500	13.79	2000	89	3.5	0.51	0.34	61	200	4657-2230
25.4	1	-16	33.0	1.30	3.45	500	13.79	2000	114	4.5	0.67	0.45	46	150	4657-2231

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

3658E (C5E)

HIGHER PRESSURE AND HIGHER TEMPERATURE BRAKE HOSE



- Relative Cost** ●●●○○
 - Applications** Higher pressure and temperature air brake hose with internal wire braid. Also suitable for lube oil and fuel filter lines.
 - Temperature** -40°C to +121°C (-40°F to +250°F).
 - Standards** SAE J1402 Type A1 and DOT FMVSS 106.
 - Construction** Nitrile tube, synthetic fiber and steel braid reinforcement layers, neoprene cover with green stripe.
 - Packaging** Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.
 - Couplings** C5E Field Attachable Couplings. See Gates Hydraulic Catalog.
- Note:** Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	3/16	-4	12.4	0.49	10.34	1500	41.37	6000	85	25	75	0.8	0.18	0.12	134	440	3658-0210
6.4	1/4	-5	14.0	0.55	10.34	1500	41.37	6000	85	25	25	1	0.21	0.14	117	385	3658-0211
7.9	5/16	-6	15.5	0.61	10.34	1500	41.37	6000	85	25	100	1.3	0.25	0.17	117	385	3658-0212
10.3	13/32	-8	18.5	0.73	8.62	1250	34.47	5000	85	25	125	1.8	0.33	0.22	101	330	3658-0213
12.7	1/2	-10	21.1	0.83	8.62	1250	34.47	5000	85	25	140	2.3	0.37	0.25	84	275	3658-0214
15.9	5/8	-12	24.1	0.95	5.17	750	20.68	3000	85	25	150	3	0.46	0.31	67	220	3658-0215

4657DT (MegaTech™ 1000)

HIGH TEMPERATURE OIL/AIR HOSE



- Relative Cost** ●●●○○
 - Applications** Air brake, pressurized hot oil return lines and rotary oil/air compressor lines. Not for biodiesel blends.
 - Temperature** -40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid mfr. to 100°C (212°F)
 - Standards** DOT FMVSS 106-74, SAE J1402 for air brake (-4, -6, -8, -10)
 - Construction** CPE tube, steel wire braid reinforcement, rubber coated textile braid cover.
 - Packaging** Bulk lengths shipped on a reel. May not be continuous length. Custom lengths available with min. order quantity.
 - Couplings** MegaCrimp® Couplings.
- Note:** Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	13.2	0.52	6.89	1000	27.58	4000	51	2	0.16	0.11	107	350	4657-2332
9.5	3/8	-6	16.8	0.66	6.89	1000	27.58	4000	64	2.5	0.30	0.20	107	350	4657-2297
12.7	1/2	-8	20.3	0.80	6.89	1000	27.58	4000	89	3.5	0.36	0.24	107	350	4657-2334
15.9	5/8	-10	23.6	0.93	6.89	1000	27.58	4000	102	4	0.49	0.33	91	300	4657-2335
22.2	3/4	-12	29.2	1.15	6.89	1000	27.58	4000	119	4.7	0.60	0.40	61	200	4657-2336
25.4	1	-16	34.8	1.37	6.89	1000	27.58	4000	152	6	0.77	0.52	46	150	4657-2337
31.8	1 1/4	-20	41.7	1.64	6.89	1000	27.58	4000	216	8.5	1.24	0.83	30	100	4657-2338

7752 (C14)

HIGH TEMPERATURE AIR COMPRESSOR HOSE WITH STAINLESS STEEL COVER



- Relative Cost** ●●●●●○
- Applications** High temperature air compressor discharge hose with external stainless steel wire braid. Also suitable for hot lube oil and greasy environments such as turbo oil supply and drain.
- Temperature** -54 °C to +232 °C (-65 °F to +450 °F).
- Standards** None.
- Construction** Non-conductive* or conductive PTFE tube, 300 series stainless steel reinforcement/cover.
- Packaging** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
- Couplings** C14 Couplings. See Gates Hydraulic Catalog.

ID			OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number (C14)		Gates Item Number (C14CT)
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	meters	feet	Non-Conductive*	Conductive	
4.8	3/16	-4	7.9	0.31	10.34	1500	41.37	6000	95	28	100	2	0.12	0.08	122	400	7752-0400		
6.4	1/4	-5	9.7	0.38	10.34	1500	41.37	6000	95	28	125	3	0.15	0.1	107	350	7752-0500		
7.9	5/16	-6	11.4	0.45	10.34	1500	41.37	6000	95	28	100	4	0.16	0.11	91	300	7752-0600	7752-3600	
10.3	13/32	-8	14.0	0.55	6.89	1000	27.58	4000	95	28	125	5.3	0.18	0.12	76	250	7752-0800	7752-3800	
12.7	1/2	-10	16.5	0.65	5.52	800	22.06	3200	95	28	100	6.5	0.22	0.15	61	200	7752-1000		
15.9	5/8	-12	20.1	0.79	5.52	800	22.06	3200	95	28	125	7.8	0.25	0.17	46	150	7752-1200		
22.2	7/8	-16	26.2	1.03	5.52	800	22.06	3200	95	28	100	9	0.40	0.27	30	100	7752-1600		

* Do not use non-conductive hoses with gasoline or steam or any fluid that can cause a buildup of static electricity. Please see the Electrostatic Discharge page in the Gates Hydraulic Catalog under the Hose/Coupling Selection section.

3276

LIGHT DUTY VACUUM BRAKE HOSE



- Relative Cost** ●●●○○○
- Applications** Vacuum brake for passenger cars and light trucks.
- Temperature** -40 °C to +121 °C (-40 °F to +250 °F).
- Standards** SAE J1403 Type L and FMVSS-106VL.
- Construction** EPDM tube, synthetic fiber reinforcement, EPDM cover.
- Packaging** Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.
- Couplings** Hose bead fitting with hose clamps. (pages 127 - 133)


ID		OD		Work. Press. Max.		Burst Minimum		Vacuum Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
8.73 ±0.76	11/32 ±0.03	17.53 ±0.76	0.69 ±0.03	0.59	85	2.41	350	88	26	76	3	0.21	0.14	15	50	3276-4481
11.91	15/32	20.57	0.81	0.59	85	2.41	350	88	26	127	5	0.25	0.17	15	50	3276-4482


- Coolant
- Fuel
- OIL
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

4327 (NABT)


STANDARD NYLON AIR BRAKE TUBING


Relative Cost ●○○○○

Applications  Air brake for truck, tractor trailer, and other moving equipment. Also suitable for DEF vent line, air accessories and instrumentation, alcohol, and solvents. Not for use where heat or battery acid is present.

Temperature  -40°C to +93°C (-40°F to +200°F).

Standards  DOT FMVSS 106 and SAE J844 (except burst).

Construction  Heat and light stabilized seamless extruded nylon 12 tube, nylon 11 cover. Type A is non-reinforced and not recognized by DOT for air brake systems (use for service lines only). Type B is reinforced with one open ply of fibrous nylon.

Packaging  Lengths of 76m (250 feet) or longer shipped on a reel. Shorter lengths available in most sizes, wrapped in poly film. Custom lengths available with minimum order quantity.

Couplings  Gates G31 SureLok™ or Gates G32 Compression Couplings (see Gates Automotive Hydraulic and Fleet Hose Catalog)

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.









OD	Wall Nominal		Type	Color	Work. Press. Max.		Burst Minimum		Bend Rad. Min.		Weight Ref.		Bulk Length		Gates Item Number	
	mm	in.			MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet		Bulk Length
3.2	1/8	0.53	0.021	A	Black	1.03	150	6.9	1001	9	0.37	0.01	0.005	305	1000	4327-0117
4.0	5/32	0.56	0.022	A	Black	1.03	150	8.3	1204	13	0.5	0.01	0.01	30	100	4327-0050
6.4	1/4	0.99	0.039	A	Black	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0101
7.9	5/16	0.97	0.038	A	Black	1.03	150	6.9	1001	32	1.25	0.03	0.02	152	500	4327-0120
9.5	3/8	1.60	0.063	B	Black	1.03	150	9.7	1407	38	1.5	0.04	0.03	305	1000	4327-0201
9.5	3/8	1.60	0.063	B	Black	1.03	150	9.7	1407	38	1.5	0.04	0.03	152	500	4327-0126
12.7	1/2	1.63	0.064	B	Black	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0112
15.9	5/8	2.36	0.093	B	Black	1.03	150	6.2	899	64	2.5	0.10	0.07	76	250	4327-0115
19.1	3/4	2.31	0.091	B	Black	1.03	150	5.5	798	76	3	0.13	0.09	76	250	4327-0116
6.4	1/4	0.99	0.039	A	Green	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0104
9.5	3/8	1.60	0.063	B	Green	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1003
9.5	3/8	1.63	0.064	B	Green	1.03	150	9.7	1407	32	1.25	0.04	0.03	152	500	4327-0129
12.7	1/2	2.36	0.093	B	Green	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0132
15.9	5/8	2.31	0.091	B	Green	1.03	150	6.2	899	64	2.5	0.10	0.07	76	250	4327-1006
19.1	3/4	2.31	0.091	B	Green	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0062
6.4	1/4	0.99	0.039	A	Red	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0105
9.5	3/8	1.60	0.063	B	Red	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1005
9.5	3/8	1.60	0.063	B	Red	1.03	150	9.7	1407	32	1.25	0.04	0.03	152	500	4327-0127
12.7	1/2	1.63	0.064	B	Red	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0131
15.9	5/8	2.36	0.093	B	Red	1.03	150	6.2	899	64	2.5	0.10	0.07	76	250	4327-1007
19.1	3/4	2.31	0.091	B	Red	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0067
6.4	1/4	0.99	0.039	A	Blue	1.03	150	8.3	1204	25	1	0.01	0.01	1524	5000	4327-1001
6.4	1/4	0.99	0.039	B	Blue	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0102
9.5	3/8	1.60	0.063	B	Blue	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1002
9.5	3/8	1.60	0.063	B	Blue	1.03	150	9.7	1407	32	1.25	0.04	0.03	152	500	4327-0128
12.7	1/2	1.63	0.064	B	Blue	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0133
15.9	5/8	2.36	0.093	B	Blue	1.03	150	6.2	899	64	2.5	0.10	0.07	15	50	4327-0071
19.1	3/4	2.31	0.091	B	Blue	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0072
6.4	1/4	0.99	0.039	A	Yellow	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0107



4327 (NABT)

STANDARD NYLON AIR BRAKE TUBING (CON'T)

 OD		 Wall Nominal		Type	Color	 Work. Press. Max.		 Burst Minimum		 Bend Rad. Min.		 Weight Ref.		Bulk Length		Gates Item Number
mm	in.	mm	inch			MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
9.5	3/8	1.60	0.063	B	Yellow	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-0111
12.7	1/2	1.63	0.064	B	Yellow	1.03	150	6.6	957	51	2	0.06	0.04	30	100	4327-0075
15.9	5/8	2.36	0.093	B	Yellow	1.03	150	6.2	899	64	2.5	0.12	0.08	15	50	4327-0076
19.1	3/4	2.31	0.091	B	Yellow	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0077
9.5	3/8	1.60	0.063	B	Orange	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1004
12.7	1/2	1.63	0.064	B	Orange	1.03	150	6.6	957	51	2	0.06	0.04	30	100	4327-0080
15.9	5/8	2.36	0.093	B	Orange	1.03	150	6.2	899	64	2.5	0.12	0.08	15	50	4327-0081
19.1	3/4	2.31	0.091	B	Orange	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0082
6.4	1/4	0.99	0.039	A	Purple	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0125
6.4	1/4	0.99	0.039	A	Brown	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0103
9.5	3/8	1.60	0.063	B	Brown	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-0109
6.4	1/4	0.99	0.039	A	Silver	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0106
12.7	1/2	1.63	0.064	B	Silver	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0114
9.5	3/8	1.60	0.063	B	White	1.03	150	9.7	1407	38	1.5	0.04	0.03	305	1000	4327-0110

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



DRIVEN BY POSSIBILITY™

WITH GATES YOU GET MORE THAN A HOSE

GATES® HOSE CLAMPS MEET OR EXCEED THE TOUGHEST INDUSTRY REQUIREMENTS, AND ARE ENGINEERED FOR THE OPTIMAL FIT TO YOUR EXISTING GATES HOSES AND ASSEMBLIES. OUR FLUID POWER PRODUCTS OFFER MAXIMUM FLEXIBILITY

AND LEAK PREVENTION ON YOUR HEAVY-DUTY APPLICATIONS. NO MATTER WHAT KIND OF JOB YOU HAVE, GATES HAS THE HOSE SOLUTION THAT WORKS AS HARD AS YOU AND YOUR TEAM.



7400/7408

HOSE CLAMP - WORM DRIVE



Relative Cost ●●○○○
Applications Use on coolant, air intake, or low-pressure fuel and oil hoses. For silicone or soft hoses, use 7400 SHC Clamps. For marine or corrosive environments, use Marine Clamps. For self-adjusting clamps, see 7408GSCT or 7408GSMD or 7422 T-Bolt clamps.

Standards SAE J1508.

Construction Super Hex - 12.7mm (1/2") wide stainless steel band and one-piece screw housing. Cadmium plated hex head screw with slot.

Green Stripe™ - 14.3mm (9/16") wide stainless steel band and 400 series stainless steel hex head screw with slot.

Green Stripe™ Marine - 14.3mm (9/16") wide marine grade stainless steel band and 300 series stainless steel hex head screw with slot.

Packaging Ten per box.

Couplings Clamps hose to beaded or barbed fittings.

