



D & H INDIA LTD

LOW HEAT INPUT
WELDING ALLOYS

RM SERIES

WELDING HAND BOOK



www.dnhindia.com

Company Profile

D&H India Limited, an ISO 9001-2015 certified company, was incorporated in the year 1985 offers a wide range of welding consumables for diverse application in industries like **Steel, Power, Cement, Railways, Earth Moving & Mining, Oil & Petrochemicals, Heavy Engineering & Fabrication, Sugar Industry And Transport sectors** etc.

D&H India product range includes a comprehensive range of **Low Heat Input welding consumables** for repair and maintenance application for every industry.

D&H India Limited, follows Total Quality Management, known for Innovation and offering import substitutes'

D&H India has got a state of the art manufacturing facility located at **Indore, Ghatabillod & Durg (CG)**. The manufacturing facility is equipped with the most sophisticated and precise QC. The R&D center is advanced and recognized by GOVT OF INDIA Ministry of Science and Technology, Department of Scientific & Industrial Research.

D&H India is firmly committed to offer complete welding solution with satisfaction to all its customers through a dedicated team of qualified and experienced sales and service engineers backed by all India and abroad spreaded distribution network.





LOW HEAT INPUT WELDING ALLOYS



Electrodes for

1. Mild, Medium and High Tensile Steel Electrodes
2. Stainless Steel
3. Nickel & Its Alloys
4. Surfacing and hard facing
5. Cast Iron
6. Cutting & Gauging

LOW HEAT INPUT WELDING ALLOYS

Mild, Medium and High Tensile Steel Electrodes



Brand Name	Application	Mechanical Property	Current Type
RM-60	Electrodes produces smooth weld bead of X-ray quality with tough, ductile and resistant to high stress /distortion	UTS: 50.0 Kg/mm ² Elongation(L=4D) ; 28.0%	AC/DC (+/-)
RM- 70	A Hydrogen Controlled, radiographic electrodes for mild and medium carbon, high tensile steel subject to dynamic loading and impact, cast steel ,heavy machinery parts and Cushion layer under hard deposits.	UTS: 55.0 Kg/mm ² Elongation(L=4D); 28%	AC/DC +
RM-110	For welding of low alloy-high tensile Ni, Cr, Mo steel. Weld metal has excellent creep and heat resisting properties, moderate resistance to corrosion. Weld metal has excellent impact strength even at sub zero temp.	UTS: 80.0 Kg/mm ² Elongation(L=4D) ; 22% Impact strength: At -50°C-6.2 Kgfm	AC/DC +
RM -18	Electrode is specially formulated for Cr,Ni,Mo steels with moisture resistant coating suitable for high tensile	UTS: 80.0 Kg/mm ² Elongation(L=4D) ;	AC/DC +



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Mild and Medium Steel Welding Electrodes



Brand Name	Application	Mechanical Property	Current Type
	strength, good ductility along with high notch toughness at room temp as well as at subzero temp even upto -60°C	24% Impact strength: At -50°C-6.5 Kgfm	

Stainless Steel Electrodes



Brand Name	Application	Mechanical Property	Current Type
RMS-199	Electrodes produces X-ray quality ,extra low carbon deposits for welding of AISI SS 201,301, 302, 304 L,308,308L and their equivalents	UTS: 53 -58.0 Kg/mm ² Elongation(L=4D) ; 35-40.0%	AC/DC+
RMS-199-S	An electrodes for welding of 19cr-10Ni-Nb and 19cr-10Ni-ti stainless steels suitable for AISI 301,302,304, 304L,308,308L,321,347 used in chemical plant storage tanks food processing industries etc	UTS: 53 -58.0 Kg/mm ² Elongation(L=4D) ; 30-35.0%	AC/DC+



