

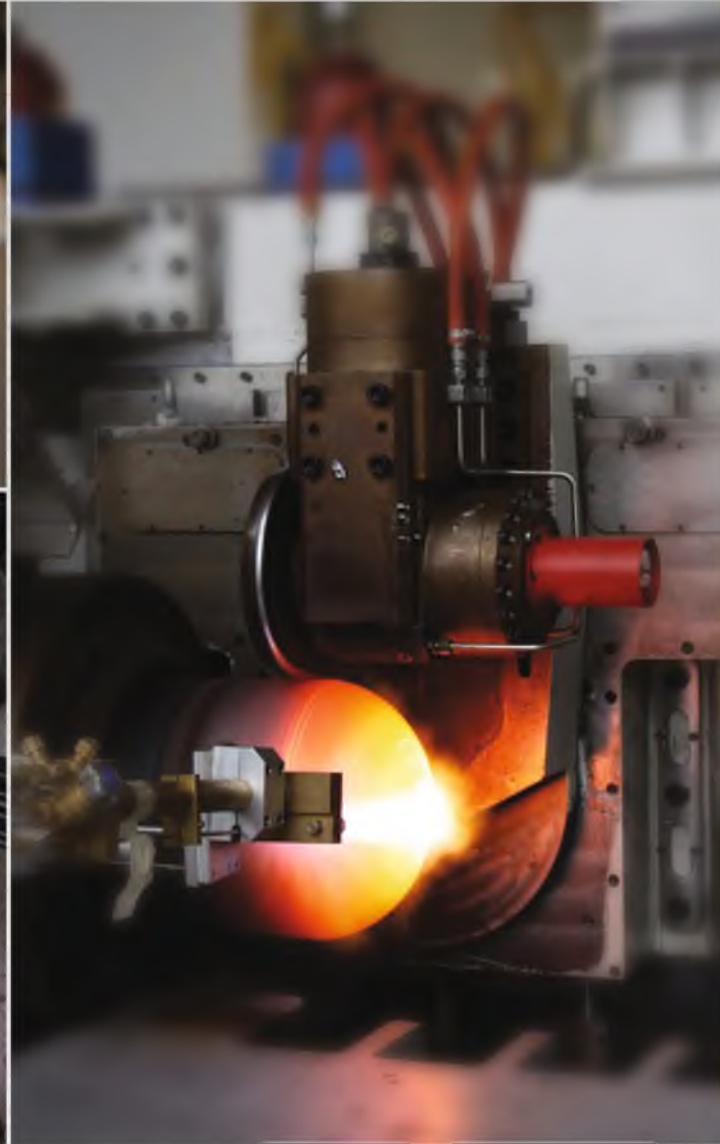


RAMA CYLINDERS

ISO 9001
ISO 14001
OHSAS 18001
BUREAU VERITAS
Certification



ISO/TS 16949:2009
-Third edition
BUREAU VERITAS
Certification



ON BOARD CNG

CNG CASCADES

BIO GAS CASCADES

FOR TWO WHEELER

INDUSTRIAL GASES

FIRE FIGHTING

MEDICAL GASES

BEVERAGES

SCUBA DIVING

ACCUMULATORS

**MANUFACTURER OF
HIGH PRESSURE SEAMLESS STEEL
GAS CYLINDERS**

www.ramacylinders.in

THE COMPANY

Rama Cylinders is a quality manufacturer of CNG, industrial, fire fighting cylinders and cascades of various capacities. Rama Cylinders is an ISO 9001, ISO 14001 & OHSAS 18001 certified company having two plants in Gujarat. The first is located at Bhimasar-Gandhidham & the second plant is at SEZ-Kandla.

The plants are of world-class standard and have a current installed capacity of manufacturing 4,80,000 high pressure seamless steel gas cylinders per annum.

The technology applied to produce the cylinders is hot spinning of seamless steel pipes by Computerized Numerically Controlled (CNC) machines for closing both ends and subsequently followed by other finishing processes.

The cylinders are manufactured as per IS 7285 (Part 1 & part 2), IS : 15490 in compliance with the norms of statutory authorities like Chief Controller Of Explosives (CCOE) & Bureau Of Indian Standards (BIS) with "[ISI]" mark in India. Rama Cylinders also manufactures as per international manufacturing standards like ISO 11439, NZ S 5454, ISO 9809-1, EN 1964-1 & ECE R110 (with / markings certification). Also Pi I CE marking showing compliance with TPED/PED.