Fits Hose ID		SAE J1508 Size	Clamping Range		7400 Super Hex Item Number	7408 Green Stripe™ Item Number	7408 Green Stripe™ Marine Item Number
mm	inch		mm	inch			
4.0 to 12.7	5/32 to 1/2	4	6.4 to 15.9	1/4 to 5/8	32001*	32201	
6.4 to 9.5	1/4 to 3/8	6	9.5 to 22.2	3/8 to 7/8	32006		
5.6 to 17.5	7/32 to 11/16	7	7.9 to 22.2	5/16 to 7/8	32007*	32207	
7.9 to 12.7	5/16 to 1/2	8	11.1 to 25.4	7/16 to 1	32008	32208	32508
9.5 to 15.9	3/8 to 5/8	10	12.7 to 28.6	1/2 to 1 1/8	32010	32210	32510
15.9 to 19.1	5/8 to 3/4	12	12.7 to 31.8	1/2 to 1 1/4	32012	32212	32512
19.1 to 25.4	3/4 to 1	16	19.1 to 38.1	3/4 to 1 1/2	32016	32216	32516
25.4 to 31.8	1 to 1 1/4	20	19.1 to 44.5	3/4 to 1 3/4	32020	32220	32520
31.8 to 38.1	1 1/4 to 1 1/2	24	25.4 to 50.8	1 to 2	32024	32224	32524
31.8 to 44.5	1 1/4 to 1 3/4	28	33.3 to 57.1	1 5/16 to 2 1/4	32028	32228	32528
38.1 to 50.8	1 1/2 to 2	32	39.7 to 63.5	1 9/16 to 2 1/2	32032	32232	32532
44.5 to 57.1	1 3/4 to 2 1/4	36	22.2 to 69.9	7/8 to 2 3/4	32036	32236	32536
50.8 to 63.5	2 to 2 1/2	40	28.6 to 76.2	1 1/8 to 3	32040		
57.1 to 69.9	2 1/4 to 2 3/4	44	33.3 to 82.6	1 5/16 to 3 1/4	32044		
63.5 to 76.2	2 1/2 to 3	48	41.3 to 88.9	1 5/8 to 3 1/2	32048	32248	32548
76.2 to 82.6	3 to 3 1/4	52	47.6 to 95.3	1 7/8 to 3 3/4	32052	32252	32552
50.8 to 88.9	2 to 3 1/2	56	54.0 to 101.6	2 1/8 to 4	32056	32256	32556
57.2 to 95.3	2 1/4 to 3 3/4	60	58.7 to 108.0	2 5/16 to 4 1/4		32260	32560
57.1 to 101.6	2 1/4 to 4	64	66.7 to 114.3	2 5/8 to 4 1/2	32064	32264	32564
76.2 to 114.3	3 to 4 1/2	72	79.4 to 127	3 1/8 to 5	32072	32272	32572
101.6 to 165	4 to 6 1/2	104	101.6 to 178	4 to 7	32104	32304	32604

* 7.9mm (5/16") clamp width.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories







Belts



7400

HOSE CLAMP - WORM DRIVE



-  **Relative Cost** ●●●○○
-  **Applications** Use on silicone or other soft rubber coolant, air intake, or low-pressure fuel and oil hoses.
-  **Standards** SAE J1508.
-  **Construction** Silicone Clamp - 14.3mm (9/16") wide 300 series stainless steel band, housing, and hex head screw with slot.
-  **Packaging** Ten per box.
-  **Couplings** Clamps hose to beaded, or barbed fittings.

Fits Hose ID		SAE J1508 Size	Clamping Range		Silicone Clamp Item Number
mm	inch		mm	inch	
7.9 to 12.7	5/16 to 1/2	8	11.1 to 25.4	7/16 to 1	32308
9.5 to 15.9	3/8 to 5/8	10	19.1 to 28.6	3/4 to 1 1/8	32310
15.9 to 19.1	5/8 to 3/4	12	22.2 to 31.8	7/8 to 1 1/4	32312
19.1 to 25.4	3/4 to 1	16	25.4 to 38.1	1 to 1 1/2	32316
25.4 to 31.8	1 to 1 1/4	20	28.6 to 44.5	1 1/8 to 1 3/4	32320
31.8 to 38.1	1 1/4 to 1 1/2	24	31.8 to 50.8	1 1/4 to 2	32324
31.8 to 44.5	1 1/4 to 1 3/4	28	33.3 to 57.1	1 5/16 to 2 1/4	32328
38.1 to 50.8	1 1/2 to 2	32	39.7 to 63.5	1 9/16 to 2 1/2	32332
44.5 to 57.1	1 3/4 to 2 1/4	36	46.0 to 69.9	1 13/16 to 2 3/4	32336
50.8 to 63.5	2 to 2 1/2	40	52.4 to 76.2	2 1/16 to 3	32340
57.1 to 69.9	2 1/4 to 2 3/4	44	58.7 to 82.6	2 5/16 to 3 1/4	32344
63.5 to 76.2	2 1/2 to 3	48	65.1 to 88.9	2 9/16 to 3 1/2	32348
76.2 to 82.6	3 to 3 1/4	52	71.4 to 95.3	2 13/16 to 3 3/4	32352
82.6 to 88.9	3 1/4 to 3 1/2	56	77.8 to 101.6	3 1/16 to 4	32356
95.3 to 101.6	3 3/4 to 4	64	90.5 to 114.3	3 9/16 to 4 1/2	32364
101.6 to 114.3	4 to 4 1/2	72	103.2 to 127	4 1/16 to 5	32372

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant







Brake

Accessories

Belts

7422

HOSE CLAMP - T-BOLT, SPRING LOADED T-BOLT

-  **Relative Cost** ●●●●○
-  **Applications** Self-adjusting to eliminate leaks in cold conditions. Use on coolant, air intake, or CAC hoses on heavy duty applications.
-  **Standards** SAE J1508.
-  **Construction** 19.0mm (3/4 inch) wide stainless steel band and 7/16" hex plated locknut with nylon insert.
-  **Packaging** Ten per box.
-  **Couplings** Clamps hose to beaded, barbed, or straight fittings using 8.5 Nm (75 in. lbs.) torque.



SAE J1508 Size	Clamping Range		Green Stripe™ T-Bolt Item Number	Green Stripe™ Spring Loaded T-Bolt Item Number
	mm	inch		
-	35.1 to 38.6	1 3/8 to 1 9/16	32749	
-	38.1 to 41.7	1 1/2 to 1 5/8	32750	
-	41.4 to 46.0	1 5/8 to 1 7/8	32751	
28	44.5 to 50.8	1 3/4 to 2	32752	
32	47.8 to 55.6	1 7/8 to 2 3/16	32753	
36	50.8 to 58.7	2 to 2 5/16	32754	
40	54.1 to 62.0	2 1/8 to 2 7/16	32755	
44	57.2 to 65.0	2 1/4 to 2 9/16	32756	
48	60.5 to 68.3	2 3/8 to 2 11/16	32757	
52	63.5 to 71.4	2 1/2 to 2 13/16	32758	
56	66.8 to 74.7	2 5/8 to 2 15/16	32759	
60	69.9 to 77.7	2 3/4 to 3 1/16	32760	
64	73.2 to 81.0	2 7/8 to 3 3/16	32761	
68	76.2 to 84.1	3 to 3 5/16	32762	
70	77.8 to 85.7	3 1/16 to 3 3/8		32861
72	79.5 to 87.4	3 1/8 to 3 7/16	32763	
76	82.6 to 90.4	3 1/4 to 3 9/16	32764	
80	85.9 to 93.7	3 3/8 to 3 11/16	32765	
84	88.9 to 96.8	3 1/2 to 3 13/16	32766	
86	90.5 to 98.4	3 9/16 to 3 7/8		32862
88	92.2 to 100.1	3 5/8 to 3 15/16	32767	
92	95.3 to 103.1	3 3/4 to 4 1/16	32768	
100	101.6 to 109.5	4 to 4 5/16	32769	
102	103.2 to 111.1	4 1/16 to 4 3/8		32863
108	108.0 to 115.8	4 1/4 to 4 9/16	32770	
116	114.3 to 122.2	4 1/2 to 4 13/16	32771	
118	115.9 to 123.8	4 9/16 to 4 7/8		32864
124	120.7 to 128.5	4 3/4 to 5 1/16	32772	
132	127.0 to 134.9	5 to 5 5/16	32773	
140	133.4 to 141.2	5 1/4 to 5 9/16	32774	
148	139.7 to 147.6	5 1/2 to 5 13/16	32775	
156	146.1 to 153.9	5 3/4 to 6 1/16	32776	
164	152.4 to 160.3	6 to 6 5/16	32777	
172	158.8 to 166.6	6 1/4 to 6 9/16	32778	
180	165.1 to 173.0	6 1/2 to 6 13/16	32779	
188	171.5 to 179.3	6 3/4 to 7 1/16	32780	
196	177.8 to 185.7	7 to 7 5/16	32781	
204	184.2 to 192.0	7 1/4 to 7 9/16	32782	
212	190.5 to 198.4	7 1/2 to 7 13/16	32783	
220	196.9 to 204.7	7 3/4 to 8 1/16	32784	
228	203.2 to 211.1	8 to 8 5/16	32785	
236	209.6 to 217.4	8 1/4 to 8 9/16	32786	
244	215.9 to 223.8	8 1/2 to 8 13/16	32787	

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

7408GSCT

HOSE CLAMP - BELLVILLE SPRING CONSTANT TENSION



- Relative Cost** ●●●●●
- Applications** Self-adjusting to eliminate leaks in cold conditions. Use on coolant, air intake, turbo, or low-pressure oil hoses. Torque 50 to 85 inch pounds (5.6-9.6 Nm)
- Standards** SAE J1508.
- Construction** Green Stripe™ - 301 stainless steel with 14.3mm (9/16") wide band and 410 stainless steel 5/16" hex head screw.
- Packaging** Ten per box.
- Couplings** Clamps hose to beaded or barbed fittings.

SAE J1508 Size	Clamping Range		Green Stripe™ Item Number
	mm	inch	
10	14 to 27	9/16 to 1-1/16	32710
12	16 to 32	5/8 to 1-1/4	32712
16	21 to 38	13/16 to 1-1/2	32716
20	20 to 44	13/16 to 1-3/4	32720
24	27 to 51	1-1/16 to 2	32724
28	33 to 57	1-5/16 to 2-1/4	32728
32	40 to 63	1-9/16 to 2-1/2	32732
36	46 to 70	1-13/16 to 2-3/4	32736
40	52 to 76	2-1/16 to 3	32740
44	59 to 82	2-5/16 to 3-1/4	32744
48	65 to 89	2-9/16 to 3-1/2	32748

7408GSHD

HOSE CLAMP - BELLVILLE SPRING CONSTANT TENSION



- Relative Cost** ●●●●●
- Applications** Self-adjusting to eliminate leaks in cold conditions. Use on coolant, air intake, turbo, or low pressure oil hoses. Torque to 75 to 125 inch pounds (8.5-14.1 Nm)
- Standards** SAE J1508.
- Construction** All 304 stainless steel with 14.3mm (9/16") wide band and 410 stainless steel 5/16" hex head screw.
- Packaging** Ten per box.
- Couplings** Clamps hose to beaded or barbed fittings.

SAE J1508 Size	Clamping Range		Green Stripe™ Heavy Duty Item Number
	mm	inch	
175	25 to 45	1 to 1-3/4	32617
212	32 to 54	1-1/4 to 2-1/8	32620
262	45 to 67	1-3/4 to 2-5/8	32625
312	57 to 79	2-1/4 to 3-1/8	32630
362	70 to 92	2-3/4 to 3-5/8	32635
412	83 to 105	3-1/4 to 4-1/8	32640
462	95 to 117	3-3/4 to 4-5/8	32645
512	108 to 130	4-1/4 to 5-1/8	32650
562	121 to 143	4-3/4 to 5-5/8	32655
612	133 to 155	5-1/4 to 6-1/8	32660
662	146 to 168	5-3/4 to 6-5/8	32665
712	159 to 181	6-1/4 to 7-1/8	32670
762	172 to 193	6-3/4 to 7-5/8	32675
812	184 to 206	7-1/4 to 8-1/8	32680
862	197 to 219	7-3/4 to 8-5/8	32685
912	210 to 232	8-1/4 to 9-1/8	32690

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



7405 (POWERGRIP™ SB)

POLYMERIC HEAT-SHRINK CLAMP



Relative Cost ●●●●●



Applications Coolant hoses that require maintenance-free, low-profile clamps. Compensates for temperature extremes or imperfections in fittings or hose, and adjusts automatically. Also suitable for abrasion protection, wire bundling, or sleeve end encapsulation. Use a heat gun to shrink the clamp in place. To remove, use a soldering iron to cut through.



Temperature -40 °C to +150 °C (-40 °F to +302 °F).



Construction Proprietary heat-shrink polymer.



Packaging 10 per box.



Couplings Clamps hose onto beaded, barbed, or straight fittings.







