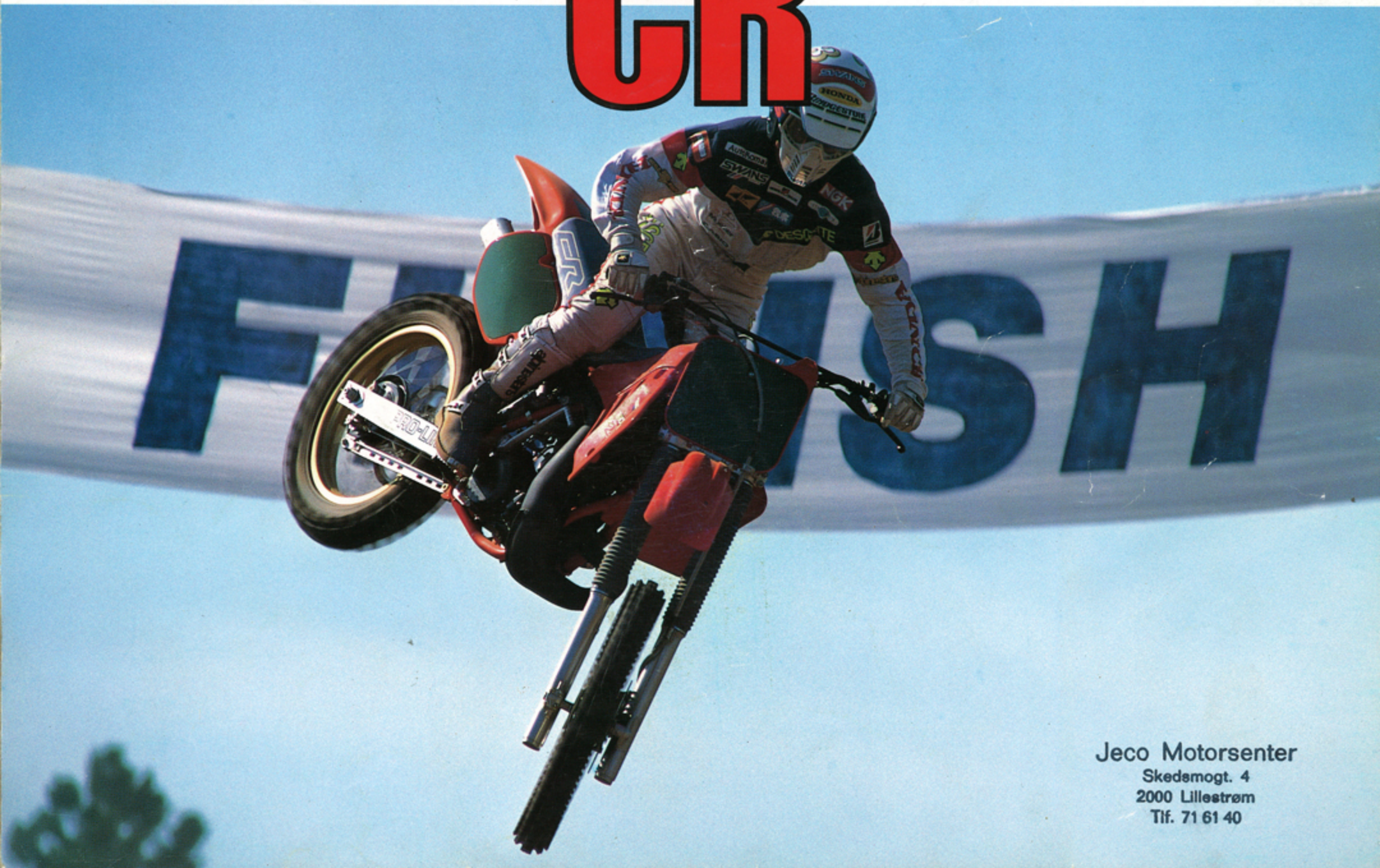
HONDA®
WORLD'S LARGEST MOTORCYCLE MANUFACTURER

# CR

## 500R/250R/125R/80RII/80R



# The Choice of Champions

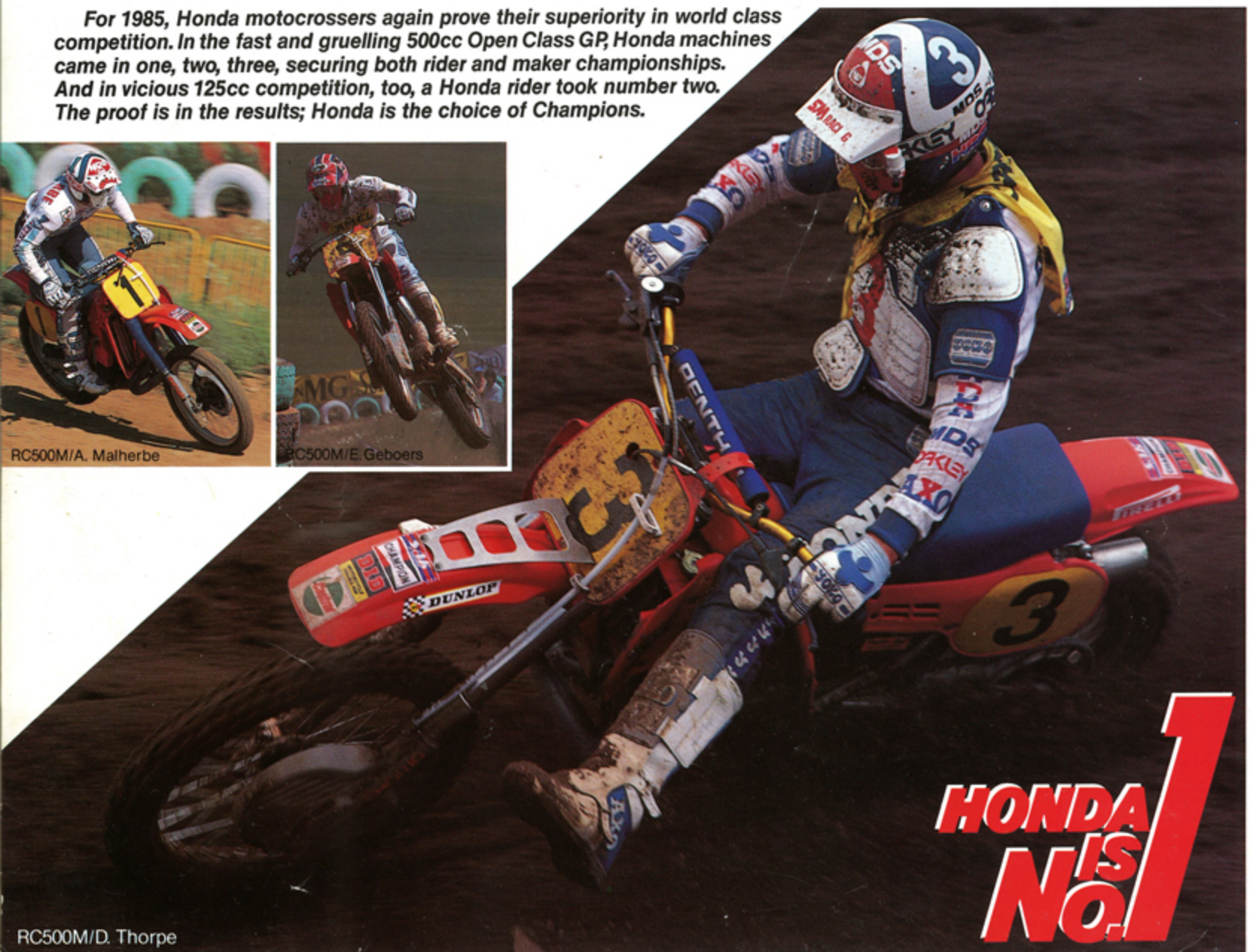
*For 1985, Honda motocrossers again prove their superiority in world class competition. In the fast and gruelling 500cc Open Class GP, Honda machines came in one, two, three, securing both rider and maker championships. And in vicious 125cc competition, too, a Honda rider took number two. The proof is in the results; Honda is the choice of Champions.*