QUALITY POLICY

We at Rama Cylinders are committed to the safety and satisfaction of our customers by understanding their requirements and to supply them with world class quality products through continuous innovation”



MANUFACTURING STANDARDS

ECE-R: 110
NZS: 5454
ISO: 11439
ISO: 9809-1
PED 97/23/EC
(CE-Marking)

EN: 1964-1
IS: 7285 (Part 1)
IS: 7285 (Part 2)
IS: 15490
2010/35/EU TPED
(Pi-Marking)

PRODUCT APPLICATIONS

On Board CNG
CNG cascades
Industrial gases
Fire fighting
Medical gases

Beverages
Scuba diving
Accumulators

PRODUCTS & APPLICATIONS



ON BOARD CNG



CNG & BIO GAS CASCADE



INDUSTRIAL GASES



MEDICAL GASES



THREE WHEELER KIT



FIRE FIGHTING



RAILWAY CASCADE



FOR TWO WHEELER

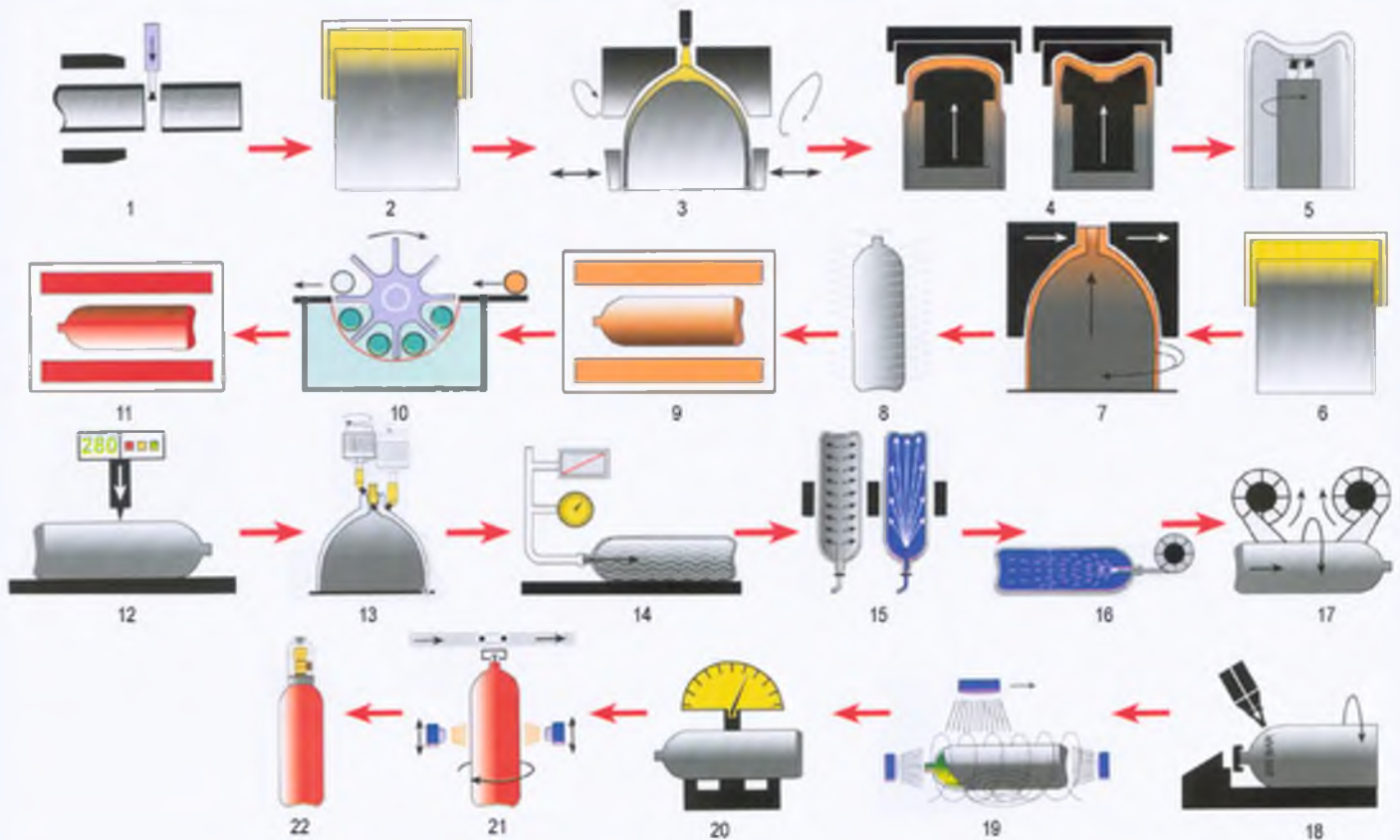
Rama Cylinders manufactures high pressure seamless steel gas cylinders as per national and International standards to specific customer requirements having the following range of sizes:

	Min	Max
Outside Diameter (mm)	76	406
Length of Cylinder (mm)	400	2200
Working Pressure (bar)	-	400
Water Capacity (Ltr.)	2	240

GLOBAL SUPPLY

- Germany
- Spain
- Italy
- Chile
- Brazil
- Bolivia
- Armenia
- Iran
- UAE
- Bahrain
- Saudi Arabia
- Malaysia
- Thailand
- Sri Lanka
- Pakistan
- Bangladesh
- Myanmar
- Algeria
- Egypt
- Rwanda
- Malawi

MANUFACTURING PROCESS



1	Tube Cutting	7	Neck Forming	13	Neck drilling and machining	19	Ultrasonic Testing
2	End Heating	8	Check for wall thickness and defects	14	Hydraulic test	20	Tare weight Measurement
3	Bottom closing	9	Hardening	15	Washing and drying	21	Painting
4	Bottom Shaping	10	Oil quenching	16	Internal shot blasting	22	Assembling of accessories
5	Bottom Machining	11	Tempering	17	External shot blasting		
6	End Heating	12	Hardness check	18	Data Stamping		

RAW MATERIAL :

The cylinders are manufactured from Seamless Steel Tubes of superior quality steel, passed through necessary tests and controls having required metallurgical properties made from various grades (i.e. Manganese Steel, Chrome - Moly Steel).

MANUFACTURING PROCESS:

The seamless steel cylinders are manufactured by closing bottom & neck forming on CNC hot spinning machine and subjected to all internal tests & controls at every stage of production to assure a quality product with cylinders diameters ranging from 76 to 406mm. Accessories such as valve fixing, neck ring, cap and guard are fitted on cylinders as per customer's requirement. The plant is equipped with most modern machineries from reputed Indian & International suppliers to produce superior quality products. The entire production process / testing is controlled by RCPL and done in-house in our own dedicated plant. This ensures that RCPL is capable of offering the right quality cylinder at right price that fits most of the needs of customers.

INSPECTION & TEST:

Following inspection and testing activities are carried as per Indian & International standards' requirements :
 Dimensional & visual inspection of raw seamless steel tubes , monitoring of bottom & neck forming temperatures, heat-treatment parameters monitoring & recording, hardness after heat treatment, mechanical properties - tensile strength, yield strength, % elongation & impact strength etc, Sulfide stress cracking Test, pressure cyclic & burst testing, bonfire test, bullet penetration test, inspection of machining parameters, water capacity checking, hydrostatic stretch test , air leakage test, ultrasonic testing , tare weight & data cross checking before despatch.