Fits Hose I.D.		Fits Hose O.D.		Length		Gates Item Number	Assembly Component Number	Part Ref.	Interchange Number
mm	inch	mm	inch	mm	inch				
6.4	1/4	12.7 to 17.5	1/2 to 11/16	19.1	0.75	7405-4001	0056-0043	SB15	32915
9.5	3/8	17.5 to 20.6	11/16 to 13/16	19.1	0.75	7405-4002	0056-0063	SB19	32919
12.7	1/2	20.6 to 23.8	13/16 to 15/16	19.1	0.75	7405-4003	0056-0083	SB22	32922
15.9	5/8	23.8 to 27.0	15/16 to 1 1/16	25.4	1	7405-4004	0056-0105	SB25	32925
19.1	3/4	27.0 to 30.2	1 1/16 to 1 3/16	25.4	1	7405-4005	0056-0125	SB29	32929
22.2	7/8	30.2 to 33.3	1 3/16 to 1 5/16	25.4	1	7405-4017	0056-0145	SB32	32932
25.4	1	33.3 to 38.1	1 5/16 to 1 1/2	25.4	1	7405-4006	0056-0165	SB34	32934
31.8	1 1/4	38.1 to 44.5	1 1/2 to 1 3/4	31.8	1.25	7405-4007	0056-0205	SB41	32941
38.1	1 1/2	44.5 to 50.8	1 3/4 to 2	31.8	1.25	7405-4008	0056-0245	SB48	32948
44.5	1 3/4	50.8 to 57.2	2 to 2 1/4	31.8	1.25	7405-4009	0056-0285	SB54	32954
50.8	2	57.2 to 63.5	2 1/4 to 2 1/2	31.8	1.25	7405-4010	0056-0325	SB60	32960
57.2	2 1/4	63.5 to 69.9	2 1/2 to 2 3/4	38.1	1.5	7405-4011	0056-0365	SB67	32967
63.5	2 1/2	69.9 to 76.2	2 3/4 to 3	38.1	1.5	7405-4012	0056-0405	SB73	32973
69.9	2 3/4	76.2 to 82.6	3 to 3 1/4	38.1	1.5	7405-4013	0056-0445	SB79	32979
76.2	3	82.6 to 88.9	3 1/4 to 3 1/2	38.1	1.5	7405-4014	0056-0485	SB86	32986
79.4	3 1/8	88.9 to 92.1	3 1/2 to 3 5/8	38.1	1.5	7405-4015	0056-0505	SB90	32990

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

7407 (POWERGRIP™ RT)

POLYMERIC ROOM-TEMPERATURE SHRINK CLAMP



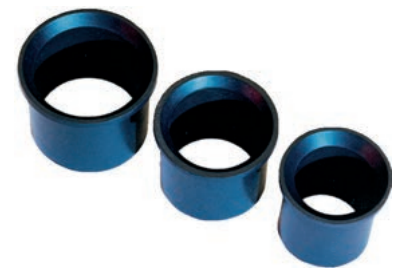
-  **Relative Cost** ●●●●●
-  **Applications** Coolant hoses that require maintenance-free, low-profile clamps. Compensates for temperature extremes or imperfections in fittings or hose, and adjusts automatically. Also suitable for abrasion protection, wire bundling, or sleeve end encapsulation. Room-temperature shrink capability preferred on assembly lines to eliminate the need for heat guns.
-  **Temperature** -40 °C to +150 °C (-40 °F to +302 °F).
-  **Construction** Proprietary heat-shrink polymer.
-  **Packaging** Boxed. Minimum order quantity applies to all sizes.
-  **Couplings** Clamps hose onto beaded, barbed, or straight fittings.








Fits Hose I.D.		Fits Hose O.D.		Length		Quantity Per Box	Part Ref.	Gates Item Number
mm	inch	mm	inch	mm	inch			
9.5	3/8	17.5 to 20.6	.66 to .78	14.1	0.56	300	RT038	7407-3202
15.9	5/8	23.8 to 27.0	.91 to 1.03	17.8	0.70	250	RT062	7407-3204
19.1	3/4	27.0 to 30.2	1.03 to 1.22	17.8	0.70	200	RT075	7407-3205
25.4	1	33.3 to 38.1	1.29 to 1.39	17.8	0.70	125	RT100	7407-3207
31.8	1 1/4	38.1 to 44.5	1.56 to 1.72	24.1	0.95	450	RT125	7407-3209
38.1	1 1/2	44.5 to 50.8	1.81 to 1.97	24.1	0.95	500	RT150	7407-3211*
50.8	2	57.2 to 63.5	2.28 to 2.54	24.1	0.95	225	RT200	7407-3215
57.2	2 1/4	63.5 to 69.9	2.53 to 2.79	24.1	0.95	150	RT225	7407-3217
63.5	2 1/2	69.9 to 76.2	2.78 to 3.04	24.1	0.95	125	RT250	7407-3225
69.9	2 3/4	76.2 to 82.6	3.03 to 3.32	24.1	0.95	110	RT275	7407-3221*
76.2	3	82.6 to 88.9	3.28 to 3.57	24.1	0.95	100	RT300	7407-3223*

* Not stocked. Minimum order quantity applies.

7736

HOSE ID REDUCERS









-  **Relative Cost** ●●○○○
-  **Applications** Coolant hose for light duty or temporary use. Also suitable for low-pressure air applications. Place inside a hose end to adapt it to a smaller diameter hose bead fitting.
-  **Temperature** -40 °C to +250 °C (-40 °F to +480 °F).
-  **Standards** Material per SAE J200/ASTM D2000 M2AA 707 A13 B13 F17.
-  **Construction** EPDM rubber with no parting line on sealing surfaces.
-  **Packaging** Boxed 5 per package.
-  **Couplings** Inserted in hose ID, then assembled over hose bead fitting fastened with hose clamps.

I.D.		Length		Gates Item Number	Interchange Number
mm	inch	mm	inch		
38.1 to 31.8	1 1/2 to 1 1/4	50.8	2.00	7736-9390	26390
44.5 to 38.1	1 3/4 to 1 1/2	50.8	2.00	7736-6391	26391
50.8 to 44.5	2 to 1 3/4	50.8	2.00	7736-6392	26392
57.2 to 50.8	2 1/4 to 2	50.8	2.00	7736-6393	26393
63.5 to 57.2	2 1/2 to 2 1/4	50.8	2.00	7736-9394	26394
76.2 to 63.5	3 to 2 1/2	50.8	2.00	7736-6395	26395

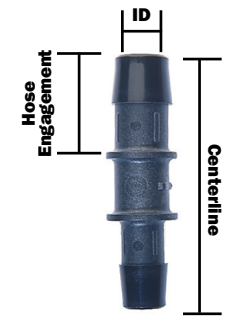
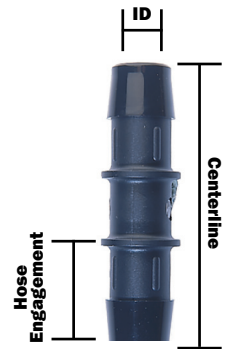
- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

7315 (CONNECTORS)

GLASS-FILLED NYLON HOSE CONNECTORS

-  **Relative Cost** ●●○○○
-  **Applications** Coolant, diesel, or gasoline (petrol). Also suitable for water, air, or oil.
-  **Temperature** -40 °C to +250 °C (-40 °F to +480 °F).
-  **Construction** Injection molded glass-filled nylon with no parting lines on the extra long sealing surface of the barbs, and with anti-rotation ridges on connectors up to 1”.
-  **Packaging** Boxed 5 per package except 1” connectors are 2 per package.
-  **Couplings** Hose clamps. (pages 127 - 133)

Fits Hose I.D.		Connector I.D.		Length on Centerline		Hose Engagement Length		Gates Item Number	Gates Product Number
mm	inch	mm	inch	mm	inch	mm	inch		
Straight Connectors									
2.4	3/32	1.8	0.07	18.7	0.74	6.8	0.27	28561*	7315-0861
3.2	1/8	2.3	0.09	25.1	0.99	9.6	0.38	28562*	7315-0862
4.0	5/32	2.4	0.09	32.1	1.27	12.7	0.50	28563	7315-0863
4.8	3/16	2.9	0.12	35.6	1.40	14.0	0.55	28564	7315-0864
6.4	1/4	3.6	0.14	49.8	1.96	20.3	0.80	28601	7315-0913
7.9	5/16	5.0	0.20	54.1	2.13	21.6	0.85	28600	7315-0103
9.5	3/8	6.4	0.25	58.4	2.30	22.9	0.90	28602	7315-1914
12.7	1/2	9.1	0.36	67.1	2.64	25.4	1.00	28603	7315-1915
15.9	5/8	11.9	0.47	75.7	2.98	27.9	1.10	28604	7315-1916
15.9	5/8	10.9	0.43	62.5	2.46	30.0	1.18	0052-5207 **	
19.1	3/4	14.7	0.58	84.3	3.32	30.5	1.20	28605	7315-1917
25.4	1	20.3	0.80	101.6	4.00	35.6	1.40	28606	7315-1918
44.5	1 3/4	44.5	1.75	76.2	3.00	36.8	1.45	0052-5545**	
Straight Reducer Connectors									
3.2 x 2.4	1/8 x 3/32	2.4 x 1.8	0.09 x 0.07	22.8	0.90	9.6 x 6.8	0.38 x 0.27	28591*	7315-0891
4 x 3.2	5/32 x 1/8	2.6 x 1.9	0.10 x 0.07	31.0	1.22	12.7 x 11.4	0.50 x 0.45	28592	7315-0892
6.4 x 4.8	1/4 x 3/16	3.4 x 3.1	0.13 x 0.12	43.4	1.71	20.3 x 14.0	0.80 x 0.55	28593	7315-0893
9.5 x 7.9	3/8 x 5/16	5.9 x 5.1	0.23 x 0.20	57.2	2.25	22.9 x 21.6	0.90 x 0.85	28594	7315-1104
12.7 x 9.5	1/2 x 3/8	8.9 x 6.5	0.35 x 0.26	64.5	2.54	25.4 x 22.9	1.00 x 0.90	28609	7315-1921
15.9 x 12.7	5/8 x 1/2	11.7 x 9.3	0.46 x 0.37	73.2	2.88	27.9 x 25.4	1.10 x 1.00	28610	7315-1922
19.1 x 15.9	3/4 x 5/8	14.4 x 12.2	0.57 x 0.48	81.8	3.22	30.5 x 27.9	1.20 x 1.10	28611	7315-1923
25.4 x 19.1	1 x 3/4	19.9 x 15.1	0.78 x 0.59	96.0	3.78	35.6 x 30.5	1.40 x 1.20	28612	7315-1924
Elbow Connectors									
2.4	3/32	1.8	0.07	10.2 x 9.4	0.40 x 0.37	7.1	0.28	28571*	7315-0871
3.2	1/8	2.4	0.09	13.5 x 12.4	0.53 x 0.49	9.4	0.37	28572*	7315-0872
4.0	5/32	2.4	0.10	16.0 x 16.0	0.63 x 0.63	12.7	0.50	28573	7315-0873
4.8	3/16	2.9	0.12	16.5 x 16.5	0.65 x 0.65	14.0	0.55	28574	7315-0874
6.4	1/4	3.6	0.14	25.4 x 24.9	1.00 x 0.98	20.3	0.80	28621	7315-0908
7.9	5/16	5.0	0.20	27.4 x 26.9	1.08 x 1.06	21.6	0.85	28620	7315-0102
9.5	3/8	6.4	0.25	29.7 x 29.2	1.17 x 1.15	22.9	0.90	28622	7315-0909
12.7	1/2	9.1	0.36	34.0 x 33.5	1.34 x 1.32	25.4	1.00	28623	7315-0910
15.9	5/8	11.9	0.47	42.2 x 41.7	1.66 x 1.64	27.9	1.10	28624	7315-0911
19.1	3/4	14.8	0.58	42.7 x 42.2	1.68 x 1.66	30.5	1.20	28625	7315-0912
25.4	1	20.3	0.80	50.8 x 50.8	2.00 x 2.00	35.6	1.40	28626	7315-0919

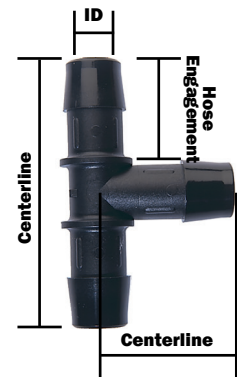


*Nylon material (not glass-filled)

7315 (CONNECTORS)