RC500M/A. Malherbe



RC500M/E. Geboers

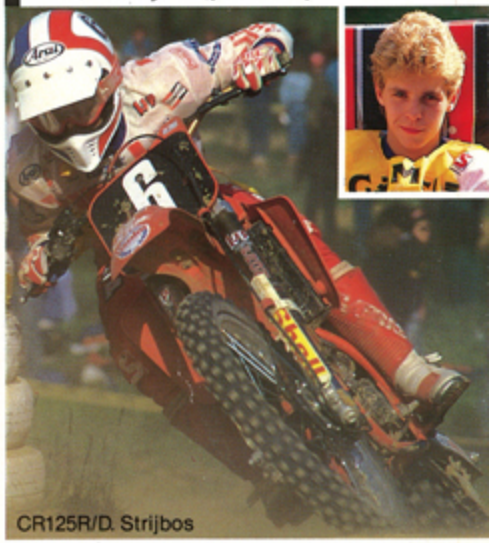



RC500M/D. Thorpe

## Honda Dominates

**1985 FIM World Motocross 500cc**
**Maker & Rider Champion**
**1st D. Thorpe**
**2nd A. Malherbe**
**3rd E. Geboers**

**1985 FIM World Motocross 125cc**
**2nd D. Strijbos (CR125R)**



CR125R/D. Strijbos

# CR500R

**Open class machines have many roles — desert racer, motocrosser, serious play bike. But just one performs them all as a champion; the CR500R.**

**Features**

**Engine** ●Light, liquid cooled 2-stroke engine with PJ type carburetor for optimum performance ●New piston profile for more accurate operation ●Hollow crank webs for optimum flywheel mass and primary compression ●Exhaust port with center pillar extends ring life ●Larger aircleaner element for improved intake efficiency ●Compact CDI with electronic advance for reduced weight ●Stronger transmission with better shift feeling ●Reconsidered ignition characteristics give improved starting

**Chassis** ●Compression/rebound adjustable Pro-Link with new Pro-Link ratio, needle roller pivots and tapered aluminium swingarm ●Large 43mm front fork with 300mm of travel and newly adopted Travel Control Valve for smooth, progressive damping ●Aluminium steering stem, brake torque arm, Pro-Link arm and connecting rod, shift lever, and muffler reduce weight ●Hydraulic front disc brake with dual-piston caliper, sintered metal pads and braided steel hose ●Bolt on rear sub-frame for easy maintenance ●Stronger, harder rear sprocket for increased durability ●Redesigned fuel tank, radiator shroud, and seat permit a narrower riding position ●Attractive styling and new gold anodized rims

# CR125R

**In no motocross racing is the competition more intense than in the 125 class. Merely competing requires a near perfect balance of power, handling, and dependability. Winning requires something more. Like a Honda CR125R.**

**Features**

**Engine** ●Liquid cooled 2-stroke engine with new, lightweight ATAC for improved response and optimum power at all rpm ●New smaller, lighter cylinder ●Single piston ring adopted to reduce friction loss ●Lightweight crankshaft for reduced weight ●PJ type carburetor for better throttle response ●New kickstarter ratchet and idler gear reduce engine weight ●Larger aircleaner element for improved intake efficiency ●Lightweight aluminium radiator

**Chassis** ●Compression/rebound adjustable Pro-Link with new Pro-Link ratio, larger reservoir tank, needle roller pivots and tapered aluminium swingarm ●Large 43mm front fork with 300mm of travel and newly adopted Travel Control Valve for smooth, progressive damping ●Aluminium steering stem, brake torque arm, Pro-Link arm and connecting rod, shift lever, and muffler reduce weight ●Hydraulic front disc brake with dual-piston caliper, sintered metal pads and braided steel hose ●Bolt on rear sub-frame for easy maintenance ●Attractive new styling with new gold anodized wheel rims

