

# UNITEC Quadroll Hydraulic Crusher



(Quarry, S.Korea)

UNITEC Crushing equipment is proud to introduce this UNITEC Quadroll hydraulic crusher to the Australian Quarrying, Mining and Recycling industries.

## 1. UNITEC Quadroll Crusher details

- ❖ All fine crushing after Jaw Crusher is carried out by only 1 UNITEC Quadroll crusher for production of manufactured sand.
- ❖ **Main Applications**
  - Producing under 5mm Fine Sand (Input size 9-25mm).
  - Producing under 13mm (Input under 40mm).
  - Or other fine crushing requirements for construction materials.
  - Processing of recycled waste such as construction waste materials and bricks, fine concrete and asphalt aggregates.
  - Fine mineral production like Gold, Silver, Lead, Zinc, Copper, Diamond, etc.
- ❖ **Advantages**
  - High efficiency and performance.
  - High capacity and productivity with low wear parts costs.
  - Up to 70% lowest wear cost than impact crushers and cone crushers in particular application.
  - Easy replacement of wear parts.

## **2. WHAT IS A QUADROLLCRUSHER**

### **GENERAL DESCRIPTION**

The UNITEC Quadrolls is a compression type rolls crusher which is fitted with two pairs of heavy duty counter rotating rollers, arranged such that one pair of rollers sits above the other. In this configuration, feed material entering the crusher is effectively crushed twice in each pass through the Quadrolls.

The UNITEC Quadrolls crusher comprises a heavy fabricated steel frame fitted with the two pairs of rollers and shafts. Each pair of rollers is adjustable within a given range of settings to facilitate control over product size.

The rollers are arranged in a “two by two” configuration with the lower set being slightly below and offset to the upper set and operating at a different speed and lower roller gap.

All four roller shafts have high torque hydraulic drives mounted directly to the open end of the shafts. The shafts are supported in two pairs of heavy duty double row spherical roller bearings. Each shaft has the ability to open setting or “relieve” in the event of an occasional physical overload, to protect the machine from severe damage.

Each shaft has a cast and machined 18% Manganese roller shell attached to it by means of a simple tapered locking device which allows easy removal and replacement of the worn rollers.

With four independent hydraulic roll drives, a large capacity hydraulic system and replaceable manganese roll shells, the Unitec Quadrolls are easy to operate and maintain and produce a large proportion of “fines” in a single pass.

These machines have been developed over the last decade, originally for use in Korea in the application of manufactured sand from recycled concrete.

A cross section through a pair of the roller shafts is attached.

### **3. PERFORMANCE AND OPERATION**

The UNITEC Quadrolls is designed as a fine reduction crusher to fill the gap between conventional cone crushers and the “super fine” performance of the High Pressure Grinding Rolls machine (HPGR).

**The Quadrolls is not an HPGR and should not be operated in the same manner as an HPGR.**

The Quadrolls is designed to be fed a pre-screened feed containing less than 10% of material below the size of the recommended lower roll gap setting (set undersize) and crush this material as fine as 70-90% passing the lower roller gap setting.

The actual crusher gap settings, power draw, hydraulic pressure draw and general reduction performance of the Quadrolls will vary from one application to another, however, as a general guide, the machine operates most favourably when receiving a -20+4mm to -25+6mm feed with a target product size range of P100= 4-6mm. To achieve this performance the crusher must be operated in “closed circuit” with a highly efficient screen.

As with any form of conventional compression crusher, care must be taken to protect the Quadrolls from ingestion of any uncrushable objects such as tramp metal, clays and elevated levels of set undersize material.

## 4. RANGE OF QUADROLLS CRUSHERS

There are four models available as follows.