GLASS-FILLED NYLON HOSE CONNECTORS

Fits Hose I.D.		Connector I.D.		Length on Centerline		Hose Engagement Length		Gates Item Number	Gates Product Number
mm	inch	mm	inch	mm	inch	mm	inch		
Tee Connectors									
2.4	3/32	1.8	0.07	18.8 x 9.9	0.74 x 0.39	7.1	0.28	28581*	7315-0881
3.2	1/8	2.3	0.09	25.1 x 15.2	0.99 x 0.52	9.4	0.37	28582*	7315-0882
4.0	5/32	2.5	0.10	32.5 x 16.0	1.28 x 0.63	12.7	0.50	28583	7315-0883
4.8	3/16	3.0	0.12	35.6 x 17.8	1.40 x 0.70	14.0	0.55	28584	7315-0884
6.4	1/4	3.6	0.14	49.8 x 25.4	1.96 x 1.00	20.3	0.80	28631	7315-0931
7.9	5/16	5.1	0.20	54.1 x 27.7	2.13 x 1.09	21.6	0.85	28630	7315-1101
9.5	3/8	6.4	0.25	58.4 x 30.0	2.30 x 1.18	22.9	0.90	28632	7315-0932
12.7	1/2	9.3	0.37	67.1 x 34.5	2.64 x 1.36	25.4	1.00	28633	7315-0933
15.9	5/8	12.1	0.48	75.7 x 41.9	2.98 x 1.65	27.9	1.10	28634	7315-0934
19.1	3/4	14.9	0.59	84.3 x 42.7	3.32 x 1.68	30.5	1.20	28635	7315-0935
25.4	1	20.6	0.81	101.6 x 50.8	4.00 x 2.00	35.6	1.40	28638	7315-0938
Reducer Tee Connectors									
15.9 x 9.5	5/8 x 3/8	12.2 x 6.6	0.48 x 0.26	75.7 x 30.7	2.98 x 1.21	27.9 x 22.9	1.10 x 0.90	28636	7315-0936
19.1 x 9.5	3/4 x 3/8	14.7 x 6.9	0.58 x 0.27	84.3 x 30.2	3.32 x 1.19	30.5 x 21.3	1.20 x 0.84	28637	7315-0937
22.2 x 15.9	7/8 x 5/8	22.1 x 15.9	7/8 x 5/8	82.6 x 39.62	3.25 x 1.56	25.4 x 26.9	1.00 x 1.06	0052-5584 **	
25.4 x 6.4	1 x 1/4	20.2 x 6.4	0.87 x 0.25	76.2 x 31.8	3.00 x 1.25	37.8 x 20.3	1.32 x 0.80	0052-5592 **	
25.4 x 15.9	1 x 5/8	20.2 x 11.8	0.80 x 0.46	101.6 x 50.8	4.00 x 2.00	35.6 x 38.1	1.40 x 1.50	0052-5334 **	
31.8 x 12.7	1 1/4 x 1/2	31.8 x 12.7	1.25 x 0.50	86.1 x 49.7	3.39 x 1.95	30.4 x 26.9	1.20 x 1.06	0052-5594 **	
31.8 x 19.1	1 1/4 x 3/4	31.8 x 19.1	1.25 x 0.75	89.2 x 42.8	3.51 x 1.69	25.4 x 25.4	1.00 x 1.00	0052-5224 **	
38.1 x 19.1	1 1/2 x 3/4	38.1 x 19.1	1.50 x 0.75	90.7 x 46.0	3.57 x 1.81	25.4 x 25.4	1.00 x 1.00	0052-5214 **	
44.5 x 12.7	1 3/4 x 1/2	44.5 x 12.7	1.75 x 0.50	86.1 x 56.0	3.39 x 2.21	22.2 x 26.9	0.88 x 1.06	0052-5546 **	
44.5 x 19.1	1 3/4 x 3/4	44.5 x 15.5	1.75 x 0.61	86.1 x 60.8	3.39 x 2.40	22.2 x 31.8	0.88 x 1.25	0052-5394 **	
44.5 x 22.2	1 3/4 x 7/8	44.5 x 21.8	1.75 x 0.86	86.1 x 56.0	3.39 x 2.21	22.2 x 26.9	0.88 x 1.06	0052-5206 **	
44.5 x 25.4	1 3/4 x 1	44.5 x 25.4	1.75 x 1.00	86.1 x 49.2	3.39 x 1.94	22.2 x 25.4	0.88 x 1.00	0052-5073 **	
"Y" Connectors (60°, 150°, 150°)									
2.4	3/32	1.8	0.07	7.9 x 12.4	0.31 x 0.49	6.9	0.27	28551	7315-0851
3.2	1/8	1.9	0.08	9.7 x 15.0	0.38 x 0.59	8.4	0.33	28552	7315-0852
6.4	1/4	3.6	0.14	21.8 x 29.7	0.86 x 1.17	19.8	0.78	28554	7315-0854
15.9	5/8	14.0	0.55	30.0 x 47.5	1.18 x 1.87	27.9	1.10	28555	7315-0006
Reducer "y" Connectors (Straight Run With 45° branch)									
25.4 x 15.9	1 x 5/8	22.1 x 15.9	0.87 x 0.63	105.9 x 73.3	4.17 x 2.89	25.4 x 25.4	1.00 x 1.00	0052-5547 **	
31.8 x 19.1	1 1/4 x 3/4	31.8 x 19.1	1.25 x 0.75	93.0 x 73.3	3.66 x 2.89	25.4 x 25.4	1.00 x 1.00	0052-5205 **	
34.9 x 9.5	1 3/8 x 3/8	31.8 x 9.5	1.25 x 0.38	93.0 x 73.3	3.66 x 2.89	25.4 x 25.4	1.00 x 1.00	0052-5380 **	



Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts

*Nylon material (not glass-filled)

** Not stocked. Minimum order quantity applies





7277

NYLON SLEEVE



Relative Cost ●○○○○

Applications Hose abrasion and environmental protection. Oversize by at least 3mm (1/8") to the hose OD for installation. Affix with banded clamp or wire tie if needed. Cut with a hot knife, or heat the ends after cutting to keep from fraying.

Temperature 121°C (250°F) maximum.

Standards MSHA flame-resistance approval.

Construction Nylon woven fabric, designed to "friz" into a self-renewing shield that is extremely resistant to severe abrasion.

Packaging Boxed.

ID "B"		Flat Width "A"		Length		Part Number	Item Number	Description
mm	Inch	mm	Inch	meters	feet			
17.3	0.68	27.18	1.07	91.4	300	G81800-0010	HG-10	7277-1067
22.9	0.9	36.07	1.42	91.4	300	G81800-0014	HG-14	7277-1010
22.9	0.9	36.07	1.42	7.6	25	G81801-0014	HG-14x25FT	7277-1278
26.9	1.06	42.42	1.67	91.4	300	G81800-0016	HG-16	7277-1011
26.9	1.06	42.42	1.67	7.6	25	G81801-0016	HG-16x25FT	7277-1279
31.0	1.22	48.77	1.92	91.4	300	G81800-0020	HG-20	7277-1012
31.0	1.22	48.77	1.92	7.6	25	G81801-0020	HG-20x25FT	7277-1280
36.1	1.42	56.90	2.24	91.4	300	G81800-0024	HG-24	7277-1013
36.1	1.42	56.90	2.24	7.6	25	G81801-0024	HG-24x25FT	7277-1281
40.4	1.59	63.50	2.5	91.4	300	G81800-0026	HG-26	7277-1377
40.4	1.59	63.50	2.5	7.6	25	G81801-0026	HG-26x25FT	7277-1378
46.0	1.81	72.39	2.85	91.4	300	G81800-0028	HG-28	7277-1014
46.0	1.81	72.39	2.85	7.6	25	G81801-0028	HG-28x25FT	7277-1282
55.6	2.19	87.38	3.44	91.4	300	G81800-0032	HG-32	7277-1015
60.5	2.38	95.00	3.74	91.4	300	G81800-0038	HG-38	7277-1016
66.5	2.62	104.65	4.12	91.4	300	G81800-0042	HG-42	7277-1018
73.2	2.88	115.06	4.53	91.4	300	G81800-0046	HG-46	7277-1024
111.8	4.4	175.51	6.91	30.5	100	G81800-0064	HG-64	7277-1276

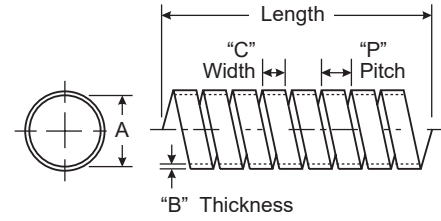
- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts

7277

HOSE ABRASION GUARDS

PLATED FLAT ARMOR SPRING GUARDS

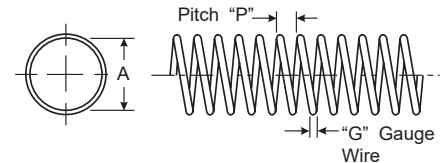
Application Zinc plated flat steel coil for resistance to high abrasion against flat surfaces. Typically used on high-pressure hydraulic or other steel reinforced hoses. Allow 0.8mm (1/32 inch) between the hose OD and guard ID for installation.



Coil ID "A"		Wall Thickness "B"		Coil Width "C"		Pitch "P"		Bulk Length		Part Number	Item Number
mm	Inch	mm	Inch	mm	Inch	mm	Inch	meters	Feet		
16.7	21/32	0.5	0.019	9.5	3/8	12.7	1/2	7.6	25	G82801-0009	7277-0501
15.5	39/64	0.8	0.032	6.4	1/4	9.5	3/8	7.6	25	G82801-0010	7277-0533
17.5	11/16	0.5	0.019	9.5	3/8	12.7	1/2	7.6	25	G82801-0011	7277-0502
20.6	13/16	0.7	0.028	6.4	1/4	9.5	3/8	7.6	25	G82801-0012	7277-0503
20.2	51/64	0.8	0.032	9.5	3/8	12.7	1/2	7.6	25	G82801-0013	7277-0534
22.2	7/8	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0014	7277-0504
24.2	61/64	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0015	7277-0505
25.4	1	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0016	7277-0506
27.8	1 3/32	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0017	7277-0530
31.0	1 7/32	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0019	7277-0507
32.5	1 9/32	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0020	7277-0508
34.9	1 3/8	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0022	7277-0532
39.7	1 9/16	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0025	7277-0520
41.3	1 5/8	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0026	7277-0509
42.9	1 11/16	0.7	0.028	12.7	1/2	15.9	7/8	1.5	5	G82801-0027	7277-0529
45.6	1 51/64	0.7	0.028	12.7	1/2	15.9	5/8	4.6	15	G82801-0028	7277-0525
46.8	1 27/32	0.7	0.028	12.7	1/2	15.9	5/8	4.6	15	G82801-0029	7277-0531
53.2	2 3/32	0.7	0.028	12.7	1/2	15.9	5/8	3.0	10	G82801-0033	7277-0527
59.5	2 11/32	0.7	0.028	12.7	1/2	15.9	5/8	1.5	5	G82801-0037	7277-0528
73.0	2 7/8	0.7	0.028	12.7	1/2	15.9	5/8	1.5	5	G82801-0046	7277-0526

PLATED WIRE SPRING GUARDS

Application Zinc plated round wire coil for resistance to high abrasion against flat surfaces. Typically used on high-pressure hydraulic or other steel reinforced hoses. Allow 0.8mm (1/32 inch) between the hose OD and guard ID for installation.



Coil ID "A"		Wire Thickness "G"			Pitch "P"		Bulk Length		Part Number	Item Number
mm	Inch	mm	Inch	Gauge	mm	Inch	meters	Feet		
14.0	0.55	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0009	7277-0521
17.2	0.676	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0010	7277-0510
17.3	0.682	1.65	0.07	16	5.6	7/32	7.6	25	G83801-0011	7277-0535
18.7	0.738	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0012	7277-0511
21.6	0.852	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0014	7277-0512
23.2	0.915	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0015	7277-0513
24.8	0.977	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0016	7277-0514
26.4	1.04	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0017	7277-0515
28.5	1.122	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0018	7277-0522
32.5	1.278	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0020	7277-0516
34.0	1.34	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0021	7277-0517
40.1	1.578	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0025	7277-0518
41.3	1.625	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0026	7277-0519
46.9	1.847	2.03	0.08	14	10.3	13/32	3.0	10	G83801-0029	7277-0524
53.8	2.12	3.05	0.12	11	8.7	11/32	2.1	7	G83801-0034	7277-0548
53.6	2.112	2.03	0.08	14	10.3	13/32	2.1	7	G83801-0040	7277-0523

- Coolant
- Fuel
- Oil
- SCR
- Exhaust
- Air
- Refrigerant
- Brake
- Accessories
- Belts



7277 (HEATGUARD™)

SILICONE FIBERGLASS SLEEVES



Application Non-asbestos, heat-resistant, protective sleeving. Special silicone coating can withstand a broad range of solvents and fuels. Affix in place with hose clamps or wire ties.



Temperature -54 °C to +260 °C (-65 °F to +500 °F) for continuous exposure.



Construction Knitted, coated fiberglass.

ID	Length		Part Number	Item Number	Description	
	mm	Inch				meters
6.35	0.25	15.24	50	G81100-0004	7277-1571	HTG-4
7.87	0.31	15.24	50	G81100-0005	7277-1572	HTG-5
9.65	0.38	15.24	50	G81100-0006	7277-1573	HTG-6
11.18	0.44	15.24	50	G81100-0007	7277-1574	HTG-7
12.70	0.5	15.24	50	G81100-0008	7277-1575	HTG-8
14.22	0.56	15.24	50	G81100-0009	7277-1576	HTG-9
15.75	0.62	15.24	50	G81100-0010	7277-1577	HTG-10
17.53	0.69	15.24	50	G81100-0011	7277-1578	HTG-11
19.05	0.75	15.24	50	G81100-0012	7277-1579	HTG-12
20.57	0.81	15.24	50	G81100-0013	7277-1580	HTG-13
22.35	0.88	15.24	50	G81100-0014	7277-1581	HTG-14
23.88	0.94	15.24	50	G81100-0015	7277-1582	HTG-15
25.40	1	15.24	50	G81100-0016	7277-1196	HTG-16
28.45	1.12	15.24	50	G81100-0018	7277-1197	HTG-18
31.75	1.25	15.24	50	G81100-0020	7277-1583	HTG-20
35.05	1.38	15.24	50	G81100-0022	7277-1584	HTG-22
38.10	1.5	15.24	50	G81100-0024	7277-1585	HTG-24
41.15	1.62	15.24	50	G81100-0026	7277-1586	HTG-26
44.45	1.75	15.24	50	G81100-0028	7277-1587	HTG-28
47.75	1.88	15.24	50	G81100-0030	7277-1588	HTG-30
50.80	2	15.24	50	G81100-0032	7277-1589	HTG-32
53.85	2.12	15.24	50	G81100-0034	7277-1590	HTG-34
57.15	2.25	15.24	50	G81100-0036	7277-1591	HTG-36
60.45	2.38	15.24	50	G81100-0038	7277-1592	HTG-38
63.50	2.5	15.24	50	G81100-0040	7277-1593	HTG-40
69.85	2.75	15.24	50	G81100-0044	7277-1595	HTG-44
76.20	3	15.24	50	G81100-0056	7277-1600	HTG-56
101.60	4	15.24	50	G81100-0064	7277-1602	HTG-64



Standards SAE AS1072A.



Temperature -54 °C to +260 °C (-65 °F to +500 °F) for continuous exposure, to 1090 °C (2000 °F) for 15-20 minutes, or 1650 °C (3000 °F) for 15-30 seconds.

ID	Length		Part Number	Item Number	Description	
	mm	Inch				meters
38.10	1.5	15.24	50	G81101-0024	7277-1611	24-HTGH
44.45	1.75	15.24	50	G81101-0028	7277-1612	28-HTGH
53.85	2.12	15.24	50	G81101-0034	7277-1613	34-HTGH
82.55	3.25	15.24	50	G81101-0052	7277-1616	52-HTGH

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



7412

THERMOSTATS

THERMOSTATS

Quality controlled factory calibration assures accuracy of opening and closing, regardless of pressure changes.



- Positive piston heat motor provides accurate temperature control.
- Sturdy metal construction throughout.