# CR250R

**Honda RC works machines are once again faithfully reproduced in the CR250R. With less weight, more power, and better suspension than ever before.**

**Features**

**Engine** ●Liquid cooled 2-stroke engine with the Honda Power Port for optimum power at all rpm ●New Nickel-Silicon-Carbide plated cylinder reduces friction loss for maximum performance ●PJ type carburetor and redesigned reed valve for better throttle response ●Redesigned exhaust chamber for improved power characteristics ●New shift spindle, kickstarter ratchet and idler gear, reed valve stop, and clutch reduce engine weight ●Larger aircleaner element for improved intake efficiency ●Compact CDI with electronic advance for reduced weight

**Chassis** ●Compression/rebound adjustable Pro-Link with new Pro-Link ratio, needle roller pivots and tapered aluminium swingarm ●Large 43mm front fork with 305mm of travel and cartridge-type dampers for smooth, progressive damping ●New rigid semi-double cradle frame ●Aluminium steering stem, brake torque arm, Pro-Link arm and connecting rod, shift lever, and muffler reduce weight ●Hydraulic front disc brake with new lightweight dual-piston caliper, sintered metal pads and braided steel hose ●Bolt on rear frame rails for easy maintenance ●Stronger, harder rear sprocket for increased durability

# CR80RII/80R

**Nor does Motocross excitement stop with the small bores. And with Honda you've got a choice. The gutsy 80R with a host of new features or the proven 80RII with its full sized frame.**

**Features**

**Engine** ●High performance liquid cooled 2-stroke engine with new port timing, ignition timing and exhaust for improved performance (80R) ●New Nickel-Silicon-Carbide plated cylinder reduces friction loss for maximum performance (80R) ●New shift spindle, kickstarter ratchet and idler gear, reed valve stop, and clutch reduce engine weight ●Larger aircleaner element for improved intake efficiency (80R) ●Light compact expansion chamber improves power characteristics (80R)

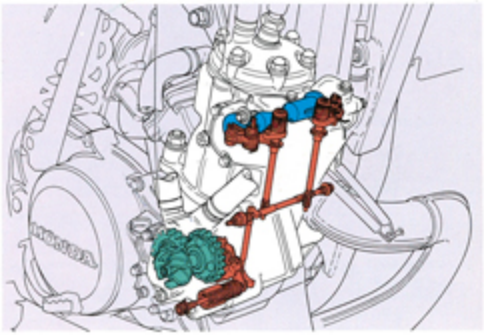
**Chassis** ●Pro-Link now has adjustable compression and rebound damping plus low-maintenance needle roller swingarm pivots (80R) ●Rigid, long-travel air-assist front fork ●Floating rear drum brake enhances suspension action during braking (80R) ●New lightweight front and rear wheels (80R) ●Full sized frame with 18″ and 21″ wheels (80RII) ●Lightweight outer rotor CDI with electronic advance ●New hydraulic front disc brake with large diameter disc and semi-metal pads (80R) ●Bolt on rear sub-frame for easy maintenance

# Champ

Building production motocross machines is entirely different than building other types of motorcycles. Production motocrossers are race bikes. Machines designed for one purpose; to win. Paint, styling, and gadgets have no place, Performance is the only criterion. Within this highly competitive market, Honda holds a leadership position. A position earned and maintained through the constant research and development of new technologies. Below are described just a few of the technological innovations employed on 1986 Honda CR motocross machines.

