



ECN

Extrusion Production Information and Control System
An interactive process control and database system

Pressa



2020

Società Automazione Industriale

Cos'è ECN

- Estrusione orientata al business, dalla pianificazione della produzione al magazzino con risultati comprovati ;
- Connessione totale con l'impianto;
- Facile da usare, semplice l'istruzione del personale;
- Sistema aperto a futuri sviluppi ed integrazioni;

Configurazione Hardware

- PC alla pressa

L'applicativo installato dialoga con il PLC e con il Server. E' l'interfaccia con l'operatore.

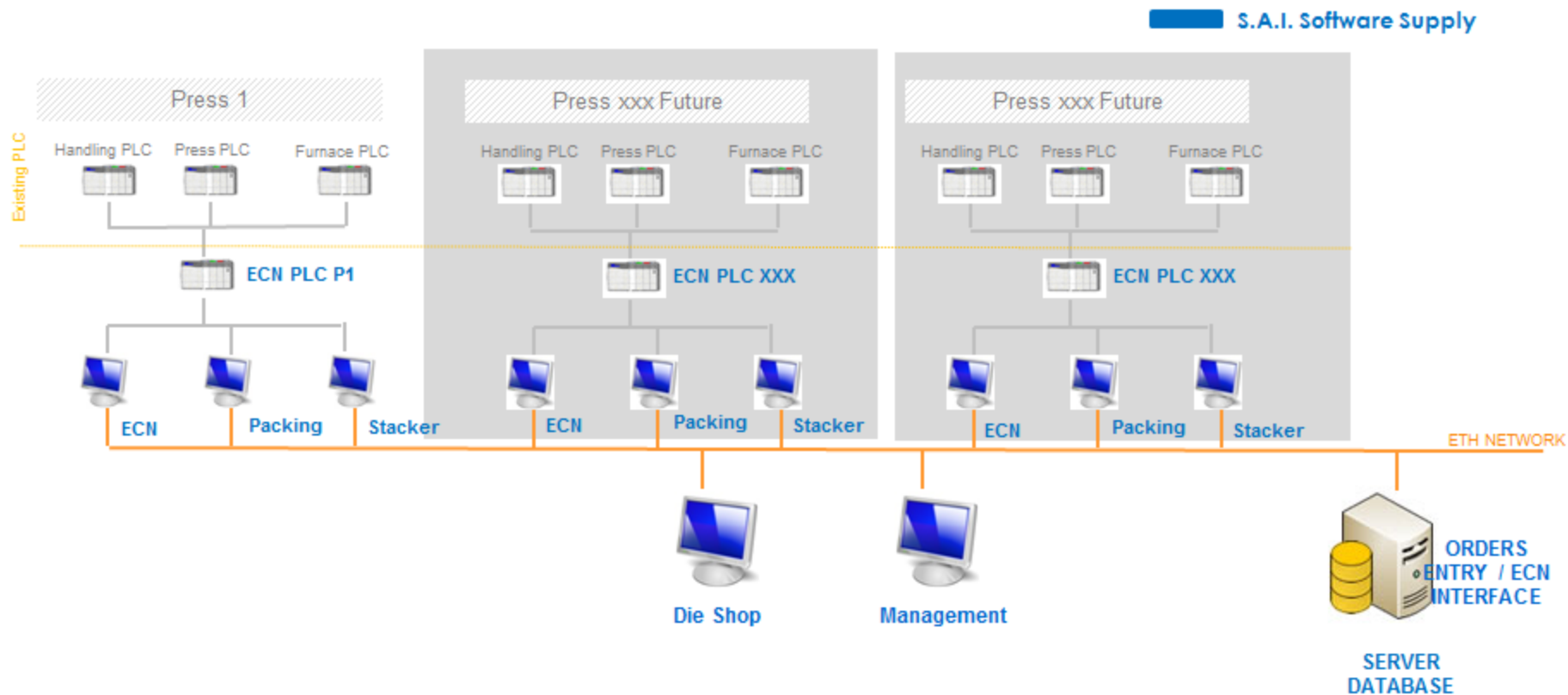
- Server

Tutti i dati relativi a tutte le presse gestite da ECN sono conservati nel database nel Server: qui avviene anche lo scambio di dati con l'ERP esistente del cliente.

- PLC

I PLC già presenti sull'impianto vengono utilizzati ed integrati con il codice necessario per l'interfacciamento con ECN.

Gestione di più Linee di Estrusione

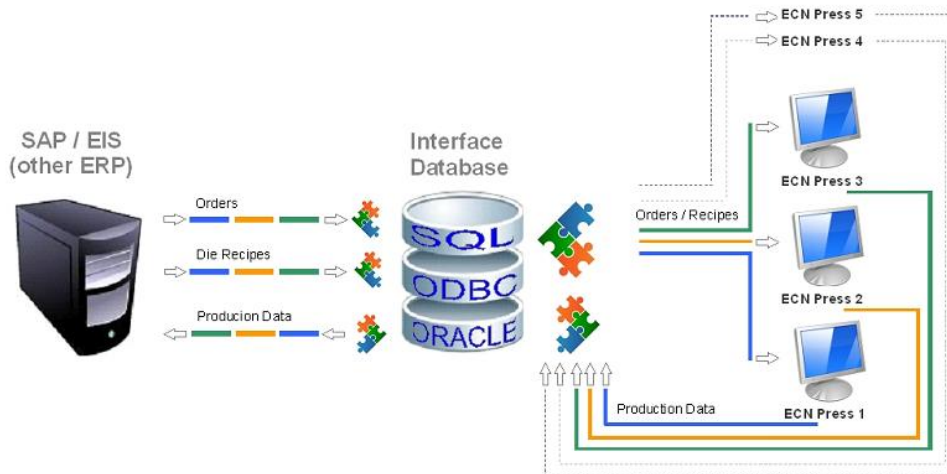


E' più facile lavorare

- ECN è collegato ai più importanti PLC della produzione;
- Legge i dati direttamente dai PLC, quindi **meno da scrivere!**
- ECN può anche scrivere i dati sui PLC dell'impianto nello stesso tempo!