SUPERSTAT™* THERMOSTATS

The SuperStat™ thermostat incorporates an all stainless steel construction, larger heat motor and larger spring to provide superior performance. These new features provide:



- Precision temperature control.
- More efficient engine operation.
- Faster engine warm up.
- Fewer emissions.
- Better fuel economy.

OFFSET THERMOSTATS



- Offset design thermostat is specified by many Japanese manufacturers.
- Stem, spring and heat motor is offset from the center of the thermostat flange.
- A "jiggle pin" located in the offset flange of the thermostat allows release of trapped air behind the thermostat.

WEIR-STAT™* THERMOSTATS

The most effective cooling system control ever developed. Provides faster engine warm-up, stable temperature control, longer thermostat and seal life, improved fuel economy and driver comfort. Vehicles can operate without radiator shutters, reducing front axle weight, cost and noise. Fleets can operate at higher temperatures without the unnecessary activation of shut-down devices or fan clutches.



- Machined bead edge seats positively down on a resilient 3-piece flange resulting in greater no-leak, precision control than the original Weir-Stat™.
- Flange retains its elasticity, resists abrasion and corrosion and remains stable during extreme temperature and pressure changes.

* SuperStat™ and Weir-Stat™ is a registered trademark of STANT USA Corporation.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts





Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts

7412

THERMOSTATS

GREEN STRIPE™ HEAVY-DUTY THERMOSTATS

Quality controlled factory calibration assures accurate heat control under extreme variations in temperature, load and engine vibrations. Approved for marine applications.



- Heavy-gauge brass and stainless steel with positive piston heat motor.
- Available in Choke type, Top By-Pass, Bottom By-Pass, Side By-Pass, Normally Open and other types to meet heavy-duty cooling system designs.
- Packaging: Individually boxed.

GREEN STRIPE™ HEAVY-DUTY THERMOSTAT SEALS

Fits securely around thermostat valve to prevent leakage. Approved for marine applications.



- Corrosion-resistant steel construction.
- Specially constructed to assure accurate fit.
- Packaging: Individually boxed, 10 boxes to over-pack.

SEAL-EZE THERMOSTAT GASKETS

Cuts installation time in half. Adhesive-backed gasket material helps prevent breaking of water outlet. Gasket cement is not needed. Approved for marine applications.



- Self-adhesive backing holds thermostat in place while water outlet is being installed.
- Rubber thermostat seals also available.
- Packaging: 10 per box.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

7410

CAPS - RADIATOR CAPS

All Gates radiator pressure caps are constructed of corrosion-resistant, heavy-gauge metal. This assures long service life and accurate control of pressure.

STANDARD CAPS



- Covers a wide range of pressures.

SPINLOK CAPS

Can be used for applications with or without coolant recovery systems. Inventory requirements are dramatically reduced.



- Unique eight-sided, scalloped crown allows for a firm grip for easy installation and removal.
- Neoprene upper and lower seal.
- Body rotates independently of crown – operator merely pushes down and twists.
- Safe and reliable.

SAFTI-VENT PRESSURE RELEASE CAPS

Can be used for applications with or without coolant recovery systems. Inventory requirements are dramatically reduced.



- Safety release lever.
- Protects against accidental burns by releasing steam through overflow tube.

COOL CONTROL CAPS

Diverts pressurized coolant to a reservoir rather than to an overflow valve.



- Constant pressure-type cap for use on closed cooling systems.
- Increases cooling system efficiency by eliminating air from the cooling system.





7410

CAPS - RADIATOR CAPS

HEAVY-DUTY RADIATOR CAPS

For use on heavy-duty trucks, buses and tractors.



- Fits applications with 3/4" deep filler necks.
- Packaging: Individually boxed.

Part No.	Pressure	Fits Filler Neck I. D.
	PSI	Inch
31307	4	2 11/16
31308	7	2 11/16
31309	10	2 11/16

HEAVY-DUTY COOL CONTROL CAPS

Diverts pressurized coolant to reservoir instead of an overflow tube.



- Corrosion-resistant, heavy-gauge metal construction assures long life and accurate control of pressure.
- Atmospheric type valve allows cooling system to pressurize as needed, resulting in less strain on system components.
- Packaging: Individually boxed.

Part No.	Pressure PSI
31348	7
31349	10
31350	15

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



7410

CAPS - FUEL CAPS

**HEAVY-DUTY FLEET AND OFF-ROAD EQUIPMENT
HEAVY-DUTY SADDLE TANK CAPS**

Heavy metal construction throughout. Meets I.C.C. requirements.



- Available for side or saddle tanks.
- Locking caps come with two keys. Keyed-alike caps available on special order.

Part No.	Description	Type
31801	Solid Brass – 2 11/16" Non-Vented (2 1/8" x 12 UN Male Thread)	Non-Locking
31803	Solid Brass – 2 49/64" Vented (2"x 11 1/2 NPSM Female Thread)	Non-Locking
31804	Zinc Plated Steel or Aluminum – 4 7/16" Vented (Bayonet – Fits 3 Cam-Ordinance Type Filler Neck)	
31805	Solid Brass – 5 3/32" Non-Vented (4 1/4" x 12 NS Male Thread)	Non-Locking
31806	Solid Brass – 4 31/32" Non-Vented (4 1/4" x 8 NS Male Thread)	Non-Locking
31807	Aluminum – 4 5/32" Non-Vented (4" x 8 NPSM Female Thread)	Non-Locking
31821	Solid Brass – 2 1/2" Vented (2 1/8" x 12 UN Male Thread)	Locking
31823	Solid Brass – 2 1/2" Vented (2"x 11 1/2 NPSM Female Thread)	Locking
31826	Solid Brass – 4 63/64" Non-Vented (4 1/4" x 8 NS Male Thread)	Locking
31827	Solid Brass – 4 25/32" Non-Vented (4" x 8 NPSM Female Thread)	Locking

EVAPORATIVE EMISSION CONTROL FUEL CAPS

Meets Federal and State Emission Requirements. Two-way action pressure relief/vacuum relief valve allows fuel tank to "breathe" while preventing the escape of fuel fumes. Seals are compounded from fuel-resistant rubber. Available in three configurations.

Fenderwell



- Zinc-plated and dichromate dipped for superior corrosion resistance.
- Some models are made from rugged plastic.

Exterior



- Caps have chrome-plated finish.

Locking



- Comes with two keys. Keyed-alike caps available on special order.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



Coolant
Fuel
Oil
SCR
Exhaust
Air
Refrigerant
Brake
Accessories
Belts

7410

CAPS - FUEL CAPS

FUEL CAPS

Rugged, heavy-duty construction. Caps fit both shallow and deep cam filler necks – vented, non-vented and vented anti-surge. Three configurations available for most popular applications.

Fenderwell



- Sturdy metal construction throughout.

Locking



- Comes with two keys. Keyed-alike caps available on special order.

Exterior



- Attractive chrome-plated finish.

VaporVent



- Handy push button allows owner to release pressure from fuel system prior to removing cap from the filler neck.
- Reduces the risk of fuel spray and vapor surge.

7410

CAPS - OIL FILLER CAPS

OIL FILLER CAPS

Durable construction assures long service life.



- Special finish resists rust and provides excellent protection against under-hood heat.

PCV OIL FILLER CAPS

Meets requirements of emission control systems on late model cars and light trucks. Universal design offers maximum coverage with minimum inventory.



- Sealed construction prevents engine crankcase gases from escaping into the atmosphere.
- Heavy-gauge steel construction resists under-hood heat and corrosion.



1170

SPLASH GUARDS

Minimizes splashing of rain and settled water from wheels on medium and heavy-duty trucks.



- Tough rubber and fabric-filled construction for maximum service life.
- Special half-round reinforced ridge resists tearing and cracking.
- Body is 1/4" thick and edge is 3/8" thick for extra strength.
- Packaging: Order in pairs (unpackaged).

Length	Width	Part No.
Inch	Inch	
26	24	90335
30	24	90333
36	24	90334
40	24	90332

2960

STATIC STRAPS

Discharges potentially dangerous static electricity from equipment when properly grounded.



- Specially compounded rubber conducts static electricity.
- Resists weathering, abrasion and tearing.
- Meets, military specifications MILR3065C.
- Packaging: 25 per carton.

Length	Width	Depth	Part No.
Inch	Inch	Inch	
25	1 1/16	3/16	90330
30	1 1/16	3/16	90331

7469

HOSE CUTTERS

SMALL NYLON TUBING CUTTER + REPLACEMENT BLADES

Tubing cutter gives straight, clean, square cuts on J844 tubing.



- Lightweight and compact size – 3/4" by 3".
- Designed to ensure user safety.
- Blade guard offers more protection against accidental blade contact.
- Handle has ribs for improved grip.
- P/N 7208-40205

HOSE CUTTERS (HAND-HELD) AND REPLACEMENT BLADES

Makes clean cuts with no ragged edges. Cuts most non-metal reinforced rubber hoses up to 3" I.D.



- Lightweight with nylon handles.
- Blade closes into handle for safety.
- Use small cutter for hoses up to 1 1/2" I.D.
- Packaging: Cutter and blades individually packaged on shrink-wrapped cards.

Hose Cutter	Description	Replacement Blade	Cuts to Hose I.D.
91143	Large I.D. Hose Cutter	91144	3"
91153	Small I.D. Hose Cutter	91154	1 1/2"

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



7469

HOSE CUTTERS

GATES POWER CUTTER 208

Safely cuts two and four-wire hose through 2", six-wire hose through 1-1/4". Effortless Straight Cuts Every Time.



- Clear face shield for added safety.
- Powerful high torque, 4.5 horsepower peak motor.
- Includes scalloped, 12" blade to dissipate heat, reducing friction for clean, faster cuts up to 1-1/4" I.D.
- Optional abrasive blade for continuous use with 1-1/4" I.D. and larger spiral-wire reinforced

- Reversible blade can be sharpened; removal and installation is easy.
- Easy to use, front face plate with movable pins holds hose securely for a clean straight cut.
- Sturdy blade guard shields blade for safety.
- Permanent mounting brackets (included) to attach saw to table.

Shaft/Arbor Hole Diameter: 1"

Power Source: 4.5 HP Peak, 115/50/60 Hz, 20 Amps.

No Load Speed: 3,500 rpm.

Dimensions: 22-1/2" wide by 18-1/4" length by 23-1/2" high.

Weight: 65 lbs.

P/N: 7480-6609.

Caution: Keep blade sharp. Heat generated by a dull blade can damage steel and flare the hose.

4-16 PORTABLE HOSE SAW



- Cuts up to 1", four-wire braid.
- Abrasive cut-off wheel.

Voltage: 120 Volts.

Cycle: 60 Hz / 1 phase.

Power: 6.5 Amp.

No-load speed: 7,400 rpm.

Wheel size: 6"

Arbor Hole: 7/8"

P/N: 7480-6605.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



DRIVEN BY POSSIBILITY™

THE POWER BEHIND POWER TRANSMISSION

SYNCHRONOUS BELTS



TOUGH INDUSTRIAL APPLICATIONS CALL FOR EVEN TOUGHER SYNCHRONOUS BELTS. DESIGNED WITH VARYING TOOTH PROFILES TO ACCOMMODATE A VARIETY OF APPLICATIONS, FROM POLY CHAIN, AND RUBBER SYNCHRONOUS BELTS TO AUTOMOTIVE

SYNCHRONOUS BELTS WHEN HIGH-POWER TRANSMISSION IS DESIRED. LEANER, MEANER, AND CLEANER. NO OIL. NO STRETCH. THAT'S HOW GATES® SYNCHRONOUS BELTS POWER PROGRESS.

V-BELTS

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

XL™ V-Belts (North America)

STANDARD V-BELT

For the most demanding engine drives. Due to thermal forces, this variable notched belt tightens on the drive as it gets hot. This results in improved belt performance by reducing tension decay and noise.

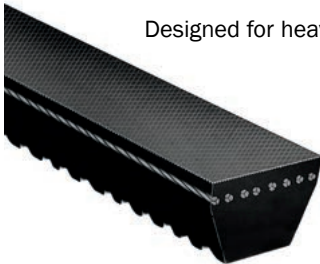


- Fiber-loaded rubber stock puts more flexibility along the length of the belt, yet gives the belt greater lateral stability in the pulley.
- Thermally active tensile cords for maintenance-free performance when properly installed and tensioned.
- Form ground to ensure precise top width and sidewall dimensional control for proper fit in pulley as well as a smoother, quieter running belt.
- Meets or exceeds SAE J636c specifications.

Fleetranner™ V-Belt (Europe)

STANDARD V-BELT

Designed for heavy-duty applications with improved belt performance and increased and stability.

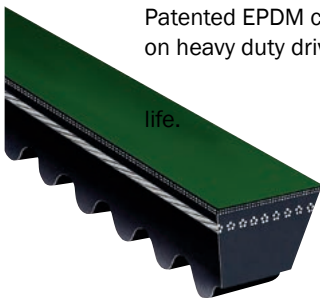


- Special, double layer of reinforcement not only protects the belt top, but also increases belt flexibility, thus ensuring long and trouble-free performance.
- Thermally active tensile cords for maintenance-free performance when the belt is properly installed and tensioned.
- Fibre-loaded rubber stock puts more flexibility along the belt length, yet gives the belt great lateral stability and improved load-carrying capacity.
- Belt cogs are aramid fibre reinforced. Aramid fibre is self-lubricating, allows the belt to run smoothly and quietly in the pulleys and keeps it from turning over or coming off the drive. Fibre-reinforced rubber also improves wear resistance and therefore reduces maintenance.
- V-form is ground for precise top width, exact sidewall dimensions and proper belt fit.

FleetRunner™ / Extra Service XF (North America)

HEAVY DUTY V-BELT

Patented EPDM construction built specifically for more durability and longer life on heavy duty drives.