INTERNATIONAL CERTIFICATIONS



ISO 9001:2015, ISO 14001:2015 & BS OHSAS 18001:2007



ISO/TS16949:2009



ISO/TS16949:2009



TEST CERTIFICATE NZS 5454:1989 from Power Tech, Canada



EC TYPE - EXAMINATION TPED, Pi-Mark CERTIFICATE



TYPE APPROVAL CERTIFICATE as per ISO 11439



ECE R110, CNG1, E-Mark, Approval from VCA, UK



IBA CERTIFICATE

CYLINDERS FOR COMPRESSED INDUSTRIAL GASES

Max Working Pressure	Test Pressure	Water Capacity	Gas Capacity	Outside Dia 'D' (mm)	Length 'L'	Tare Weight
Pr.at 15 C(kgf/cm)	(kg/cm)	(Ltr.)	(cu.m.) Approx		Approx. (Mm)	Approx
150	250	0.5	0.075	76	225	1.6
		1.0	0.15		355	2.5
		1.5	0.225		490	3.4
		2.0	0.3		630	4.3
		2.5	0.375		765	5.2
150	250	1.5	1.225	108	280	3.0
		2.0	0.3		345	3.7
		2.5	0.375		405	4.5
		3.0	0.45		470	5.3
		3.5	0.525		6.0	535
		4.0	0.6		600	6.8
		4.5	0.675		660	7.5
		5.0	0.75		725	8.3
		4.5	0.675		435	8.3
		4.8	0.72		460	8.6
150	250	5.0	0.75	139.7	475	8.8
		5.5	0.825		510	9.5
		6.0	0.9		550	10.1
		6.8	1.02		610	11.1
		7.5	1.125		660	11.9
		8.0	1.2		700	12.5
		9.0	1.35		775	13.7
		10.2	1.53		865	15.2
		13.5	2.025		1115	19.2
		14.0	2.1		1150	19.8
200	334	6.0	1.2	139.7	550	10.1
		6.8	1.36		610	11.1
200	300	4.0	0.8	140	370	5.5
		5.0	1.0		450	6.5
		5.5	1.1		485	7.0
		6.0	1.2		515	7.5
		7.0	1.4		590	8.0
150	250	10.0	2.0	165	805	10.5
		10.2	1.53		655	16.8
		13.5	2.03		835	21.0
		14.0	2.1		865	21.5
		15.0	2.25		920	22.7
200	300	20.0	3	178	1190	28.0
		7.0	1.4		410	9.0
		8.0	1.6		450	10.0
		9.0	1.8		495	10.8
		10.0	2.0		540	11.8
200	300	12.0	2.4	204	625	13.5
		13.4	2.7		585	18.0
		15.0	3.0		635	19.0
		20.0	4.0		795	23.0
		25.0	5.0		965	28.0
200	300	35.0	7.0	204	1305	36.0
		40.0	8.0		1480	41.0

Max Working Pressure	Test Pressure	Water Capacity	Gas Capacity	Outside Dia 'D' (mm)	Length 'L'	Tare Weight
Pr.at 15 C(kgf/cm)	(kg/cm)	(Ltr.)	(cu.m.) Approx		Approx. (Mm)	Approx
200	300	30.0	6	229	935	36.0
		40.0	8		1210	45.0
150	250	50.0	10	232	1500	54.0
		22.0	3.3		705	29.0
200	334	24.0	3.6	232	755	32.0
		27.0	4.05		835	35.0
		34.0	5.1		1025	42.0
		40.0	6		1185	46.0
		40.5	6.07		1195	48.5
		45.0	6.75		1315	50.0
		46.7	7		1360	51.0
		50.0	7.5		1450	56.0
		54.0	8.1		1555	59.0
		60.0	9		1715	64.0
200	334	20.0	4	232	660	25.0
		50.0	10		1410	55.0
		54.0	10.8		1560	59.0
		30.0	12		1025	72.0
		35.0	14		1170	82.0
400	667	40.0	16	232	1315	91.0
		50.0	20		1605	109.0
		55.0	22		1750	118.0
		60.0	24		1900	127.0
		65.0	26		2045	136.0
150	250	70.0	28	267	2190	145.0
		34.0	5.1		825	45.0
		40.0	6		925	51.0
		45.0	6.75		1045	55.0
		50.0	7.5		1145	60.0
200	334	56.0	8.4	267	1145	65.0
		60.0	9		1345	69.0
		68.0	10.2		1510	77.0
		80.0	12		1730	86.0
		50.0	10		1140	60.0
200	334	68.0	13.6	267	1510	75.0
		80.0	16		1730	85.0
255	435	35.0	8.75	267	865	53.0
		40.0	10		970	58.0
		50.0	12.5		1175	68.0
		60.0	15		1380	80.0
		70.0	17.5		1585	91.0
200	334	75.0	18.75	356	1680	96.0
		80.0	20		1785	101.0
		100.0	20		1310	115.0
		120.0	24		1530	130.0
		140.0	28		1755	145.0
200	334	145.0	29	356	1760	135.0