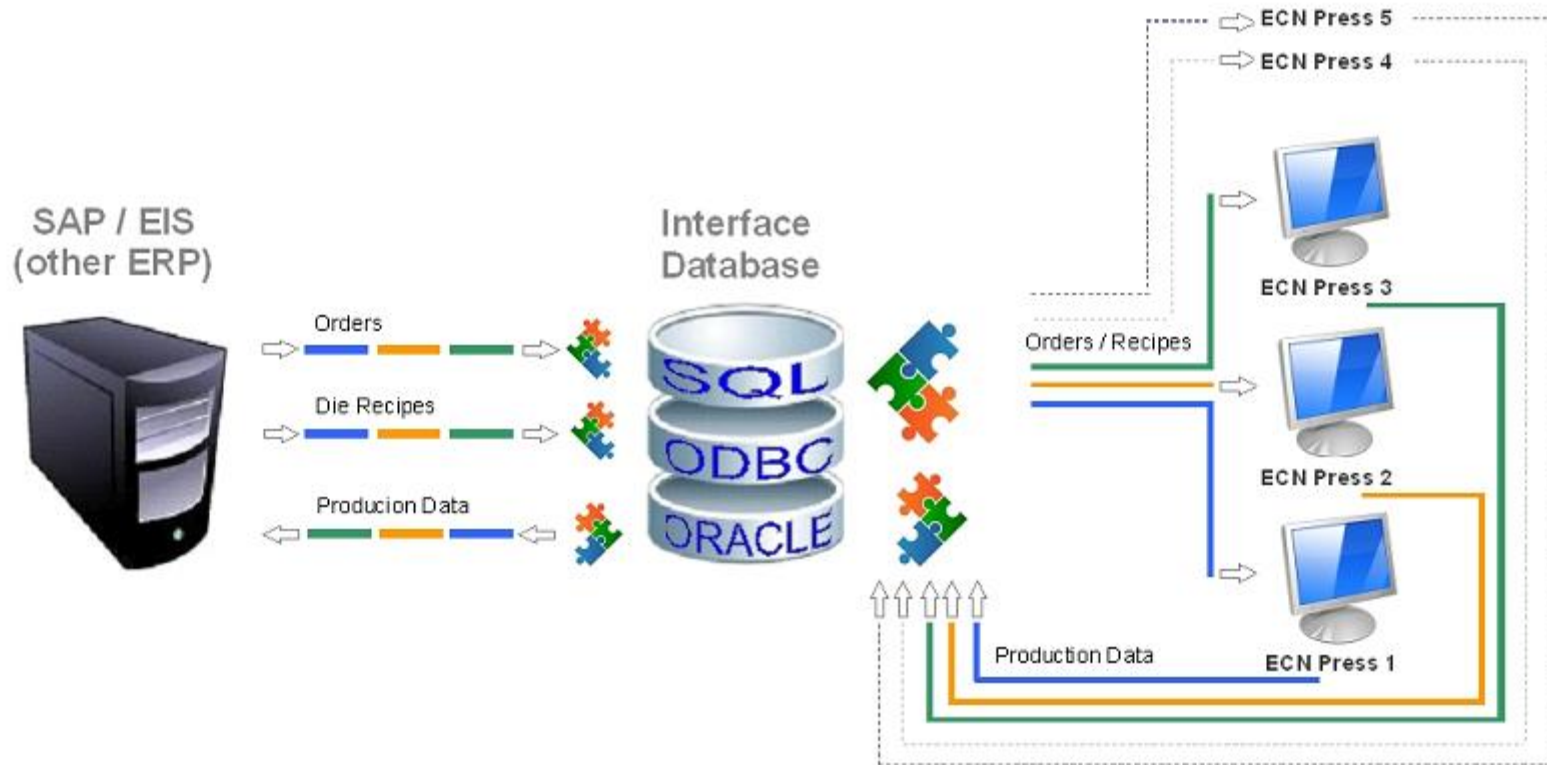
Esperienza e Conoscenza Condivisa

ECN salva le impostazioni di produzione ottimali per ciascuna matrice nel database