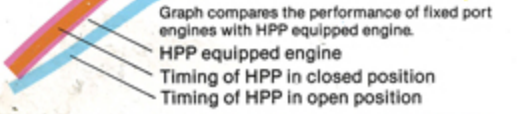
## Honda Power Port (CR250R)

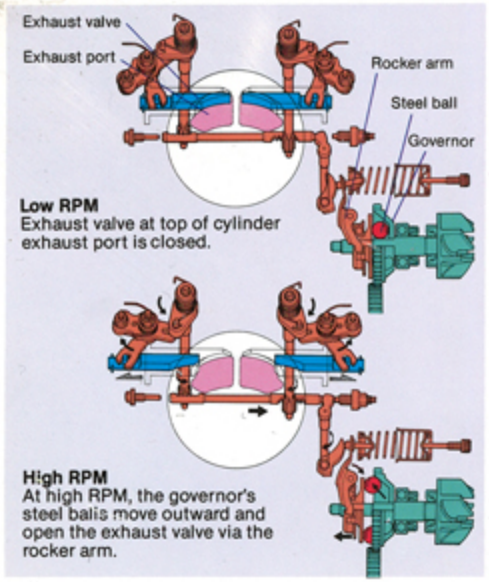
The power delivery characteristics of a two-stroke engine are governed, to a large extent, by exhaust timing, or port size. The difficulty is that engines built to deliver good low- or mid-range power tend to be weak on top and vice-versa, engines designed for optimum top-end generally have very little power at lower rpm.



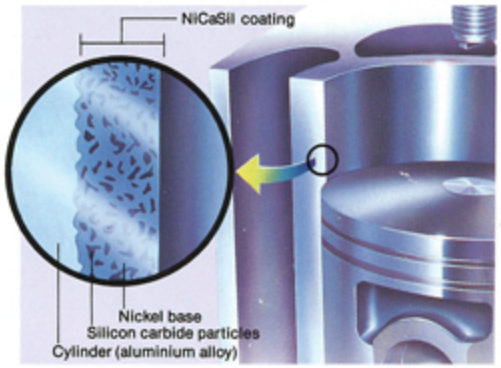
# pionship Technology

Built into the highly competitive 250R, the Honda Power Port achieves its startling performance by varying exhaust timing according to engine rpm. The system consists of a centrifugal governor, linkages, and a valve at the top of the exhaust port. At low rpm, the valve is closed creating solid low-and mid-range power. As rpm increase, the valve opens, producing the power characteristics of an engine designed solely for top-end performance. The result is quick response in the low- and mid-range with a smooth, powerful, top-end.




## NS Cylinder (CR250R, 80R)



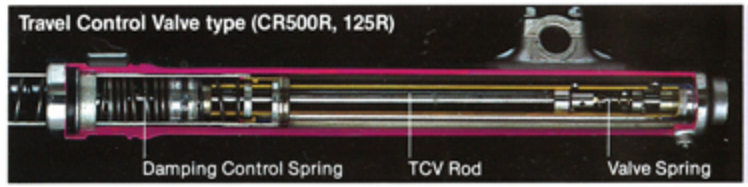

Proven on the Honda RC Works machines in the heat of world-class competition, the NiCaSil cylinder utilized on the CR250R and CR80R enhances heat dispersion and durability while reducing weight.

The NiCaSil process plates the aluminium cylinder wall directly with a nickel and silicon carbide compound. This extremely hard layer eliminates the cast iron cylinder sleeve. The benefits are many. Heat transfer is superb. The superior oil retention properties considerably reduce friction. And with both the cylinder and piston formed from the same aluminium, expansion rates are equal permitting closer running tolerances for better performance with less blowby and engine noise.

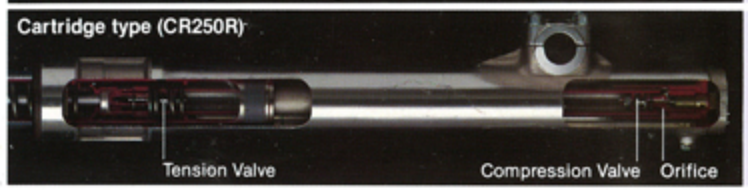
## RC Developed Forks

**Travel Control Valve Type (CR500R, 125R)**

This year for the first time, CR motocrossers will be equipped with Travel Control Valve type front forks. Developed on Honda's RC machines for Supercross competition, the new forks feature a unique valve which regulates damping according to fork stroke instead of speed. Fork operation to mid-stroke is soft and compliant yet responsive to handle varying terrain. Yet with the damping related to fork positioning, it effectively eliminates bottoming even in brutal, high-jumping Supercross.