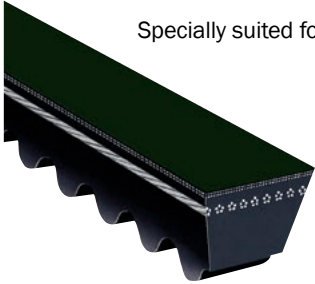
- Special compound provides unmatched flexibility, stability, load carrying capacity and belt life.
- Patented material provides peak performance at extreme prolonged operating temperatures.
- Heavy-duty construction resists cracking and wear.
- Oil and heat resistant.
- Unique under-cord notch pattern offers increased flexibility for smaller diameter pulleys.
- Available in over 70 sizes.

V-BELTS

Fleetranner™ Bandless Laminated V Belt (Europe)

HEAVY DUTY TRUCK AND BUS V-BELT

Specially suited for long centre distance drives. Flexibility, stability and quality materials ensure long belt life.

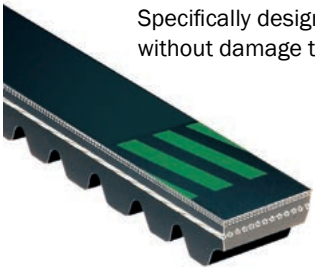


- Extra strong, heat resistant polyester tensile cords.
- Cross-cord layers to support the load-carrying belt section and to increase lateral stability.
- Special fibre-reinforced rubber compound. Oil, head and wear resistant.
- Flex-Weave™ layers in under-cord for more flexibility along the length, increased lateral rigidity and crack resistance.

Green Stripe™ Truck and Bus Series V-Belts (North America)

HEAVY DUTY TRUCK AND BUS V-BELT

Specifically designed for heavy-duty truck, bus and off-road equipment applications. Absorbs normal shock loads without damage to belt.



- Special tensile cords give high stretch resistance.
- Special notch design resists cracking while providing tensile support during operation.
- Oil and heat-resistant construction throughout.
- Meets SAE J636b and SAE J637 specifications.

Green Stripe™ XL™ V-Belts (North America)

HEAVY DUTY PREMIUM V-BELT

Premium quality belts for heavy-duty engines.



- Fiber loaded rubber stock puts added flexibility along belt's length, yet affords greater lateral stability.
- Variable notch pattern causes belt to run cooler, quieter and with less bending stress.
- Precision V-forming process assures exact size and angle control.
- Meets or exceeds SAE 636 specifications.
- Meets or exceeds ARPM standards for static conductivity.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



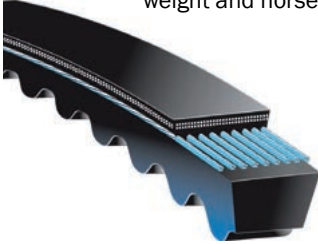


V-BELTS

Super HC™ and Super HC™ Molded Notch V-Belts (North America)

NARROW V-BELT

Recommended for use on special drives where space and weight limitations are critical. These “narrow” cross-sections can transmit up to three times the horsepower of the classical cross-sections (A, B, C and D) in the same amount of drive space. Suitable for all industrial applications, particularly where space, weight and horsepower capacity are critical.

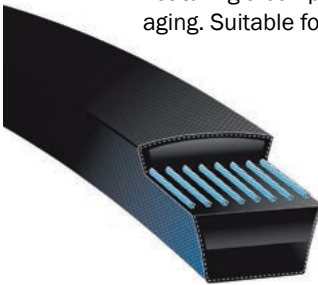


- Gates curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear and increased belt life.
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration.
- The Flex-Weave™ cover is a patented construction for longer cover life, providing extended protection to the core of the belt from oil, dirt, and heat.
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance.

Hi-Power™ II Belts (North America)

INDUSTRIAL V-BELT

Featuring a composite, multi-purpose construction, these belts resist oil and heat, ozone, sunlight, weather and aging. Suitable for all industrial applications, including v-flat drives.



- Gates Curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear and increased belt life.
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration.
- The Flex-Weave™ Cover is a patented fabric construction for longer cover life, providing extended protection to the belt core from oil, dirt and heat.
- Meet or exceed ARPM standards for static conductivity and oil and heat resistance.

Tri-Power™ Belts (North America)

SMALL DIAMETER SHEAVE V-BELT

Constructed with Gates proprietary construction, this belt has a superior combination of flex and load carrying capacity, as well as less stretch resulting in less maintenance. This provides superior performance on the toughest heavy-duty A, B and C Section industrial drives. Suitable for all industrial applications, particularly where small or sub-minimal sheave diameters are required.



- Notches molded into the belt during manufacturing make this belt well suited for drives with smaller diameter sheaves.
- Belt edge is machined for even sheave groove contact resulting in less slip and wear.
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration.
- Meets ARPM oil and heat resistant standards.
- Meets ARPM static conductivity requirements.

Note: Tri-Power™ belts are available in AX, BX, and CX sizes.

Tri-Power™ belts longer than 210 inches are a banded, cut notch construction.

Industrial V-Belts (Europe)

HEAVY DUTY FOR EUROPEAN INDUSTRIAL APPLICATIONS

Premium belts such as the raw edge, narrow section Quad-Power™ II and Super HC™ MN V-belts and the classical section Hi-Power™ MN V-belts ensure excellent performance on the heaviest drives. They feature high modulus thermally active polyester cords that exhibit extremely low stretch. A leading-edge technology delivering the advantages every user is looking for: less maintenance and greater cost savings.

More information on sizes and applications of Gates belts can be found in Gates' catalogues E/70107 and E/70385.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

V-BELT SETS

Fleetrunner™ Banded V-Belt (Europe)

HEAVY DUTY V-BELT SET

Wrapped V-belt providing maximum protection in severe working conditions.

- Concave sidewalls straighten out to assure optimum contact with the pulley and uniform belt load.
- Strong flex-bonded tensile cords work as one solid and inseparable unit.
- Flexible Flex-Weave™ cover protects against dirt, grit and oil. With static conductivity.
- Rubber compound withstands oil, heat and wear.

Recommended for: older generations of heavily loaded V-belt drives (classical section - 8527); drives subjected to heavy vibration (high-capacity section - 8569) where bandless laminated belts show stability problems.

Green Stripe™ PowerBand™ Belts (North America)

HEAVY DUTY V-BELT SET

Designed for problem, heavy-duty, heavily vibrating applications requiring belt sets. Tie-band feature joining belts together ensures stability lacking in ordinary belt sets.

- Even load distribution between strands provides better shock load absorption.
- Belt cannot turn over or slip off drive.
- Unique tensile cord design gives belt extra strength, added flexibility and shock-load resistance.
- Molded notches reduce bending stress, especially on small diameter pulleys, while dissipating heat.
- Meets or exceeds SAE J1459 specifications.

Super HC™ and Super HC™ Molded Notch PowerBand™ V-Belts (North America)

Fleetrunner™ PowerBand™ (Europe)

NARROW V-BELT SET

The PowerBand™ construction allows multiple belts to function as a single unit, with even load distribution and each strand fitting securely in the sheave groove. Recommended for multiple V-belt drives exposed to pulsating or heavy shock loads which can make belts whip, turn over or jump off the drive.

- The tie band assures high lateral rigidity, guiding the belt in a straight line and preventing it from coming off the drive.
- Concave sidewalls provide proper cord support and full contact with the sheave-groove for equal loading and uniform wear.
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration.
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance.

Fleetrunner™ PowerBand™ Banded V-Belt (Europe)

HEAVY DUTY V-BELT SET

This belt replaces original equipment joined belts on heavy-duty problem or high-load drives. It consists of two or more banded V-belts joined together by a permanent reinforced rubber tie band. This strong band controls belt-to-belt distance and keeps the belts from bending sideways. Thanks to its construction PowerBand™ is specially suited for vibration and shock sensitive drives where single belts turn over or jump off the pulleys.

- Wrapped with Flex-Weave™ fabric for maximum protection in severe working conditions.
- Concave sidewalls for optimum contact with the pulley and uniform belt load.
- Strong flex-bonded tensile cords.
- Polychloroprene compound withstands oil, heat and wear.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



V-BELT SETS

Fleetrunner™ PowerBand™ Molded Notch Multiple V-Belt (Europe) HEAVY DUTY V-BELT SET

Consists of two or more molded cog belts joined together by a high-strength tie band, thus being tougher than belts taken separately. Ensures excellent stability lacking in ordinary belt sets. The cogged PowerBand™ cannot turn over or slip off the drive.

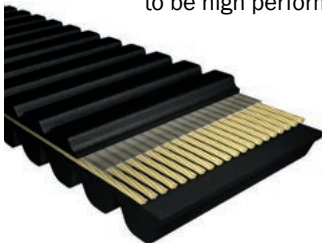


- Evenly distributed strand-to-strand distance provides better shock load absorption.
 - Molded cogs reduce bending stress, especially on small diameter pulleys, and help dissipate heat.
 - Unique tensile cord design gives extra strength, added flexibility and shock load resistance.
- Recommended for: heavy-duty automotive drives, subject to severe and problematic vibrations.

RECREATIONAL V-BELTS

G-FORCE™ CVT BELTS

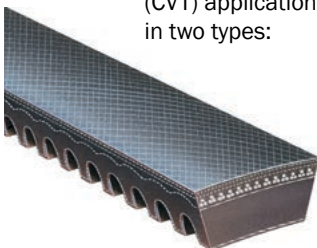
Gates G-Force™ belts are the first of a new generation of Continuously Variable Transmission (CVT) belts. Designed using Finite Element Analysis (FEA) techniques, the latest construction, materials and measuring technology G-Force™ drive belts are designed for superior fit, performance and durability for today's recreational and utility all-terrain equipment. Identical to OEM, G-Force™ belts are constructed with double or single cog designs to match the OEM belt. Extreme testing, in controlled environments as well as on race vehicles, has proven the G-Force™ belt to be high performing and durable, with no clutching adjustments necessary at installation.



- OEM constructed drop-in belt with no clutching adjustments.
- Tested under extreme conditions in controlled environments as well as on race vehicles.
- Viability testing completed to match shift curves.
- Dynamometer testing proves G-Force™ belts outlast other high-performance belts by as much as five times.
- Advanced aramid tensile cords and reinforced fiber loaded under-cord are used in construction for durability and dependability.
- Proprietary measuring technology assures exact fit.

POWERLINK® BELTS

Gates PowerLink® drive belts are specially designed for a variety of motorized Continuous Variable Transmission (CVT) applications including street legal step-through scooters and Go-Karts. PowerLink® belts are available in two types:



- Conventional belt offers OE-equivalent performance and durability.
- Premium belt provides longer durability for high performance applications.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

LAWN AND GARDEN V-BELTS

BLADERUNNER™ BELTS

Designed to specific unique applications providing exact OEM fit, construction and performance of leading lawn and garden equipment manufacturers. Built to withstand the rigorous start and stop operation of outdoor power equipment.

- Meets or exceeds the performance of each specific application.
- Utilizes aramid cord construction in most cases.
- Smooth operation during frequent and severe shock loads.
- Reduces costly downtime and labor associated with replacing a belt.
- Superior performance over fractional horsepower belts on recommended applications.

POWERATED™ V-BELTS

These green belts are an alternative to conventional light-duty belts, with high performance construction delivering more horsepower, less stretch and providing longer service life. PowerRated™ belts are suitable for outdoor power equipment, appliances and industrial applications where Fractional Horsepower (FHP) belts are typically used.

- Bareback construction for smooth clutching on shock loaded, backside-idler driven equipment.
- Aramid tensile cords combine limited stretch with extraordinary strength and durability.
- Meets ARPM oil and heat resistant standards.

Note: PowerRated™ V-Belts can be substituted for equivalent sizes of Truflex™ V-Belts.

Note: PowerRated™ belts do not meet ARPM requirements for static conductivity.

TRUFLEX™ V-BELTS

Truflex™ belts feature superior length stability for minimal take-up requirements. Suitable for all industrial light duty applications, usually using fractional horsepower (FHP) motors.

- Gates curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear and increased belt life.
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration.
- The Flex-Weave™ cover is a patented construction for longer cover life, providing extended protection to the core of the belt from oil, dirt and heat.
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance.

Note: Truflex™ belts are offered in cross sections 2L (0), 3L (1), 4L (2), 5L (3).

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

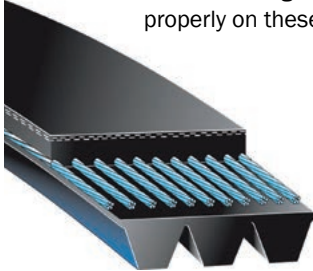


SERPENTINE BELTS

Micro-V® Stretch Fit™ Belts (North America)

STANDARD, SELF-TENSIONING SERPENTINE BELT

New Stretch Fit™ Drive Systems Demand New Solutions. Gates Micro-V® Stretch Fit™ Belts, with exclusive self-tensioning technology, are the first and only Aftermarket belts engineered to fit like a glove and perform properly on these unique stretch fit drive systems.



- Patented highly engineered EPDM belt ribs are extremely resistant to oil leaks, wear and pilling.
- New TwistLock™ technology provides the strength and flexibility of advanced polyamide tensile cord.
- Specially formulated adhesive locks onto the cord allowing it to elongate and stretch, but never lose tension.

Prior to installation, Stretch Fit™ belts are shorter than the actual working length, but once installed they automatically tension – maintaining the proper tension over the life of the belt and ensuring optimum load-carrying capacity.

Micro-V® Belt (North America)

STANDARD SERPENTINE BELT

Belt for Accessory Belt Drive Systems (ABDS) and other serpentine belt applications. Designed using advanced manufacturing technology and premium EPDM construction to provide customers with superior ABDS and new vehicle type performance.