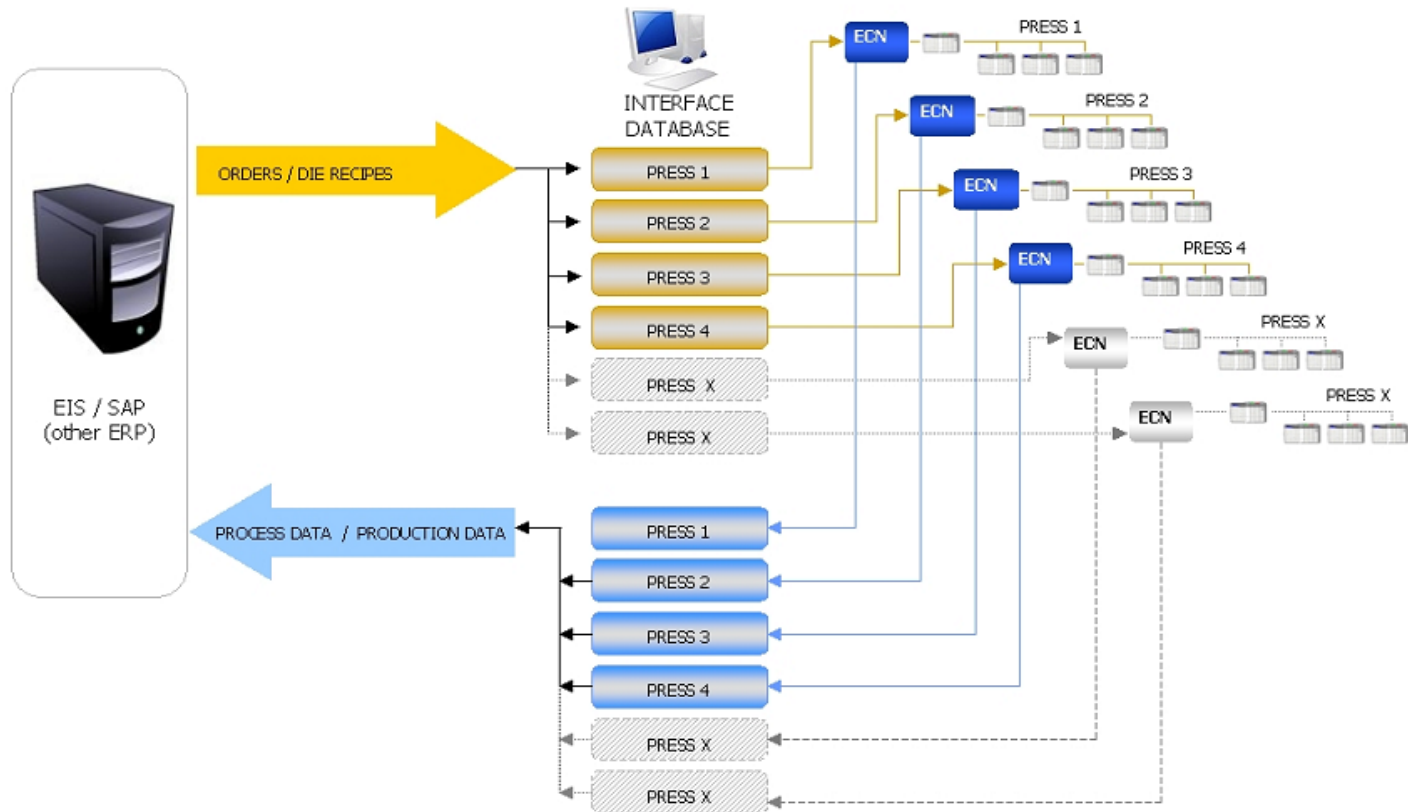


L'esperienza dell'operatore esperto è catturata dal sistema nel database e condivisa anche con operatori non esperti per assicurare un'**uniformità di qualità elevata**.