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RMS - 20-3-S	It produces an extra Low carbon 18Cr-12Ni-2.5Mo-Nb stabilized, intergranular corrosion resistant weld metal suitable for AISI316, 316L, 316Ti, 317, 318-Ti and other Mo bearing steels used in chemical vessels and plants, Oil Refinery, fertilizer plants equipment etc.	UTS: 50 -62.0 Kgf/mm2 Elongation(L= 4D) ; 30-35.0%	AC/DC+
RMS - 20-3	Suitable for welding of stainless steels to carbon steels, Low alloy steels, Cast steel and Au.Mn. steels which finds extensive applications	UTS: 55 -65.0 Kgf/mm2 Elongation(L= 4D) ; 25-35.0%	AC/DC+
RMS- 19-5M	A Versatile electrodes producing a weld metal having high toughness and abrasion resistance under impact. It has work hardening property. Suitable for welding and overlay on Au.Mn. steel to itself or with variety of dissimilar steels like reclamation of worn out parts both for buffer and hard facing layer of deposition.	UTS: 65- 68.0 Kgf/mm2 Hardness as welded : 200 BHN Work hardness Under impact : 500-550 BHN	AC/DC+



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RMS-125	It produces a stainless steel weld metal resistance to Corrosion, oxidation and scaling upto 1050°C. suitable for overlay and joining of stainless steel to Mild steel and welding of clad surfaces.	UTS : 60-80 kgf/mm2 Elongation ; 35-40 %	AC/Dc+
RMS-232	Suitable for overlay and welding of AISI310 stainless steel ,steel of high hardenability,13% Cr steel,Cr Mo steel.the weld metal has excellent corrosion resistability at elevated temp.up to 1200°C	UTS : 55-65 kgf/mm2 Elongation ; 30-35 %	AC/DC+
RMS-233	An electrodes for high resistance to heat and corrosion even at elevated temp. upto 1200°C. Suitable for welding AISI 316,316L, 317 and straight Crom steel such as 405,410,410s,420, 405,410,410s,420,429 & 430. The application include repair of valves, hot dies, salvaging pumps etc.	UTS : 55-65 kgf/mm2 Elongation ; 30-35 %	AC/DC+
RMS-31	Versatile electrodes designed for producing high strength, high alloy,	UTS: 85 Kgf/mm2 ELONGATIO	AC/DC+



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	and crack free weld metal. Most suitable for overlay or welding of wide variety of similar and dissimilar steels including difficult steels. Also suitable for the components of unknown composition of steels.	N: 22%	
RMS - 31 FGS	An Electrodes producing fine grain structure weld metal with controlled ferrite to obtain higher strength, ductility and crack resistance. Highly suitable for overlay or joining of similar or dissimilar steel of unknown composition like dies, tools, leaf or coil springs, forged shafts etc. It can be used for buffers layers also before hard facing.	UTS: 85 Kgf/mm2 ELONGATION : 22%	AC/DC+
RMS-F-410	An electrodes suitable for surfacing or welding of AISI410 and equivalent grade of steels where cavitation or erosion resistibility is required such as valve seat, turbine components ,shaft rollers etc in chemical and petroleum industries	UTS: 60 Kgf/mm2 ELONGATIO N: 25%	AC/DC+



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RMS-FL-444	Special purpose electrodes with 13% Cr-4% Ni alloyed composition. Excellent resistance to Impact, Friction, Corrosion, Erosion at elevated temp. Typical application like reclamation of Hot cutting tools, Valve seat, Continuous Casting rolls etc.	Hardness : 35-45 RC	AC/DC+
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Nickel & Nickel Alloys Electrodes.