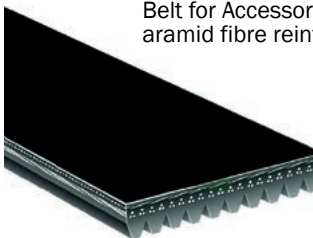


- Precision dimension control of rib profile transmits load efficiently throughout the ABDS allowing components to operate at optimum levels.
- Able to operate and accept misalignment in the ABDS system better than other serpentine belts.
- Flexible construction allows the belt to withstand billions of topside and backside bends resulting in long belt life.
- Meets or exceeds SAE J1459.

Micro-V® Belt (Europe)

STANDARD SERPENTINE BELT

Belt for Accessory Belt Drive Systems (ABDS) and other serpentine belt applications. Designed using special aramid fibre reinforced rubber compound for improved abrasion resistance.



- Precision dimension control of rib profile transmits load efficiently throughout the ABDS allowing components to operate at optimum levels.
- Able to operate and accept misalignment in the ABDS system better than other serpentine belts.
- Flexible construction allows the belt to withstand billions of topside and backside bends resulting in long belt life.
- Meets or exceeds SAE J1459.

Century™ Series Micro-V® Dual-Sided Belt (North America)

HEAVY DUTY DUAL-SIDED SERPENTINE BELT

For equipment belts on serpentine drives that require a higher degree of efficiency when transmitting power. Designed for small diameter pulleys and for use with or without automatic tensioners.



- V-ribbed on both sides of the belt.
- Specially designed to resist wear and cracking due to overall reduced thickness in construction.
- Broad coverage on unique applications.
- Custom setup for Gates specialized solution kits for Serpentine drives that cause problems from the OEM.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

SERPENTINE BELTS

Green Stripe™ Micro-V® AT® Belts (North America)

Fleetranner™ Micro-V® Belts (Europe)

HEAVY DUTY SERPENTINE BELT

Long wearing fiber-loaded stocks with greater load-carrying capacity designed for demanding, heavy-service drives. Designed for replacing original belts on serpentine drives and other heavy-duty V-ribbed belt applications.

- Special belt constructions eliminate belt noise, reduce tension loss and solve problem drive applications.
- Extra heavy-duty construction resists cracking and wear.
- Precision ground to assure optimum belt-to-pulley fit.
- Special formation process for precise dimensional control.
- Reinforced with stretch-resistant, thermally active polyester tensile members.
- Meets or exceeds SAE J1459 specifications.

Fleetranner™ Micro-V® Belts (Europe)

HEAVY DUTY SERPENTINE BELT

Engineered specifically for fleets and heavy-duty applications in trucks, buses and tractors. They are also recommended for high-speed, small-diameter applications requiring increased power transmission.

- Back fabric provides extremely high resistance to wear.
- Polyester tensile cords guarantee low stretch and optimum load-carrying capacity at even the highest tensions.
- Aramid fibre-reinforced EPDM compound guarantees optimum resistance to high/low temperature, wear, pilling, oil drops and ozone and improved coefficient of friction.
- Low belt profile increases flex life, thus ensuring higher mileage and trouble-free performance.
- Re-engineered heavy-duty construction resists cracking and wear to provide longer service life.

FleetRunner™ Micro-V® Belts (North America)

HEAVY DUTY SERPENTINE BELT

Designed for the toughest applications, FleetRunner™ construction provides superior flexibility, stability, load capacity and unsurpassed belt life. Patented materials deliver peak performance at extreme prolonged operating temperatures making this belt the ultimate problem solver. An advanced blend of EPDM rubber technology withstands the modern threats of deterioration from increased exposure to ozone and water-based coolants. FleetRunner™ does this all while providing the lowest cost per mile for fleets, including ¾ & 1 ton pickups.

- Belt of choice by fleets, including ¾ & 1 ton pickups.
- Lowest cost per mile.
- Consistently outperforms all competitors.
- Outstanding crack resistance at extreme temperatures.
- Problem-solver designed for the toughest applications.

Industrial Micro-V® Belts (J, L and M Series) (North America)

INDUSTRIAL SHORT PROFILE SERPENTINE BELT

Exclusive truncated (shortened) profile gives Micro-V® belts increased flexibility, reduced heat buildup and allows performance at higher speeds on smaller diameter sheaves. Well suited for applications such as appliances, outdoor power equipment, roller conveyors, machine tools, medical equipment and exercise equipment.

- Fiber reinforced ribs for excellent wear resistance.
- High modulus, low stretch tensile member for added strength and dependability.
- Smooth running for minimal vibration at high speeds.
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts





Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts

DRIVEALIGN™ AUTOMATIC BELT TENSIONERS

Gates is a global leader in Original Equipment (OE) System Design, with a full line of over 500 tensioners globally. Gates ensures that every tensioner they manufacture is built to rigid tolerances and specifications that guarantee fit, form and function.



- Patented vibration damping system improves tensioners, belts and accessory life.
- Torsional round spring design provides consistent tension and does not allow contamination.

DRIVEALIGN™ HEAVY-DUTY AUTOMATIC BELT TENSIONERS

The longest lasting belt tensioners in the industry. Engineered to exceed demanding OEM requirements.



- Labyrinth Seal – prevents contamination of internal parts for maximum durability and service life.
- Machined Steel Pulley – reduces surface wear while shielding internal bearing from outside contaminants.
- Double Row Bearings – twin rows of bearings carry more load and last up to three times longer than two individual bearings.
- Round Spring Wire – includes chrome-silicone torsion spring for less flex-fatigue than flat-wire designs.
- Patented Damping Mechanism – provides maximum stability, reducing vibration and increasing the life of belt, tensioner and other accessory drive components.

HYDRAULIC TENSIONERS

For applications with high loads and/or angular vibrations, where a mechanical automatic tensioner cannot provide sufficient damping or tensioner movement.



- Use Gates tensioner pin set tool (PN#91010) for securing piston.

DRIVEALIGN™ IDLER PULLEYS

Designed for use on automobiles and light trucks as a locked center tensioning pulley, an automatic belt tensioner pulley or an idler pulley.



- Steel or thermoplastic construction provides high durability for long life.
- Bearing is designed for application specific speed and load requirements.
- Reliable operation under severe conditions.

DRIVEALIGN™ HEAVY-DUTY IDLER PULLEYS

Long-lasting pulleys built to endure the rigors of today's heavy-duty, fleet and off-road equipment.



- Superior bearings out perform OE Idler Pulleys.
- Robust and high quality pulley materials to withstand contaminants.
- New hardware included on some popular applications.
- Built with precise dimensional tolerance to ensure proper fit and long lasting performance.
- Built with corrosive-resistant coating to prevent rust and increase durability.

EUROGRIP™ OE DRIVE COUPLERS

Flexible coupler dampens shock and tolerates misalignment.



- Designed to connect a decoupler pulley on an alternator or air conditioning compressor.
- Lubricated jacket minimizes coupling and end piece wear and retains tooth integrity during operation.
- Glass fiber cord provides excellent dimensional stability at high rotational speeds.
- Fiber-loaded construction maximizes torque capability, controls damping and provides excellent age resistance.
- Coupling's flexibility tolerates misalignment in components.
- Predictable shear properties allow for component protection.

WATER PUMPS FOR HEAVY DUTY APPLICATIONS

Gates carries an extensive line of water pumps for heavy duty applications



- Designed to handle rugged Fleet standards.
- New pumps manufactured to ISO/TS 16949 standards.
- 100% fully tested unitized bearings/seals.
- Gates heavy duty water pumps, represented as a part number with an HD suffix, carry a warranty of 18 months or 150,000 miles/5,400 hours, whichever comes first.
- Computerized machined surfaces for proper fit/sealing.

Coolant

Fuel

Oil

SCR

Exhaust

Air

Refrigerant

Brake

Accessories

Belts



LIST BY KEYWORDS

AdBlue	See SCR.	DPF Sensor	Page 43. (4040T)
Air Brake	Page 118-125, (3245E, 3245T, 3276, 3658C, 3658E, 4327, 4657AB, 4657DT, 7752) Also see Vacuum Brake.	EGR	See Exhaust Gas Recirculation.
Air Cleaner	See Air Intake/Inlet.	Elbow	Coolant or air hose - page 44-47. (4261, 4278, 4281, 4177 (Elbows))
Air Compressor	Compressed air or brake supply - see Air Brake. Compressor supply from charge air - see Coolant, Small Diameter.	Engine Oil	See Oil section.
Air Conditioning	Page 116-117. (3353)	EPDM	Straight - page 18-23, 30, 34-35, 94-95, 104-105, 113. (4175EC, 4178, 4175SC, 4175HT, 4176HD, 4272, 4685WG, 4254, 4284, 3137ME, 4686ME, 4289E, 4256NP, 4256PM)
Air Duct	Page 100. (7768) Also see Air Intake, Coolant Hose, or Scavenge Hose.	Exhaust Gas Recirculation	Straight - page 38-42, 120, 123. (4230T, 4040A, 4251D, 4230SB, 4230RS, 4230RK, 3269S, 3230, 3245E, 3276) Hump - page 34-35. (4254, 4284) Formed - page 48-53. (4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS) Peroxide cured - page 53, 88. (4256LS, 4217IS)
Air Intake/Inlet	Straight - page 100-103, 108. (7768, 4663A, 4663J, 4663G, 4171H) Hump - page 109-111. (4177W, 4177S, 4177) Formed - page 104-107. (7736, 4289E, 4289N) Also see Coolant section page 16-55.	Flexible	Coolant supply/return - see Coolant section. Exhaust air connection - page 111. (4177)
ATAAC	See CAC.	Fuel Fill	See Wire Reinforced for highest flexibility in large diameters.
Belt	V-Belt - page 148-152. PowerBand™ - 151-152. Recreational V-Belt - page 152. Micro-V® serpentine - page 154-155. Belt Accessories - page 156.	Fuel Line	Page 68-69, 69, 84. (4663K, 4278BD, 4278, 4278CN)
Biodiesel	Straight - page 58, 60-65, 67-68. (4219G, 4219D, 4219BG, 4219BF, 4219BD, 4219, 4663K, 3658F) Formed - page 69. (4278BD)	Guard	Straight - page 58-67, 77-76, 122. (4219G, 3225ST, 4324, 4219D, 3284AC, 4219BG, 4219BF, 4219BD, 4327DT, 4219M, 4219N, 4219BM, 3658F, 3658D, 3658BC, 3658E)
Brake	See Air Brake or Vacuum Brake. Brake fluid reservoir - page 38-39. (4040A, 4251D, 4230T). Hydraulic brake pressure line not supplied by Gates	Heater	Formed - page 69, 83-85. (4278BD, 4278CN, 4278OB, 4278SS) See Gates Industrial Hose Catalog.
CAC (Charge Air Cooler)	Straight - page 108. (4171H) Also see Coolant section for cold side CAC only. Hump - page 109-111. (4177W, 4177S, 4177) Formed - page 51, 113 (4256HY, 4256NP, 4256PM, 4278AA)	Hot Side CAC	Submersible in-tank - page 65. (4219) See Fuel Fill, Fuel Line, or Fuel Tank.
Caps	Radiator, fuel, oil - page 141-144.	Hump and Ring	See Gates Government Hose Catalog
Clamp	Page 127-133	Hydraulic Oil	For hose guard, see Sleeve. Also see Splash Guard.
CNG (Natural Gas)	See Gates Industrial Hose Catalog 39496-000 for LP350, LP350x, and LPG Vapor.	LP (Liquid Propane)	Straight - page 38-42. (4230T, 3270, 4040A, 4251D, 4230SB, 4230RK, 4230RS, 3269S, 3230, 4230S, 3231) Formed - page 48-53. (4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS)
Cold Side CAC	See CAC.	Marine	Straight - page 108. (4171H) Hump - page 109-111. (4177W, 4177S, 4177)
Coolant Bottle	Page 39. (4040A, 4251D). Also see Coolant section. page 16-55.	Military	Formed - page 111. (4177)
Coolant	Straight - page 18-32, 34-35. (4175EC, 4178, 4175SC, 4175HT, 4176HD, 4272, 4169A, 4176Y, 4179G, 4169G, 4171, 3137ME, 4685WG, 4684CF, 4686ME, 4684S, 4254, 4284) Small Diameter (Heater Hose) - page 38-42, 74, 77. (4230T, 3270, 4230SB, 3269S, 3230, 4230S, 3231, 3319HT, 3319CA, 4657AM) Hump - page 32-33. (4177W, 4177S) Formed - page 44-53. (4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS, 4256VT, 4261)	Mud Flap	Page 107, 109-111. (7736, 4177W, 4177S, 4177) Page 111. (4177)
Crank Case Vent	Straight - page 58-60, 64, 66. (4219G, 3225ST, 4324, 4219D, 4219BD, 4219M) Formed - page 82, 84-85. (4278, 4278CN, 4278SS)	Nitrile	For low pressure suction, return, or tank hose, see Oil section. For high pressure lines, pilot lines, see Gates Hydraulic Catalog.
Cutters	Page 145-146 (7469)	Nylon	See Gates Industrial Hose Catalog 39496-000 for LP350, LP350X, and LPG Vapor.
DEF (Diesel Emission Fluid)	See SCR.	Oil	Wet exhaust - page 84, 94-96. (4278CN, 3137ME, 4686ME, 4684CF) Fuel - page 66-67. (4219M, 4219N, 4219BM, 3658F)
DEF Heater Hose	See Heater.		Page 154-155.
Diesel	See Fuel Fill, Fuel Line, or Fuel Tank.		See Gates Government Hose Catalog.
DIN 73379	Page 59-60. (3225ST, 4324)		See Splash Guard.
DIN 73411	Page 23, 41. (4272, 3230)		Very common type of rubber in most fuel, oil, and some coolant hoses.