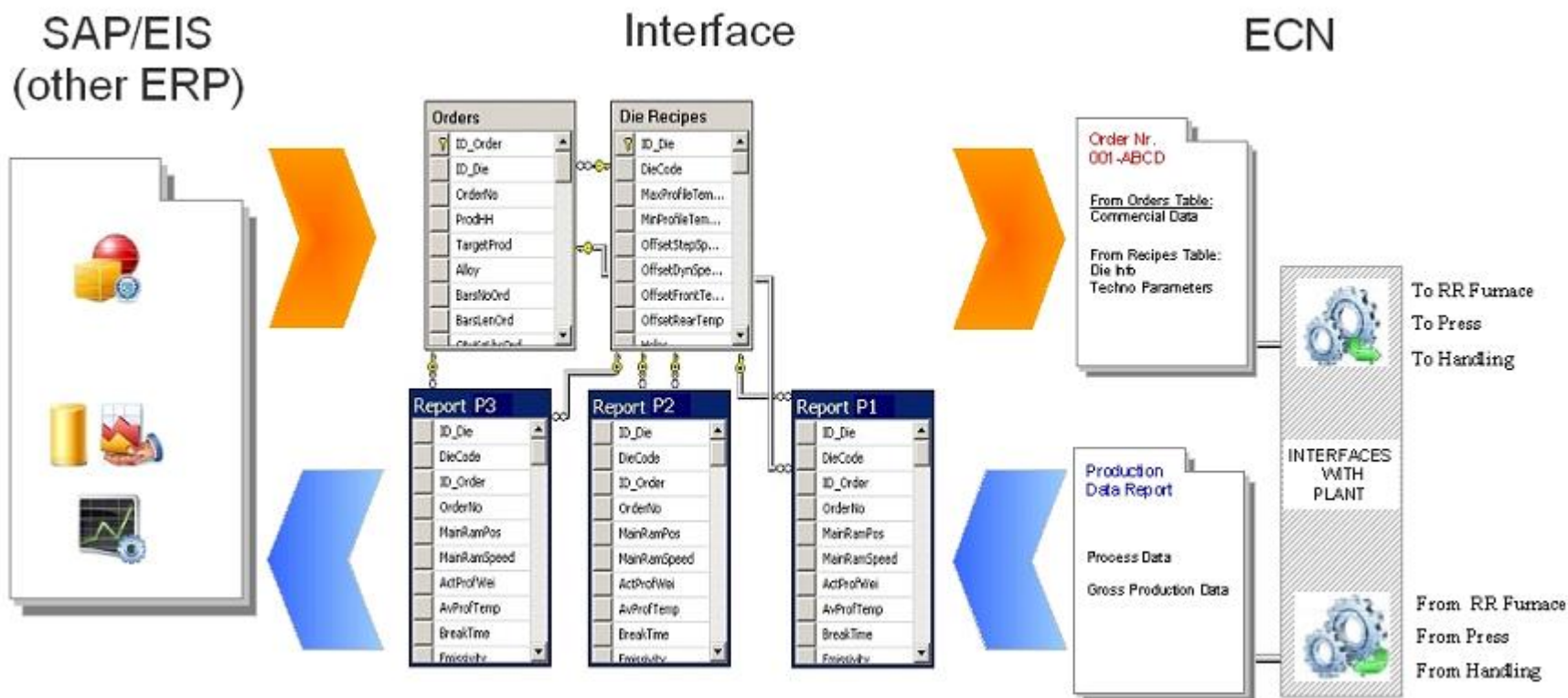
Strategia di Migrazione Dati 1/3



Strategia di Migrazione Dati 2/3



Strategia di Migrazione Dati 3/3



Pianificazione e Gestione Ordini

S.A.I. AUTOMATION - BRESCIA (ITALY) ECN - EXTRUSION CONTROL ** ORDERS MANAGER P7 **																			
Lot Nr	Order Nr	Die Code	Holes	Bars Nr	Bars Len	Bill To Extr	Bill Len	Butt Len	Prof Len	Prof Weight	Fr Scrap	Bk Scrap	Extr Date	Next Ord	Oven Nr	Plan Alloy	Batch Nr	Seq	Quality
794819677	8210433	200946	1	28	5000	3	893	20	48	2007	1500	1500	10/01/2013	0		6060	8	999	0
PLEASE EDIT THE RECIPE BEFORE SEQUENCING THE NEXT JOBS																			
Lot Nr	Order Nr	Die Code	Holes	Bars Nr	Bars Len	Bill To Extr	Bill Len	Butt Len	Prof Len	Prof Weight	Fr Scrap	Bk Scrap	Extr Date	Next Ord	Oven Nr	Plan Alloy	Batch Nr	Seq	Quality
405054880	8205224	GL01528/1M	1	15	6100	1	0	20	0	1974	1500	1500	10/01/2013	0		6060	8	999	0
44798370	8133134	205708	2	62	4000	3	1032	20	50.5	1105	1250	1250	10/01/2013	0		6063HIP	8	999	0
834689632	8206426	CPD112/3M	2	165	3658	1	0	20	0	686	1500	1500	10/01/2013	0		6063HIP	8	999	0
825021280	8206564	CPD112/3M	2	165	3048	1	0	20	0	686	1500	1500	10/01/2013	0		6063HIP	8	999	0
500173152	8210985	KFT1194/6	3	440	2743	1	0	15	0	552	1500	1500	10/01/2013	0		6063HIP	8	999	0
51265954	8150509	205476	1	91	6000	1	0	20	0	5993	1500	1500	10/01/2013	0		6060	9	999	0
917242272	8133341	102622/1	1	220	4400	1	0	15	0	1871	1800	1800	10/01/2013	0		6063HIP	9	999	0
918857120	8133342	102622/1	1	330	6100	1	0	15	0	1871	1800	1800	10/01/2013	0		6063HIP	9	999	0
464823901	8197233	200255	3	220	3048	1	0	15	0	844	1500	1500	10/01/2013	0		6063HIP	9	999	0
861171295	8143034	201454	4	550	4000	1	0	20	0	660	1500	1500	10/01/2013	0		6063HIP	9	999	0
849943135	8143035	201454	4	220	4500	1	0	20	0	660	1500	1500	10/01/2013	0		6063HIP	9	999	0
129733024	8143034	201454/1	4	550	4000	1	0	20	0	626	1500	1500	10/01/2013	0		6063HIP	9	999	0
621446237	8121362	201516	1	33	3200	1	0	20	0	2619	1500	1500	10/01/2013	0		6063HIP	9	999	0
408200820	8201467	201580	4	88	4500	1	0	20	0	730	1500	1500	10/01/2013	0		6063HIP	9	999	0
203685472	8125125	203547	2	75	4400	1	0	20	0	1273	1500	1500	10/01/2013	0		6063HIP	9	999	0
202032736	8125126	203547	2	44	5000	1	0	20	0	1273	1500	1500	10/01/2013	0		6063HIP	9	999	0
206264928	8125127	203547	2	44	6100	1	0	20	0	1273	1500	1500	10/01/2013	0		6063HIP	9	999	0
58591650	8197200	205983	1	14	3000	1	0	20	0	2643	1500	1500	10/01/2013	0		6063HIP	9	999	0
57543074	8197201	205613	1	14	3000	1	0	20	0	2615	1500	1500	10/01/2013	0		6063HIP	9	999	0
344790647	8143030	2-3128/1	4	330	4100	1	0	15	0	608	1500	1500	10/01/2013	0		6063HIP	9	999	0
781290078	8143037	2-6296/1	4	330	4100	1	0	15	0	630	1500	1500	10/01/2013	0		6063HIP	9	999	0
791388254	8201473	3-4725/A	2	251	4750	1	0	20	0	1015	1100	1100	10/01/2013	0		6063HIP	9	999	0
794062430	8201474	3-4726/D	4	110	4000	1	0	20	0	789	1800	1800	10/01/2013	0		6063HIP	9	999	0
810325410	8201469	3-6543	6	176	3300	1	0	20	0	476	1100	1100	10/01/2013	0		6063HIP	9	999	0
167546272	8105118	S2E109	2	53	5500	1	0	20	0	946	1500	1500	10/01/2013	0		6063HIP	9	999	0
167546272	8147133	S2E109	2	53	5500	1	0	20	0	946	1500	1500	10/01/2013	0		6063HIP	9	999	0
310041696	8202223	VEN1122	3	121	2752	1	0	20	0	895	1800	1800	10/01/2013	0		6063HIP	9	999	0

ECN fornisce una serie di strumenti per una migliore pianificazione della produzione:

inserimento degli ordini di estrusione in locale o remotamente da ERP (SAP/EIS/AS400) tramite interfaccia dedicata.