**Operation of Travel Control Valve type fork damper.**
As the front fork is compressed, compression of the sensing spring is increased and the compression valve spring is pushed by the T.C.V. rod. This increased pressure on the compression valve spring increases damping.




**Operation of Cartridge type fork damper.**
The rebound and compression valves are built into the cylinder. As the oil entrance is an orifice only, aeration is almost eliminated giving stable damping at all times.


**Cartridge Type (CR250R)**

Also developed on Honda Works machines is the Cartridge type fork damper. Utilizing a rod type damper which contains the compression and rebound control valves, it prevents aeration and maintains constant damping rates even when hot. Fork operation to mid-stroke is soft and compliant while bottoming is all but eliminated even under Supercross racing conditions.

## Disc Brake (CR500R, 250R, 125R, 80R)

In motocross, as in most racing, a machine will only go as fast as it stops. Thus Honda equips the CRs with new, lightweight hydraulic front disc brakes. The three bigger bikes have dual-piston calipers, sintered metal pads, and braided steel hose for solid lever feel.



## Initial Parts Kit (CR500R, 250R, 125R)

To keep the CRs at the head of the pack, they come with a standard parts kit. Kit includes most gaskets, two pistons (CR250R ED type, one only), piston rings, rear sprocket, clutch lever (ED type only) and much more.