* Other sizes can be made on request

CYLINDERS FOR ON-BOARD CNG

(Working Pressure 200 Bar)

Nominal Water Capacity ltr.	Gas Capacity Cu.m. (Approx)	Dia. 'D' mm	Length 'L' mm (Approx)	Weight Appr. (kg.)
4.8	0.9	139.7	455	8.6
20	5	232	650	25
22	5.4	232	700	28
25	6.3	232	780	32
28	7	232	860	34
30	7.5	232	910	37
50	12.5	232	1450	54
30	7.5	267	725	36
35	8.75	267	825	40
40	10	267	925	44
45	11.25	267	1025	49
50	12.5	267	1125	53
60	15	267	1325	62
75	18.8	267	1625	77
80	20	267	1720	81
100	25	267	2120	97
45	11.3	317	770	49
50	12.5	317	840	52
55	13.8	317	910	57
60	15	317	980	61
65	16.3	317	1050	64
70	17.5	317	1120	69
75	18.8	317	1190	72
80	20	317	1260	76
90	22.5	317	1400	84
100	25	317	1500	92
57	14.3	356	790	64
60	15	356	815	66
62	15.5	356	840	67
63	15.75	356	850	68
65	16.3	356	870	69
70	17.5	356	925	76
75	18.8	356	980	80
77	19.3	356	1010	82
78	19.5	356	1020	83
80	20	356	1035	84
82	20.5	356	1070	86
85	22.5	356	1105	89
90	22.25	356	1145	91
100	25	356	1255	99
110	27.5	356	1380	108
113	28.3	356	1400	108
135	33.75	356	1655	127
150	37.5	356	1820	135
70	17.5	406	760	86
90	22.25	406	930	102
100	25	406	1015	110
110	27.5	406	1100	118
120	30	406	1180	126
140	35	406	1340	141
198	49.5	406	1820	182
200	50	406	1845	185

For size in 559 mm and 610 mm diameter, information available on request

FABRICATED CNG CASCADES

Cylinder Size 267 mm 75 ltrs x 1710 mm

Cascade Working Pressure

Domestic 260 kg.f/cm² (255 bar) & Export: 25 Mpa (250 bar)

Cascade Storage Capacity (ltr.)	No. of Cylinders per Cascade (Nos.)	Cascade Dimensions in mm			Cascade Weight (Ton) Approx.
		L	W	H	
900	12	1615	1850	1135	2
1200	16	1615	1850	1450	2.3
1500	20	1985	1850	1450	2.9
2025	27	2595	1850	1450	4.1
2250	30	2900	1850	1450	4.4
3000	40	3515	1850	1450	5.8
4500	60	5085	1850	1565	8.5

CYLINDERS FOR STORAGE CASCADES

Working pressure Domestic : 260 kg-f/cm² (255 bar) & Export : 25MPa (250 bar)

Nominal Water Capacity ltr.	Gas Capacity Cu.m. (Approx)	Diameter mm	Length 'L' mm (Approx)	Weight Appr. (kg.)
50	15.5	267	1190	78
75	23.5	267	1710	107
80	25.0	267	1810	113
100	31.0	267	2220	137



* Other sizes can be made on request



THREE WHEELER KIT

WORLD CLASS GAS CONVERSION KIT "CREATING A GREENER WORLD"

World's first & Only Company to manufacture / Market "Complete kit with cylinder" Type Approved by ICAT, Govt. of India

RCL VACUUM CNG KIT.

Product Profile

UNIQUE FEATURES

VACUUM KIT

- Smart & Compact Design
- Highest Mileage, Higher Profits
- Truly Eco-Friendly
- Damp Proof body
- Magneto-pneumatic Functioning System
- Light Weight and Non-corrosive material
- Dual fuel mode (petrol / cng).
- Excellent Power Performance
- Longer Spark-plug life & increased engine life
- Least maintenance
- Competitively priced.



HIGHLIGHTS

INSTANT START ON GAS

- Half kick start so no traffic jam

INSTANT START ON GAS

- Can be operated without battery and wiring
- Easy operation and installation

FULL PROOF LUBRICATION TECHNOLOGY

- No blockage of engine
- Faster and smoother pick-up
- Smooth running
- Oil consumption as per actual requirement

STATE OF ART MANUFACTURING & R & D

- Continuous improvement based on Customer and market feedback.
- High flexibility and quickness in replying to customers requirements.
- Continuous heavy investments in technologies.