L'ordine di lavoro si muove da una stazione all'altra.

Inserimento Nuovo Ordine

** ORDERS MANAGER ** PRESS 1

S.A.I. AUTOMATION - BRESCIA (ITALY) TPC - TEMPERATURE PROCESS CONTROL ** NEW ORDER ** PRESS 1

PRESS #1

N° ORDER: 111 DIE: 002368/1A NEW DIE

Order Details

Comments

Extrusion Date 20/0

Production Information

Quantity Ordered (nr) 1 Overrun on Quantity (%) 5 Calculated Production Quantity (nr) 1

Finished length (mm) 6425 Overrun on Finish length (%) 0 Calculated Finished length (mm) 6425

VERIFY DIE RECIPE NEW ORDER

CLOSE

12379	173097/1A	23882939	0	88	3938	177	4	45	674	0	4.21	0	0	999	1	13/01/2016
21397	694168/1	23925112	0	28	1061.76	55	1	45	571	0	1.38	0	0	999	1	13/01/2016

NEW ORDER EDIT ORDER UNHIDE ORDER SUMMARY DETAIL RECIPE DETAIL DIE CARD UTILITIES REFRESH SEQUENCE

Ricette – Parametri Tecnologici

S.A.I. AUTOMATION - BRESCIA (ITALY) TPC - TEMPERATURE PROCESS CONTROL ** RECIPE MANAGER ** PRESS 1

PRESS #1

DIE: 002-188/1A

Temperature Process Parameter	
Target Profile Exit Temp	531 °C
Minimum Profile Exit Temp	520 °C
Dynamic Speed Offset Limit	10 %
Step Speed Offset Limit	10 %
Front of Billet Offset Limit	11 °C
Rear of Billet Offset Limit	12 °C
Minimum Quench Rate	5 °C/s
Ave Ram Speed	11.0 mm/s
Extrusion Ram Speed	12.0 mm/s
Upset Pressure	1500 psi
Call Billet Ram Position	200 mm
Actual Weight	782 gr/m
Specified Weight	782 gr/m
Holes	2 nr

Furnace Parameters	
Starter Billet Temp. Exit Front	450 °C
Starter Billet Temp. Rear	440 °C
Starter Billet Length	400 mm
Billet Temp Exit Front	450 °C
Billet Temp Rear	440 °C

Puller Parameters	
Type Of Cut	1 Still/Flying
Calculated Saw Position	250 cm
Pullers Tension	10 kg

Reference Parameters	
Bolster	
Sub Bolster	
Insert	
Ring	0
Die Can	1A
Type	Y S/H
Die Typ	0
Descr	
Description	3P
Comments	Good Job

Order Parameters	
Holes	2 nr
Saw Scrap	0 cm
Stretcher Scrap	0 cm
Butt Length	15 mm
Pushes/Cuts Per Billet	1 nr
Billets Per Cut	1 nr
Number Of Cuts (stacker)	1 nr
Last Billet Length	400 mm

Standard Target Parameters		
Die type/Alloy	Exit temp	Billet temp
Solid 1 hole (°C)	540	440
Solid multi holes (°C)	545	450
Hollow 1 hole (°C)	560	450
Hollow multi holes (°C)	565	470

Recipe Management

Recipe Locked NO

Date Locked 05/15/15

Reason Locked UNLOCK

BEST EXTRUSION

PRINT SCREEN

CLOSE ALERT

Il Software **ECN Pressa** recupera le informazioni da un database relazionale.

Gestisce il processo di estrusione abilitando la comunicazione e lo scambio di informazioni tra i vari organi dell'impianto (Forno, Pressa, Handling) usando le ricette.

Ricette - Parametri

S.A.I. AUTOMATION - BRESCIA (ITALY) ECN - EXTRUSION CONTROL **COOLING PARAMETERS P7**

Die Code
GLO2047

NEXT DIE !!!

WATER

Left 0 m3/h Center 0 m3/h Right 0 m3/h

Lower 0 m3/h

WATER COOLING SELECTION ☐

FANS

Fans Under Rolls Leadout 50 %

Under Rolls Leadout Groups

GR 1	GR 2	GR 3	GR 4
☒	☒	☒	☒

Under Rolls Runout Groups

GR 1	GR 2	GR 3
☒ 25 %	☒ 25 %	☒ 25 %

Under Belts Groups

GR 1	GR 2	GR 3	GR 4
☒	☒	☒	☒

Under Table Rolls - Always / Only Extrusion

GR 1	GR 2	GR 3
☒	☒	☒

HOOD

Hood height 30

Hood main fans cooling always / only extrusion ☐

Cooling last billet ☐

HOOD FANS

Upper Left Side	Upper Right Side
10 m/s	10 m/s

Upper Central

Left Side	Right Side
25 m/s	25 m/s

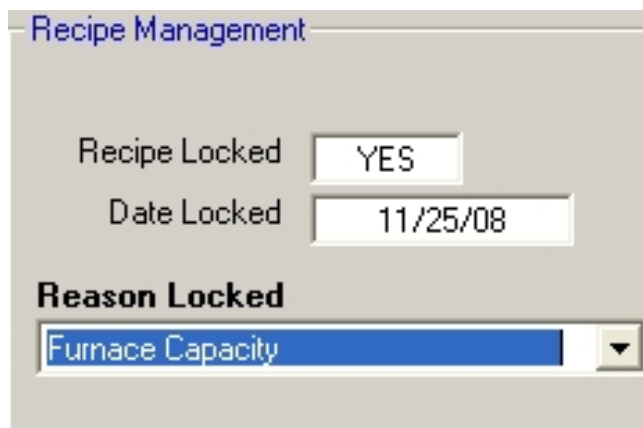
Lower Left Side 15 m/s **Lower Right Side** 15 m/s

COOLING PARAMETER IN AUTO MODE ☒

RETURN BEST EXTRUSION

Il Software **ECN Press** gestisce direttamente l'impianto attraverso la comunicazione con i PLC.