Brand Name	Application	Mechanical Property	Current Type
RMN-717-M	An universal , hydrogen controlled electrodes deposit the weld metal of high quality nickel alloy Suitable for surfacing / welding of Ni- Cr- Fe ally to itself or dissimilar steels like carbon steel, stainless steel and other heat resisting alloys including Nichrome. It has good impact strength even at down to minus 252°C.	UTS: 58 Kgf/mm2 ELONGATIO N: 30%	DC+



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RMN-712-S	Electrode is designed for surfacing or welding of Ni-Cr-Fe alloys to itself and dissimilar metal such as Carbon steel, Stainless Steel, Pure Nickel and Nickel alloys	UTS: 58 Kgf/mm2 ELONGATIO N: 30%	DC+
RMN-730-CU	Low heat Input welding of Monel metal, It produces hydrogen controlled, high strength and corrosion resistant	UTS: 55 Kgf/mm2 ELONGATIO N: 30%	DC+
	weld metal on Ni-Cu alloys. Suitable for welding of Ni-Cu alloys to itself and other dissimilar metals to achieve corrosion resistance against sulphuric acid, alkalis solvent and sea water. Low heat Input welding of Monel metal, It produces hydrogen controlled, high strength and corrosion resistant weld metal on Ni-Cu alloys. Suitable for welding of Ni-Cu alloys to itself and other dissimilar metals to achieve corrosion resistance against sulphuric acid, alkalis solvent and sea water.		



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RMN-90-Ti	This is a pure Ni electrode, suitable for surfacing or welding of dissimilar metal such as pure nickel to itself and different types of steels, copper and copper alloys, including caustic soda services	UTS: 40-45 Kgf/mm2 ELONGATIO N: 22%	DC+
RMN-W-6	Outstanding electrodes produces NI-Cr—Mo-W-Co weld metal for joining and surfacing the components subject to Abrasion, Corrosion, Oxidation and high temperature services upto 1000 Work hardness retains even at elevated temp Suitable for hot working tools like trimming dies, heating element, shear blades etc	Work hardness under Impact : Approx 400 BHN	DC+

Electrodes For Surfacing, Overlay & Hard facing



Brand Name	Application	Mechanical Property	Current Type
RMH - 25	Electrodes for machineable surfacing on all ferrous metal. Weld deposit is tough	Hardness of Weld Metal: 250-325 BHN	AC/DC+



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	<p>and wear resistant to rolling and sliding friction and impact. Such as sprocket, Gear teeth, Pinion etc. Electrodes for machineable surfacing on all ferrous metal. Weld deposit is tough and wear resistant to rolling and sliding friction and impact. Such as sprocket, Gear teeth, Pinion etc.</p>		
RMH - 35	<p>Electrodes depositing moderately hard weld metal on all ferrous metals. Suitable for on worn against Intermetallic Abrasion surfacing</p>	<p>Hardness of Weld Metal: 350 -400 BHN</p>	<p>AC/DC +</p>
RMH - 65	<p>Electrodes for non-machinable overlay on all ferrous metal subject to severe abrasion and Impact</p>	<p>Hardness of Weld Metal: 55 -62RC (on two layer deposit)</p>	<p>AC/DC +</p>
RMH - 22	<p>Electrodes for non-machinable Chromium carbide overlay on all ferrous metal machine parts subject to severe erosion, abrasion and Impact. Such as Crushing hammers, conveyor screws etc.</p>	<p>Hardness of Weld Metal: 55 -62RC (on two layer deposit)</p>	<p>AC/DC+</p>



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RMH - 30-5M	Electrodes deposit exceptionally high resistance to abrasion and moderate Impact. The weld metal retains its hardness even at elevated temp. up to 550°C Such as impellers, Pug mill knife etc	Hardness of Weld Metal: 58 -65RC (on two layer deposit	AC/DC+
RMH - 23	An universal hard facing electrodes for all ferrous metal deposit weld metal resistant to severe erosion, abrasion, metal to metal wear and Impact such as earth moving equipment, excavator bucket & its lip, Sugar cane knife etc.	Hardness of Weld Metal: 58 -65RC (on two layer deposit	AC/DC+
RMH - 14 MN	Electrode deposit high manganese weld metal highly resistant to cracking, heavy impact, metal to metal wear and deformation. It has excellent work hardening property. Application such as crusher jaw and hammers excavator buckets etc.	Hardness of Weld Metal: As welded : 20- 22 RC Under Impact : 48 -53RC	AC/DC+