LIST BY KEYWORDS

Oil Cap	Straight Large Diameter - page 24-25, 68, 96. (4169A, 4176Y, 4663K, 4684CF)	SAE J200	Specification for classifying rubber types by their heat and oil resistance.
Oil Cooler	Formed - page 69, 82-85. (4278BD, 4278, 4278CN, 4278OB, 4278SS)	SAE J844	Air Brake Tubing - page 124-125. (4327 NABT) Fuel Tubing - Page 65 (4327DT)
Oil Drain	High Pressure - page 75-79. (3658D, 3658BC, 4657AM, 4657DT, 4657PS, 4657JT, 4657TB)	SAE J1402, J1043,	Air brake hose, page 75, 120-123. (3658D, 3245E, 3245T, 3658C, 4657AB, 3658E, 4657DT, 3276)
	Very High Pressure - See Gates Hydraulic Catalog. Page 144.	SAE J1527	Marine Fuel Hose - page 66-67. (4219M, 4219N, 4219BM, 3658F)
PowerBand™ Belt	Coolant Lines - See Coolant section.	SAE J2006	See Marine, Wet Exhaust.
PowerGrip™ Clamp	Oil Lines - See Oil section.	Scavenge Hose	See Coolant section or see Gates Industrial Hose Catalog Material Handling section or Master-Flex™ Vapor Recovery.
Power Steering	Servicing engine, hydraulic, or other oil systems - see Engine Oil section.	SCR	Heated line with couplings - page 89. (4202) Tank fill/vent - page 88, 124-125. (4217IS, 4256PC, 4327)
Propane	Turbo oil return, see Turbo Oil Drain.	Serpentine Belt	See Micro-V® Belt.
Radiator	See Crank Case Vent.	Silicone	Page 28, 29, 32, 37, 42, 43, 46, 47, 108-109, 111. (4171, 4684S, 4177S, 3230, 3231, 4281, 4040T, 4171H, 4177 Hump / Ring, 4177 (Elbows)) Page 43. (4040T)
Radiator Cap	Return/Reservoir - page 81. (3283SA, 3283LF)	Silicone Tubing	Page 136-138.
Reducer	Supply - page 80. (3317LE, 3317AB)	Sleeve	Page 145.
Return (Hydraulic)	See Gates Industrial Hose Catalog for LP350, LP350X and LPG Vapor.	Splash Guard	Page 145.
	See Coolant. Page 141-142.	Static Strap	Page 145.
	Page 44, 107. (4261, 7736) Also see Formed hose for the specific application.	Suction (Hydraulic)	See Oil.
	Straight - page 58, 60, 74-75, 77. (4219G, 4324, 3319HT, 4219HT)	Thermostat	Pages 139-140.
	Straight Large Diameter - page 24, 25, 68, 78, 122. (4169A, 4176Y, 4663K, 4684CF, 4657DT)	Transmission Oil Cooler	Page 74-75, 77-78. (3319HT, 3319CA, 4219HT, 4319, 4657AM, 4657DT) Also see Oil section.
	Formed - page 82-84. (4278, 4278CN, 4278OB, 4278SS)	Tubing	Plastic - Page 124-125. (4327 (NABT)) Rubber - Page 39, 43. (4040A, 4040T)
	High Pressure - See Gates Hydraulic Catalog.	Turbo	For turbo air inlet, see Air Intake/Inlet. For turbo air outlet, see Charge Air Cooler Turbo vacuum tubing - page 43. (4040T)
SAE 20R1	Coolant hose - page 18-22, 24-29, 41. (4175EC, 4178, 4175SC, 4175HT, 4176HD, 4169A, 4176Y, 4179G, 4169G, 4171, 3269S)	Turbo Oil Drain	Straight, high temperature - page 60 77, 81, 123 (4219D, 4319, 3283LF, 7752). Formed, high temperature - page 85. (4278SS). Also see Oil section.
SAE 20R2	Coolant hose with embedded wire - page 30-32. (4685WG, 4684CF, 4684S)	USCG	See Marine section.
SAE 20R3	Small ID coolant hose.	Vacuum Brake	Page 123. (3276)
	Straight - page 38-42. (4230T, 3270, 4251D, 4230SB, 4230RS, 4230RK, 3230, 4230S, 3231)	Vacuum Tubing	Page 39, 43. (4040A, 4251D, 4040T)
	Formed - page 44, 48-50, 52, 53. (4261/4275, 4280MH, 4280GN, 4276KR, 4256SB, 4256LS)	V-Belt	Page 149-153.
SAE 20R4	Coolant hose.	Water Pump	Page 157.
	Straight - page 23. (4272)	Wet Exhaust	Page 83, 94-96. (4278CN, 3137ME, 4686ME, 4684CF)
	Formed - page 44, 48-53. (4261, 4275, 4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS)	Windshield Wiper Tubing	Page 39. (4040A, 4251D)
SAE 20R5	Coolant hose with wire reinforcement - page 34, 35. (4254, 4284)	Wire Reinforced	Coolant and water, embedded helix - page 30, 32, 35, 95-96. (4685WG, 4684S, 4284, 4686ME, 4684CF)
SAE 30R2	Higher pressure fuel/oil hose - page 61, 84. (3284AC/3284SS, 4278OB)		Inserted helix - page 34. (4254)
SAE 30R5	Wire Reinforced Fuel / Oil Fill hose - page 68. (4663K)		Air - embedded helix - page 100-103. (7768, 4663A, 4663J, 4663G)
SAE 30R6	Fuel/oil vent or fill - page 58, 83. (4219G/4219XL, 4278CN)		External braid - page 123. (7752)
SAE 30R7	Fuel/oil vent or fill - page 58-59, 83. (4219G/4219XL, 3225ST, 4278CN)		Ring reinforced - page 111. (4177)
SAE 30R9	Lower permeation fuel hose - page 60. (4219D)		Fuel / oil - embedded helix - page 68, 95. (4663K, 4686ME)
SAE 30R10	In-Tank / Submersible Fuel - page 65. (4219)		Wire braid - page 67, 75-79. (3658F, 3658D, 3658BC, 4657AM, 4657DT, 4657PS, 4657JT, 4657TB)
SAE 30R14	Low permeation fuel hose with barrier layer - page 61-63. (4219BG, 4219BF)		Brake, air - page 121-122. (3658C, 4657AB, 3658E, 4657DT)
SAE J189	Power steering return line - page 81. (3283SA, 3283LF)		



AMERICAN STANDARDS

ARPM – Association for Rubber Products Manufacturers

ASTM D2000 – Adopted from SAE J200 – (see below)

CARB – Fuel permeation certification for gasoline hose (California Air Resources Board)

DOT FMVSS 106-74 – Brake hose performance testing, labeling, and registration (U.S. Dept. of Transportation, Federal Motor Vehicle Safety Standard)

EPA - Fuel permeation certification for gasoline hose (U.S. Environmental Protection Agency)

NMMA – Marine approval listing (National Marine Manufacturers Association)

SAE J20 – Reinforced hose for engine coolant systems (Society of Automotive Engineers)

SAE 20R1 – Heavy-duty service, standard wall or heavy wall

SAE 20R2 – Heavy-duty service with embedded wire for kink and vacuum resistance

SAE 20R3 – Normal service heater hose (ID under 1 inch)

SAE 20R4 – Normal service radiator hose (larger IDs)

SAE 20R5 – Normal service with embedded wire for high flexibility and vacuum resistance

Class A – High-temperature resistant (e.g. silicone)

Class B – High oil resistant (e.g. nitrile)

Class C – Medium oil resistant (e.g. neoprene)

Class D-1 – Low oil resistant, improved service (e.g. EPDM)

Class D-2 – Low oil resistant, standard service

Class D-3 – Low oil resistant, high-temperature resistant (e.g. p-EPDM)

EC suffix – Electrochemically resistant rubber (see the ECR info box on page 10)

HT suffix – High temperature resistant rubber (>125 °C)

SAE J20-1 and J20-2 are supplements to SAE J20 for hoses for government use, replacing part of MS51008 and ZZ-H-428.

SAE J30 – Reinforced hose for fuel and oil

SAE 30R2 – Higher pressure than 30R7 usually used for oil up to 100 °C

SAE 30R5 – Wire helix embedded fuel fill hose

SAE 30R6 – Low pressure, to 100 °C

SAE 30R7 – Low pressure, to 125 °C

SAE 30R9 – Fuel injection pressures, to 135 °C

SAE 30R10 – Only used for in-tank or submerged in fuel

SAE 30R13 – Biodiesel resistant

SAE 30R14 – Low permeation to fuel

SAE J189 – Reinforced hose for power steering return (low pressure)

SAE J200 – Classification of rubber materials (typically used for unreinforced hose)

Suffix requirements further define properties and material testing

Does not define tolerances or performance requirements for hoses

M3BC 707 – Temperature resistant to 100 °C with medium oil resistant (i.e. neoprene)

M3CA 707 – Temperature resistant to 125 °C with no oil resistant requirement (i.e. EPDM)

M3CE 810 or M5DE – 150 °C with good oil resistance (i.e. CPE)

M2GE 705 – 225 °C with good oil resistance (i.e. silicone)

M2HK 710 – 250 °C with high oil resistance (i.e. FKM)

SAE J517 – Hydraulic hose 100R1 through 100R19

100R5 – Steel wire reinforced, textile cover

100R6 – Fiber reinforced, rubber cover

SAE J844 – Nylon brake tubing. Type A = non-reinforced. Type B = with reinforcement

SAE J942 and 1037 – Windshield washer fluid tubing

SAE J1402 – Air brake hose. Type A = fiber reinforced, rubber cover

SAE J1403 – Vacuum brake hose. VH = heavy wall. VL = light wall

SAE J1405 – Optional impulse and high temperature circulation test for hydraulic assemblies

SAE J1527 – Marine fuel hose. Type A = fire tested. Style R1 = yarn reinforced w/o wire or helix

SAE J1532 – Transmission oil cooler (TOC) hose. Type B = 4.1MPa burst pressure. Class 1 = 125 °C

SAE J2050 – High temperature power steering pressure line hose

SAE J2076 – High temperature power steering return line hose

SAE J2260 – Plastic fuel tubing

EUROPEAN STANDARDS

- BS EN 854** – Hydraulic hose, textile reinforced (British spec)
GB/T 18948 – Coolant hose for cars and light commercial vehicles (Chinese Spec)
DIN 73379 – Fuel hose (German spec)
DIN 73411 – Reinforced hose for engine coolant systems (German spec)
 Class A – EPDM to 125°C
 Class B – peroxide cured EPDM to 135°C
 Class C – silicone to 175°C
ISO 4639 – Fuel hose (obsolete)
ISO 19013 – Fuel hose. -1 = diesel fuel, -2 = gasoline

COMPANY STANDARDS

- AGCO CMS M1620** – SAE 20R3 and 20R4, and J200 BA 707 with added requirements
Bobcat MS77 – SAE 20R4, 30R6, 30R7, and J200 3CA 707 with added requirements
CNH FZG-5754 – SAE J200 M3CA 707 with added requirements
Caterpillar 1E0515 – SAE 20R3. 1E0515A = 20R3 D1, 1E0515B = 20R3 EC D1, 1E0515C = 20R3 Class B tube/Class C cover, 1E0515D = 20R3 D3, 1E0515E = 20R3 Class A
Caterpillar 1E0584 – SAE 20R4. 1E0584A = 20R4 D1, 1E0584B = 20R4 EC D1, 1E0584C = 20R4 Class B tube/Class C cover, 1E0584D = 20R4 D3, 1E0584E = 20R4 Class A
Caterpillar 1E1543D – SAE 30R2 through 30R9 as shown on the print
Caterpillar 1E2815A – Neoprene rubber similar to SAE J200 M3BC 707 with added requirements
Caterpillar 1E2815B – EPDM rubber similar to SAE J200 M3CA 707 with added requirements
Caterpillar 1E2815C – Silicone rubber similar to SAE J200 M5GE 606 E036 F19 G11
Caterpillar 1E2815D – Same as 1E2815C with tube liner similar to SAE J200 M2HK 707 B37 EF31
Caterpillar 1E4353 – SAE 20R1 standard wall. 1E4353A = 20R1 D1, 1E4353B = 20R1 EC D1, 1E4353C = 20R1 Class B tube/Class C cover, 1E4353D = 20R1 D3, 1E4353E = 20R1 Class A
Caterpillar 1E4355 – SAE 20R1 standard wall. 1E4355A = 20R1 D1 or D2, 1E4355B = 20R1 EC D1 or D2, 1E4355C = 20R1 Class B tube/Class C cover, 1E4355D = 20R1 D3, 1E4355E = 20R1 Class A
Cummins 25001 – SAE 20R1 Class B tube/Class C cover with added requirements
Cummins 25003 – SAE 20R4 Class A with added requirements
Deere DTW1223 – SAE 20R3 and 20R4 with added requirements
Deere JDS G253 – Biodiesel compatibility of hose and fittings
Freightliner 48-25121 – SAE 20R1 EC D1
Freightliner 48-25122 – SAE 20R3 EC D1 with aramid reinforcement
Freightliner 48-25951 – Gates Blue Stripe™ material SAE 20R4 EC D1 with added requirements
Nacco HCE-59 – SAE 20R1 D1 or D2, heavy wall
Nacco HCE-103 – SAE 30R7
Nacco HCE-129 Class 5 – EPDM rubber SAE J200 M3CA 707 A25 B35 F17 with added requirements
Nacco HCE-129 Class 6 – Neoprene rubber SAE J200 M3BC 710 E014 E034 F17 with added requirements
Nacco HCE-137 Class 1 – SAE 20R3 or R4 Class D1
Nacco HCE-137 Class 2 – SAE 20R3 or R4 Class D2
Nacco HCE-137 Class 3 – SAE 20R3 or R4 Class D3
Navistar MPAPS F30 Grade 1B – SAE 20R4 EC Class D1 with added requirements
Navistar TMS-6034 Grade CB – SAE 20R4 with added requirements, for charge air applications
Volvo TR20994097 – peroxide cured EPDM hose specification for coolant applications

Please see the Keyword Index pages 156 - 157 for Gates hose types to meet these specifications.