Blocca Ricette



The screenshot shows a 'Recipe Management' window with the following fields:

- Recipe Locked:** YES
- Date Locked:** 11/25/08
- Reason Locked:** Furnace Capacity

Ricette testate:
il sistema viene limitato nella velocità dai vincoli del processo produttivo senza degradare la qualità.

Blocca matrice, identificare la ragione e la data, attiva gli status per un controllo avanzato.

Ottimizzazione Lunghezze e Scarti

TPC - TEMPERATURE PROCESS CONTROL ** RECIPE MANAGER - CALCULATOR ** PRESS 1

PRESS #1 DIE: 100-0781/2 N° ORDER: 1

Default Recipe Parameters

Holes	1	nr	Number Of Holes In Die
Billet Diameter	177	mm	Diameter Of Billet
Production Qty	500	nr	Number Of Finished Pieces for Production
Finished Length	3000	mm	Cut Length of Finished Piece
Saw Scrap	0	cm	Estimated Scrap At Saw For Each Run Out Length
Stretcher Scrap	0	cm	Estimated Scrap At Stretcher For Each Run Out Length
Butt Length	15	mm	Butt Length
Pushes/Cuts Per Billet	1	nr	Number Of Pushes/Cuts Per Billet per Run Out Length
Billets Per Cut	1	nr	Number Of Billets Per Cut Per Run Out Length
Number Finished Cuts (stacker)	4	nr	Number Of Cuts/Pieces At The Finish Saw Per Run Out Length
Actual Weight	864	gr/m	Actual Weight per Foot of the Profile
Specified Weight	864	gr/m	Specified/Print Weight per Foot of the Profile

ORDER DETAIL

Calculated Production Parameter

Billet Length	723	mm	Total Length Of Billet
Runout Length	12000	cm	Total Profile Length Per Billet
Number Of Billets	125	nr	Number Of Billet To Complete Order
Calculated Saw Position	12000	cm	Calculated Saw Position
Recovery	100	%	Calculated Theoretical Recovery
Calculated Extr Time	0	min	Total Calculated Extrusion Time

Adjust for First And Last Billet Lengths

Target Starter Billet Length	400	mm	Length Of Starter Billet In Recipe
Actual Starter Billet Length	723	mm	Length Of Starter Billet For Production
Target Last Billet Length	400	mm	Length Of Last Billet In Recipe
Actual Last Billet Length	723	mm	Length Of Last Billet For Production

CLOSE

Funzione di calcolo sul prodotto

Aumento di produttività e riduzione degli scarti:

minimizza lo scarto della saldatura, previene le deformazioni del profilo ed ottimizza la lunghezza della billetta.

Parametri in Automatico

ECN - EXTRUSION CONTROL ** RECIPE MANAGER / NEXT EXTRUSION P7

Die Code	Plan Alloy	Lot Nr	Order Nr
GLO1928/1M	6060	405726624	8206224

ISOTHERMAL / ECN		FURNACE		PULLER	
MaxProfileTemperature (°C)	540	Tapper (°C)	15	Tension (kg)	40
MinProfileTemperature (°C)	510	Billet Temperature (°C)	450	Evacuation speed (m/sec)	60
OffsetStepSpeedLimit (%)	10	1st Billet Tapered (°C)	45	Evacuation compensation (cm)	20
OffsetDynSpeedLimit (%)	10	1st Billet Temperature (°C)	450	Profile high (mm)	20
OffsetFrontTemp (°C)	10	Single Billet / 2 Parts Billet	☐	Saw blade speed during cut (%)	40
OffsetRearTemp (°C)	10				

ORDER PARAMETER		PRESS	
Holes (n)	1	Extrusion Speed (mm/s)	8.7
Minimum butt end (mm)	20	Max pressure in extrusion (bar)	310
Front scrap allowance (mm)	1500	Upset pressure (bar)	80
Back scrap allowance (mm)	1500	Pump upset (%)	60
Welding allowance (mm)	750	Time of burp (msec)	200
Theoret Profile Weight (g/m)	1960	Compression pressure (bar)	110
Last weight per meter die now at press (g/m)	1974	Pump in compression (%)	100
Product Calculation		Pump in soft compression (%)	50
Number cuts per billet (n)	1	Rising time in extrusion (msec)	1000
Billet per Cuts (n)	1	Speed in end extrusion (%)	50
Number of Cuts (n)	8	Falling space (mm)	20
Billet Length (mm)	947	Slow space (mm)	1
1st Billet Length (mm)	947	Butt end Target (mm)	20
Extrusion (Profile) length (m)	51.80	Billet Call (mm)	400
Number billets to extrude (n)	2	Fix speed/ Isothermal	☐
Fix saw position (m)	51.80		

Desacceleration in evacuation	
Slow	☐
Medium	☐
Fast	☐
Very fast	☐

COOLING / QUENCHING

CLOSE BEST EXTRUSION

Ogni parametrio di estrusione ha un flag.
Spuntare il flag significa che sara usato in automatico.