# The Championship Lineup


**SPECIFICATIONS (ED type)**

| | | CR500R | CR250R | CR125R | CR80RII | CR80R (ED & U type) |
|---|---|---|---|---|---|---|
| Engine | | 2-stroke liquid cooled single | 2-stroke liquid cooled single | 2-stroke liquid cooled single | 2-stroke liquid cooled single | 2-stroke liquid cooled single |
| Bore & Stroke | | 89 x 79mm (3.5 x 3.11 in) | 66.4 x 72mm (2.61 x 2.83 in) | 54 x 54mm (2.13 x 2.13 in) | 46 x 47.8mm (1.81 x 1.88 in) | 46 x 47.8mm (1.81 x 1.88 in)<br>47 x 47.8mm (1.85 x 1.88 in) (U type) |
| Displacement | | 491cm³ (29.96 in³) | 249cm³ (15.19 in³) | 123cm³ (7.51 in³) | 79cm³ (4.82 in³) | 79cm³(4.82in³) 83cm³(5.06in³)(U type) |
| Compression Ratio | | 7 : 1 | 9 : 1 | 8.4 : 1 | 8.2 : 1 | 8.7 : 1 |
| Carburetor | | 38mm (1.5 in) flat valve (PJ38) | 38mm (1.5 in) flat valve (PJ38) | 34mm (1.34 in) flat valve (PJ34) | 28mm (1.1 in) piston valve (PE28) | 28mm (1.1 in) piston valve (PE68A) |
| Max. Horsepower | | 61PS/6,500rpm (DIN) | 48.5PS/8,500rpm (DIN) | 33.5PS/11,500rpm (DIN) | 22.5PS/11,500rpm (DIN) | 23.5PS/12,000rpm (DIN) |
| Max. Torque | | 7kg-m/6,000rpm (DIN) | 4.4kg-m/7,500rpm (DIN) | 2.15kg-m/10,500rpm (DIN) | 1.42kg-m/11,000rpm (DIN) | 1.43kg-m/11,500rpm (DIN) |
| Ignition | | Capacitor discharge (CDI) | Capacitor discharge (CDI) | Capacitor discharge (CDI) | Capacitor discharge (CDI) | Capacitor discharge (CDI) |
| Starter | | Primary kick | Primary kick | Primary kick | Primary kick | Primary kick |
| Transmission | | 5-speed | 5-speed | 6-speed | 6-speed | 6-speed |
| Final Drive | | Roller chain | Roller chain | Roller chain | Roller chain | Roller chain |
| Dimensions (L x W x H) | | 2,200 x 825 x 1,220mm (86.6 x 32.5 x 48.0 in) | 2,180 x 825 x 1,215mm (85.8 x 82.5 x 47.8 in) | 2,140 x 825 x 1,230mm (84.3 x 32.5 x 48.4 in) | 2,020 x 790 x 1,155mm (79.5 x 31.1 x 45.5 in) | 1,810 x 745 x 1,070mm (71.3 x 29.3 x 42.1 in) |
| Wheelbase | | 1,500mm (59.1 in) | 1,480mm (58.3 in) | 1,460mm (57.5 in) | 1,355mm (53.3 in) | 1,250mm (49.2 in) |
| Seat Height | | 950mm (37.4 in) | 950mm (37.4 in) | 930mm (36.6 in) | 890mm (35.0 in) | 800mm (31.5 in) |
| Ground Clearance | | 330mm (13.0 in) | 340mm (13.4 in) | 355mm (14.0 in) | 340mm (13.4 in) | 305mm (12.0 in) |
| Fuel Capacity | | 8.5 liters (2.25 US, 1.87 Imp. gal.) | 7.0 liters (1.85 US, 1.54 Imp. gal.) | 6.5 liters (1.72 US, 1.43 Imp. gal.) | 5 liters (1.32 US, 1.1 Imp. gal.) | 5 liters (1.32 US, 1.1 Imp. gal.) |
| Wheels | | Aluminium rim/wire spoke | Aluminium rim/wire spoke | Aluminium rim/wire spoke | Aluminium rim/wire spoke | Aluminium rim/wire spoke |
| Tyres | Front | 80/100-21 | 80/100-21 | 80/100-21 | 70/100-21 | 70/100-17 |
| | Rear | 110/100-18 | 110/100-18 | 100/100-18 | 90/100-18 | 90/100-14 |
| Suspension | Front | 43mm (1.69 in) air-assist leading-axle fork with adjustable compression damping, 305mm (12 in) axle travel | 43mm (1.69 in) air-assist leading-axle fork with adjustable compression damping, 305mm (12 in) travel | 43mm (1.69 in) air-assist leading-axle fork with adjustable compression damping, 300mm (11.8 in) axle travel | 35mm (1.38 in) air-assist leading-axle fork, 255mm (10.0 in) travel | 33mm (1.3 in) air-assist leading-axle fork, 260mm (10.2 in) axle travel |
| | Rear | Pro-Link with adjustable compression/ rebound damping, 320mm (12.6 in) axle travel | Pro-Link with adjustable compression/ rebound damping, 320mm (12.6 in) travel | Pro-Link with adjustable compression/ rebound damping, 310mm (12.2 in) travel | Pro-Link with adjustable rebound damping, 270mm (10.6 in) axle travel | Pro-Link with adjustable compression/ rebound damping, 270mm (10.6 in) axle travel |
| Brakes | Front | Hydraulic disc with dual-piston caliper & sintered metal pads | Hydraulic disc with dual-piston caliper & sintered metal pads | Hydraulic disc with dual-piston caliper & sintered metal pads | Leading/trailing drum | Hydraulic disc |
| | Rear | Leading/trailing drum | Leading/trailing drum | Leading/trailing drum | Leading/trailing drum | Leading/trailing drum |
| Dry Weight | | 101.5kg (223.8 lb) | 97.5kg (214.9 lb) | 87.5kg (192.9 lb) | 73.5kg (162.0 lb) | 62.5kg (138 lb) |

Honda machines sold in your area are those most suited to local conditions. Specifications and appearance may differ slightly depending on markets and are subject to change without notice. For details, please consult your nearest Honda dealer.

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