### 4 - 1. MODELS

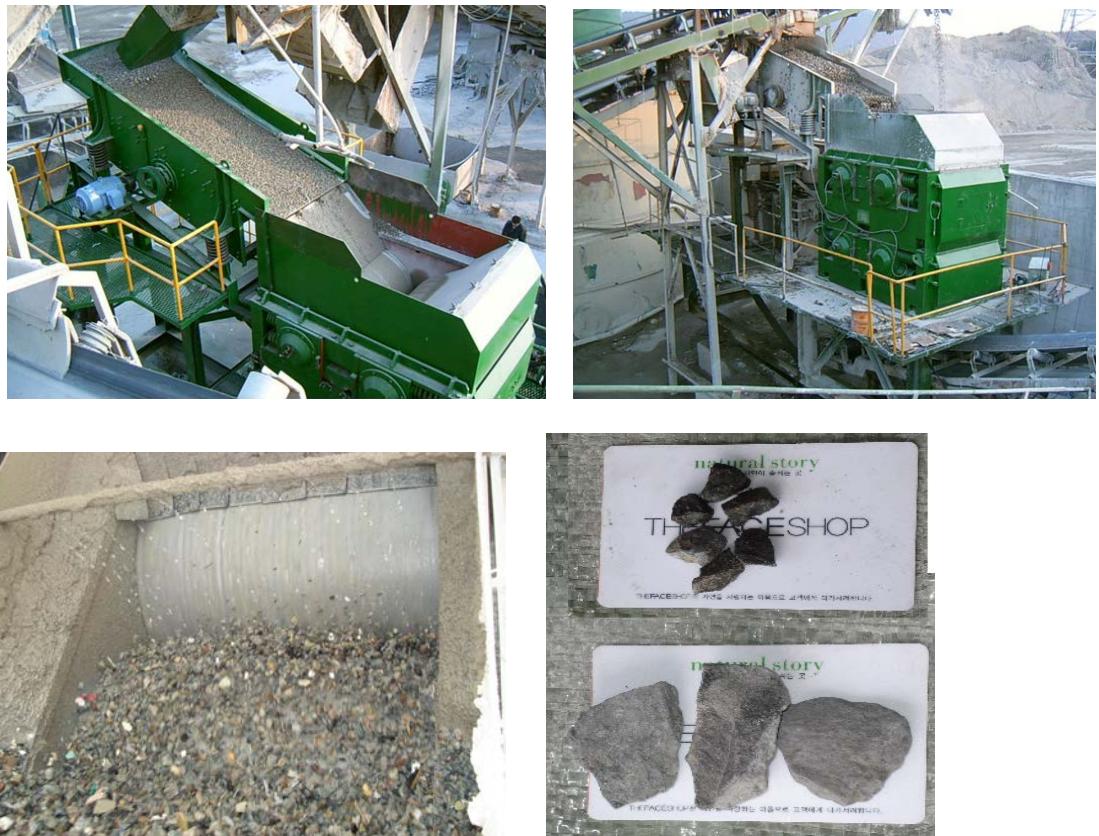
Model	Size (D*W)	Capacity (T/H)- Through Output	Max, Size(mm)	RPM	Power	HYD.MOTOR
U-HQRC	0608	See Below	25	100	90KW*4P	ME600B
	0810		30	100	110KW*4P	ME850B
	1012		35	100	130KW*4P	ME1300A
	1215		40	90	150KW*4P	ME1300A

### 4-2. STANDARD CAPACITY

MODEL	Bottom Roll Setting (mm)	Crushing Capacity (t/h)-Throughput								
		2	3	4	5	6	7	8	9	10
Φ600 * 800L	29	43	58	72	87	101	116	130	145	
Φ850 * 1000L	51	77	103	128	154	179	205	231	256	
Φ1050 * 1200L	72	109	145	181	217	253	290	326	362	
Φ1200 * 1500L	98	147	195	244	293	342	391	440	489	

NOTE S. Capacity is based on the conditions that unit volume weight is 1.6t/m<sup>3</sup>(with grain size less than discharge setting not included)and that feed material having compressive strength ranging from 1,000<sub>kg/cm<sup>2</sup></sub> to 1,250<sub>kg/cm<sup>2</sup></sub> This material should be fed into crusher uniformly and continuously in quantity and grain size. The above theoretical data is based on Limestone Of medium hardness.

## 5. Installed Site (S. Korea)



### Tested Sample- Iron Ore

1. Amount: Approx. 6-7Ton
2. Tested Crusher Model: U-HQRC1012
3. Raw Material: Iron Ore (S. Korea)
4. Fe 62.7% & SiO<sub>2</sub> 5.3% & Al<sub>2</sub>O<sub>3</sub> 1.2% & P 0.416% & S 0.066%



***Unitec the new force in crushing equipment***