Sequenza di Estrusione

S.A.I. AUTOMATION - BRESCIA (ITALY) ECN EXTRUSION CONTROL ** ORDERS MANAGER P7 ** EN English (dom)

Lot Nr	Order Nr	Die Code	Holes	Bars Nr	Bars Len	Bill To Extr	Bill Len	Butt Len	Prof Len	Prof Weight	Fr Scrap	Bk Scrap	Extr Date	Next Ord	Oven Nr	Plan Alloy	Balc Nr	Seq	Quality
412922520	7608325	202465/1	1	350	3660	1	0	20	0	2347	1500	1500	22/06/2012	7		6005A	0	1	0
883948902	7695100	202352	3	181	5000	1	0	20	0	655	1500	1500	25/06/2012	0		6060	1	2	0
154140006	7695142	203209	6	133	5000	1	0	20	0	320	1500	1500	25/06/2012	0		6060	1	3	0
170952985	7691822	2-6407	4	43	5000	1	0	20	0	650	1500	1500	25/06/2012	0		6060	1	4	0
577362595	7691505	3-4740/+	4	60	6100	1	0	20	0	477	1800	1800	25/06/2012	0		6060	1	5	0
289970022	7695465	202649	1	5	5710	1	0	20	0	3642	1500	1500	25/06/2012	0		6060	2	6	0
107942041	7691480	GL01815/3M	1	96	6100	1	0	20	0	1980	2000	2000	25/06/2012	0		6060	1	7	0
107942041	7695095	GL01815/3M	1	288	6100	1	0	20	0	1980	2000	2000	25/06/2012	0		6060	1	7	0
213203097	7695139	GL01971/1	4	394	5000	1	0	20	0	587	1800	1800	25/06/2012	0		6060	1	8	0
010543975	7684521	112998/1M	4	756	3650	1	0	15	0	408	1800	1800	22/06/2012	0		6060	13	9	0
665928858	7637148	001234/004	1	158	3124	1	0	30	0	1962	1500	1500	22/06/2012	0		6063 A	13	10	0
439611545	7698159	3-5948/+	1	45	5000	1	0	20	0	4903	1250	1250	25/06/2012	0		6060	1	11	0
606760601	7695098	3-6039/1	2	70	5000	1	0	20	0	988	1500	1500	25/06/2012	0		6060	1	12	0
052367513	7691480	GL01815/2M	1	96	6100	1	0	20	0	1967	2000	2000	25/06/2012	0		6060	1	13	0
052367513	7695095	GL01815/2M	1	288	6100	1	0	20	0	1967	2000	2000	25/06/2012	0		6060	1	13	0
110029870	7695104	GL02046	4	325	6500	1	0	20	0	583	1800	1800	25/06/2012	0		6060	1	14	0
117365702	7695160	GL02048	4	354	6500	1	0	20	0	492	1200	1200	25/06/2012	0		6060	1	15	0
116321126	7695159	GL02053	3	277	6500	1	0	20	0	605	1800	1800	25/06/2012	0		6060	1	21	0
819008666	7695157	GL02054/1	4	1019	6500	1	0	20	0	605	1800	1800	25/06/2012	0		6060	1	22	0
694572697	7687839	3-6552	4	252	3600	1	0	20	0	2940	1500	1500	25/06/2012	0		6063HIP	1	999	0
930354535	7687838	6-0156	2	158	3600	1	0	20	0	1089	1500	1500	25/06/2012	0		6063HIP	1	999	0
427514724	7695367	3-5997/B	1	6	6100	1	0	20	0	1573	3000	2000	25/06/2012	0		6060	2	999	0
35993753	7695489	GL01660/1	3	47	5000	1	0	20	0	2028	1500	1500	25/06/2012	0		6060	2	999	0
707372385	7659293	1-0800	6	479	4000	1	0	20	0	1245	1500	1500	22/06/2012	0		6063HIP	2	999	0
587073689	7698166	120833/1	1	113	3000	1	0	20	0	1420	1400	1900	22/06/2012	0		6063 A	13	999	0
721349478	7695079	121144/002	1	55	6500	1	0	20	0	1089	1500	1500	25/06/2012	0		6063HIP	2	999	0
707484518	7695078	121264/3	2	220	6100	1	0	20	0	1573	3000	2000	25/06/2012	0		6063HIP	2	999	0
440287386	7688059	121431/18M	1	990	6000	1	0	20	0	1573	3000	2000	25/06/2012	0		6063HIP	2	999	0
663013864	7691761	202036	1	495	4120	1	0	15	0	1668	1500	1500	25/06/2012	0		6063HIP	2	999	0
102721870	7662187	2-6487/M	6	367	3800	1	0	15	0	405	1500	1500	25/06/2012	0		6063HIP	2	999	0
100430150	7662189	2-6489/+	4	118	4000	1	0	30	0	421	1800	1800	25/06/2012	0		6063HIP	2	999	0
482039961	7686200	3-6792	1	50	3048	1	0	20	0	3542	1500	1500	25/06/2012	0		6063HIP	2	999	0
518875289	7695369	3-6815	1	36	3800	1	0	20	0	2028	1500	1500	25/06/2012	0		6063HIP	2	999	0
257607527	7691478	GL02009	2	60	5000	1	0	20	0	1245	1500	1500	22/06/2012	0		6060	13	999	0
199248028	7660721	093437/004	1	114	4600	1	0	30	0	1420	1400	1900	22/06/2012	0		6063 A	13	999	0
432857959	21046	200446	2	46	5100	1	0	20	0	2245	1500	1500	22/06/2012	0		6063 A	13	999	0
337160039	21155	200574	1	11	6120	1	0	30	0	3509	1500	1500	22/06/2012	0		6063 A	13	999	0
340787559	21156	200574	1	5	4910	1	0	30	0	3509	1500	1500	22/06/2012	0		6063 A	13	999	0
341936999	21158	200574	1	15	4100	1	0	30	0	3509	1500	1500	22/06/2012	0		6063 A	13	999	0
184232325	7691295	ANG 438/4	3	60	5500	1	0	20	0	977	1800	1800	22/06/2012	0		6063 A	13	999	0

UTILITIES NEW ORDER EDIT ORDER RETURN OPERATOR CONSOLE DIE CARD RECIPE DETAIL

E' possibile settare fino a 20 ordini in sequenza in ogni momento.