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RMH - WH	<p>Electrode depositing work hardening weld metal resistant to combined effect of abrasion, impact & corrosion it also</p> <p>Hardness of Weld Metal: As welded : 20- 22 RC Under Impact: 48-53R</p> <p>Cresist metal deformation & cracking</p> <p>Application such as cement mill roll crusher, shovel track, dipper teeth, earth moving equipment.</p>	<p>Hardness of Weld Metal: As welded : 17 RC Under Impact : 42 -55RC</p>	AC/DC+
RMH - 70W	<p>Excellent product for hard facing on high speed steels and tool steels. It has stable hardness and crack resistant even at elevated temp. upto 600°C. It has edge retention property.</p> <p>Application such as Hot dies, cutting tools, Punches etc.</p>	<p>Hardness of Weld Metal: 55-60 RC</p>	AC/DC+
RMH- 6HT	<p>A hard facing electrodes with alloy base of C,Cr,Mn,Mo, W,Fe.It is highly resistant to metal to metal wear and severe abrasion at room temp. as well as at elevated</p>	<p>Hardness of Weld Metal: At Room Temp:55-60 RC At 580°C: 49- 51 RC</p>	AC/DC+



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	<p>temp. application Such as forging dies, screw conveyor, bells and hoppers etc. A hard facing electrodes with alloy base of C,Cr,Mn,Mo, W,Fe.It is highly resistant to metal to metal wear and severe abrasion at room temp. as well as at elevated temp. application Such as forging dies, screw conveyor, bells and hoppers etc.</p>	<p>Hardness of Weld Metal: At Room Temp:55-60 RC At 580°C: 49- 51 RC</p>	
RMH – 5HT	<p>A hard facing electrodes with alloy base of C,Cr,Cb,V,Mo, W Fe.The weld metal has excellent abrasion resistant at high temp. with high metal recovery exceeding 150% Application such as foundry parts, furnace parts, bell & hopper sinter plant disintegrators etc.</p>	<p>Hardness of Weld Metal: At Room Temp:55-63 RC At 580°C: 49- 51 RC</p>	AC/DC+
RMH – 4HT	<p>Special purpose hard facing electrodes depositing dense, extremely hard weld metal at room temp as well as at elevated temp. upto 600°C.</p>	<p>Hardness of Weld Metal: At Room Temp:55-65 RC At 600°C: 42- 45 RC</p>	AC/DC+



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	Ideally suited for blast furnace bells hopper, coke chutes sinter plant disintegrators etc		
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Electrodes For Cast Iron Welding



Brand Name	Application	Mechanical Property	Current Type
RMC - NM	An electrode depositing non- machinable weld metal on all types of Cast Iron components.	---	AC/DC+
RMC – CN	The electrode produces weld metal of Ni Cu alloys (MONEL)which is strong, Ductile, and easily machinable.	UTS : 166 N/mm2 Hardness of weld metal: 160 VPN	AC/DC+
RMC - FN	An universal cast iron electrodes producing High strength, crack resistant, Ferro- Nickel alloy for machinable weld deposit .Suitable for grey CI, Malleable Iron or even un- known composition of Cast iron. Such as Engine block, castings, foundry castings etc.	UTS : 35-45 kgs/mm2 Hardness of weld metal: 160 -190 VPN	AC/DC+



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RMC – N 80	Universal type high Nickel alloy, machinable deposit having excellent compatibility with all grades of CI components.	UTS : 40-45 kgs/mm2 Hardness of weld metal: 140 - 150 VPN	AC/DC+
RMC- N	Excellent electrodes for cold welding of machinable welding on Cast iron components. It has corrosion resistant property.	UTS : 35 kgs/mm2 Hardness of weld metal: 140 - 150 VPN	AC/DC+

Electrodes For Cutting And Gouging Application:



Brand Name	Application	Mechanical Property	Current Type
RMX	Electrode for cutting and piercing of all metals and Alloys	—	AC/DC+
RMG	Electrode for Chamfering, Grooving and Gouging applications of all metals and Alloys	—	AC/DC+



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