

# Engine Valves



AVR (Vikram) Valves offers the most complete range of high-quality and performance Engine Valves in the industry. Engine Valve - a very critical part of the engine - performs in an environment of intensely harsh conditions where it is subjected to severe vibration, high temperatures, and destructive friction. In order to withstand these conditions for years, the engine valve must be made from carefully formulated, high-quality materials. Our engineering knowledge and experience in the field of internal combustion Engine Valves enables us to provide customers with a proper valve that features the necessary qualities that are required in order to perform at the anticipated efficiency, durability and lifespan.

AVR (Vikram) Valves offers high performance Engine Valves based on OEM specifications or as per custom specifications to suite customer needs. We produce Engine Valves for OEM and the Aftermarket — always according to the same strict quality standards. Today we employ state-of-the-art production technologies to manufacture more than **3500 types of Intake and Exhaust Engine Valves** from a wide range of materials for most demanding applications. Our product range includes Engine Valves of diverse designs and types for various applications with **Stem Diameters from 4 to 25 mm** and **Valve Lengths from 60 to 400 mm**. With regard to their applications, our high performance Engine Valves are induction hardened, chrome-plated, or nitrided according to the requirements. A wide range of standard materials as well as specialty materials are available for custom requirements.

## TECHNOLOGY & ADVANTAGE

- The "Vikram" lightweight Engine Valves offer better engine performance, improved fuel efficiency and meet changing emission norms.
- Withstand high peak firing pressure because of Flat Seat Valves for Heavy Duty Diesel Engines.
- Improved fatigue and corrosion resistance due to higher case depth of Nitride Valves.
- All our Valves are duly Heat Treated there by increasing toughness & wear resistance on Stem & Seating areas.
- Valves have Hardened Tappet End to sustain Excess Cyclic Load from Overhead Cams.

- Valves are made from OE specifications containing Martensitic & Austenitic Steel having High Creep Strength.
- All Valves undergo 100% inspection for critical characteristics and achieve Cp and Cpk values.
- Valves undergo 100% crack detection.
- All Complaint parameters cover with Firewall Control.

## TECHNICAL SPECIFICATIONS

### Materials

- Martensitic Steels
- Austenitic Steels
- Super Alloys - Inconel Steel, Nimonic Steel
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### Engine Valve Types & Features

- Mono-Metal Valves
- Bi-Metal Valves
- Seat Stellite
- Tip & Seat Induction Hardening
- Stainless Steels with or without Tufftriding
- Hard Chrome/Nitrided Stem
- Profile & Through Hardened Grooves

### Size Range

- Valve Stem Diameter: 4 to 16 mm
- Valve Head Diameter: 20 to 70 mm
- Valve Length: 50 to 300 mm
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## Material Specifications

	SAE	BS	JS	Wr. No.	C	Si	Mn	Ni	Cr	Mo	N	
INTAKE & LIGHT DUTY EXHAUST	SIL1	EN 52	SUH 1	1,4718	0.40-0.50	3.00-3.50	0.60-MAX	0.60-MAX	7.50-9.50	--	--	
	--	--	SUH 3	--	0.35-0.45	1.80-2.50	0.60-MAX	0.60-MAX	10.00-12.00	0.70-1.30	--	
	--	--	SUH 11	--	0.45-0.55	1.00-2.00	0.60-MAX	0.60-MAX	7.50-9.50	--	--	
EXHAUST	EV-12	12-2 N	--	14,875	0.50-0.60	0.08-0.25	7.00-9.50	1.50-2.75	19.25-21.50	--	0.20-0.40	
	EV-8	21-4 N	SUH 35	14,871	0.48-0.58	0.35 MAX	8.00-10.00	3.25-4.50	20.0-22.50	--	0.35-0.50	
	EV-15	23-8 N	--	--	0.28-0.38	0.50-1.00	1.50-3.50	7.00-9.50	22.00-24.00	--	0.25-0.40	
	EV-4	21-12 N	SUH 37	--	0.15-0.25	1.00 MAX	1.00-1.60	10.00-12.00	20.50-22.50	--	0.15-0.35	
	INCONEL-751					0.10 MAX	0.50 MAX	1.00 MAX	BAL	14.0-17.0	Ti/AL 2.2/1.0	FE 7.0
	NIMONIC-80A					0.10 MAX	1.00 MAX	1.00 MAX	BAL	18.0-21.0	Ti/AL 2.0/1.5	FE/CO 5.0/2.0 MAX MAX

## Hard Facing Alloys

	C	CR	W	FE	CO	
STELLITE #1	2.5	30.0	12.0	3.0 MAX	BAL	HRC- 50/54
STELLITE #6	1.00	28.0	4.0	3.0 MAX	BAL	HRC- 40/44
STELLITE #12	1.35	29.0	8.0	2.0 MAX	BAL	HRC- 45/47