CERTIFICATIONS.

- ICAT, ISO, T.C. & RTO.

MARKETING AND SERVICE BACK UP

- The best and excellent. Professional with personal touch.
- Spares available in abundance/everywhere (Garage/ Retrofitment Center etc.)

MAINTENANCE

Get your vehicle inspected and serviced periodically at the nearest RCL authorized Service Center.

INSTALLATION

Installation of the kit can be done at authorized RCL sales and service center, as per rules & regulations.

RCL KITS AVAILABLE FOR

Bajaj Three Wheeler.

COMPARATIVE STUDY (CNG) (RCL'S INTERNAL RECORD I OBTAINED FROM MULTIBRAND A.I)

Sr. No	AVERAGE PERFORMING KITS/EXISTING KITS	RCL VACUUM CNG KIT
1	STARTING Problem: Starts in 3-5 kicks. Problems in winter, rainy Seasons and morning, rather half kick start.	No problem. 1st kick start, rather half kick start. No problems in winter, rainy seasons & morning.
2	AVERAGE 34 - 45 km/k.g. of CNG.	25 % more* than than competitor's CNG KIT
3	PICKUP Below average to average (Power Drop)	Superb (No Power Drop).



CYLINDERS FOR FIRE FIGHTING, BEVERAGES & NITROUS OXIDE APPLICATION

filling Ratio (kg/ltr.)	Test Pressure (kgf/cm ²)	Water Capacity (Ltr.)	Gas Capacity		Outside Dia 'D' (mm)	Length 'L' Approx. (Mm)	Tare Weight Approx. (Kg.)
			Kg.	Ltr.			
0.667	250	185	0.5	0.33	185	225	1.6
			1.0	0.67	370	355	2.5
			1.5	1.00	555	490	3.4
			2.0	1.33	740	630	4.3
			2.5	1.67	925	765	5.2
			1.5	1.00	555	280	3
			2.0	1.33	740	345	3.7
			2.5	1.67	925	405	4.5
			3.0	2.00	1,111	470	5.3
			3.5	2.33	1,269	535	6
			4.0	2.67	1,481	600	6.8
			4.5	3.00	1,666	660	7.5
			5.0	3.34	1,851	725	8.3
			4.5	3.00	1,666	435	8.3
			4.8	3.20	1,777	460	8.6
5.0	3.34	1,851	475	8.8			
5.5	3.67	2,036	510	9.5			
6.0	4.00	2,221	550	10.1			
6.8	4.45	2,517	610	11.1			
7.5	5.00	2,776	660	11.9			
8.0	5.34	2,961	700	12.5			
9.0	6.00	3,332	775	13.7			
10.2	6.80	3,776	865	15.2			
13.5	9.00	4,997	1115	19.2			
14.0	9.34	5,183	1150	19.8			
15.0	10.01	5,553	1225	21			
10.5	6.80	3,776	655	16.8			
13.5	9.00	4,997	835	21			
14.0	9.34	5,183	865	21.5			
15.0	10.01	5,553	920	22.7			
20.0	13.34	7,404	1190	28			
22.0	14.67	8,144	705	29			
24.0	16.01	8,884	755	32			
27.0	18.01	9,995	835	35			
34.0	22.68	12,586	1025	42			
40.0	26.68	14,807	1185	47			
40.5	27.01	14,992	1195	48.5			
45.0	30.02	16,658	1315	52			
46.7	31.15	17,288	1360	53			
50.0	33.35	18,509	1450	56			
54.0	36.02	19,990	1555	59			
60.0	40.02	22,211	1715	64			
34.0	22.68	12,586	825	46			
40.0	26.68	14,807	945	52			
45.0	30.02	16,658	1045	56			
50.0	33.35	18,509	1145	61			
56.0	37.35	20,730	1265	66			
60.0	40.02	22,211	1345	70			
68.0	45.36	25,173	1510	77			
80.0	53.36	29,615	1730	88			

* Other sizes can be made on request



PLANT 1: GANDHIDHAM, GUJARAT, INDIA



PLANT 2: KANDLA SEZ, GUJARAT, INDIA

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