Raccolta Dati e Report

**** CURRENT EXTRUSION REPORT ****

Date	Shift	Time	Order Number	Die Code	Extruded Billet Inr	Set Profile Temp (°F)	Average Profile Temp (°F)	Ram Speed Target (in/min)	Ave Ram Speed Target (in/min)	Extr Time (sec)
06/16/2009	1	09:51:49 AM	ORDER21	027157-100	1	1020	953	12	12	102
06/16/2009	1	09:54:22 AM	ORDER21	027157-100	2	1020	978	12	12	101
06/16/2009	1	09:56:56 AM	ORDER21	027157-100	3	1020	977	12	12	101
06/16/2009	1	09:59:30 AM	ORDER21	027157-100	4	1020	978	12	12	101
06/16/2009	1	10:02:03 AM	ORDER21	027157-100	5	1020	977	12	12	102

06/16/2009 SELECT FILTER

06/16/2009 Lookup By Date

06/16/2009 Lookup By Date And Die

06/16/2009 Lookup By Die

06/16/2009 Lookup By Order

06/16/2009 Lookup By Date And Shift

06/16/2009

AUTOMATION - BRESCIA (ITALY) ECN - EXTRUSION CONTROL

**** BILLET REPORT ****

Shift	Time	Order Number	Profile	Die Copy	Extruded Bil
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Lookup By Date

From : To :

Month 11 11

Day 18 18

Year 2009 2009

11/18/2009 11/18/2009

Die / Order : Please select one ...

Shift : 1 2 3 4

SELECT

CLOSE

#Record : 0

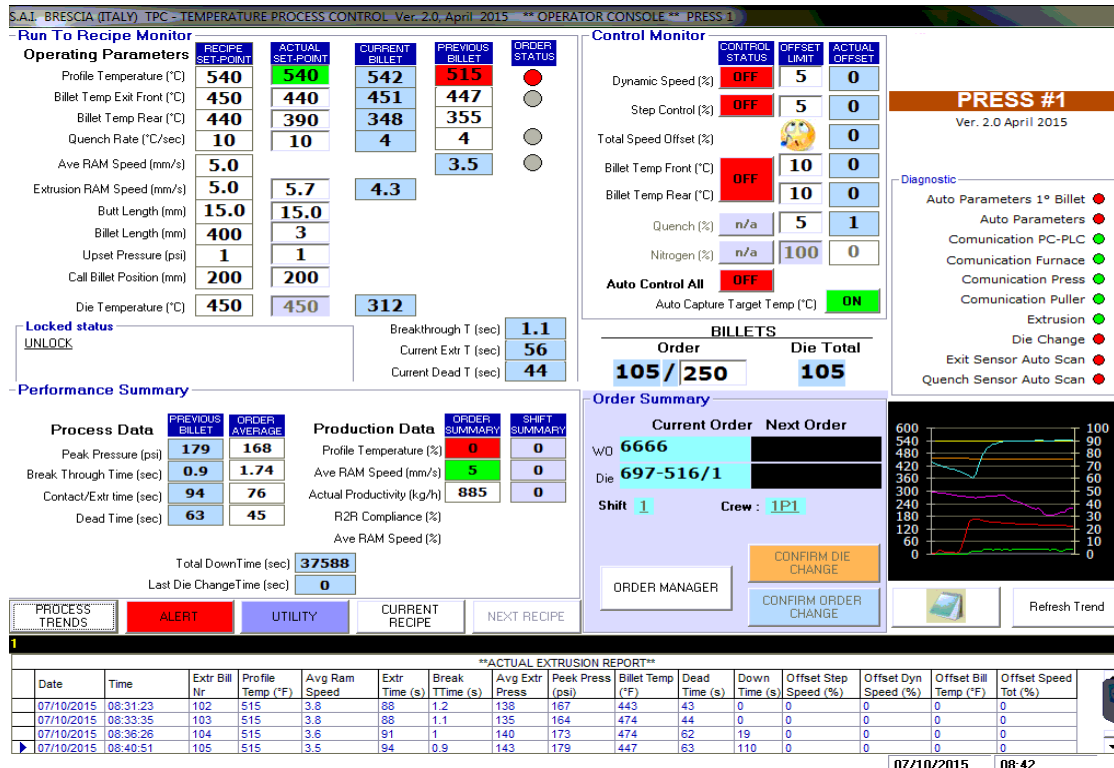
CLOSE DELETE SELECTION CURRENT EXTRUSION REPORT ALARM REPORT DIE REPORT DIE CHANGE REPORT DOWNTIME REPORT EXPORT SELECTION

Tutti i dati di produzione (billetta per billetta, temperature, pressioni lunghezze, pesi, quantità etc.) vengono raccolti e salvati in database. In ogni momento sarà possibile rintracciare ordini, matrici, guasti, per successive revisioni, analisi, statistiche, manutenzioni.

Console Operatore

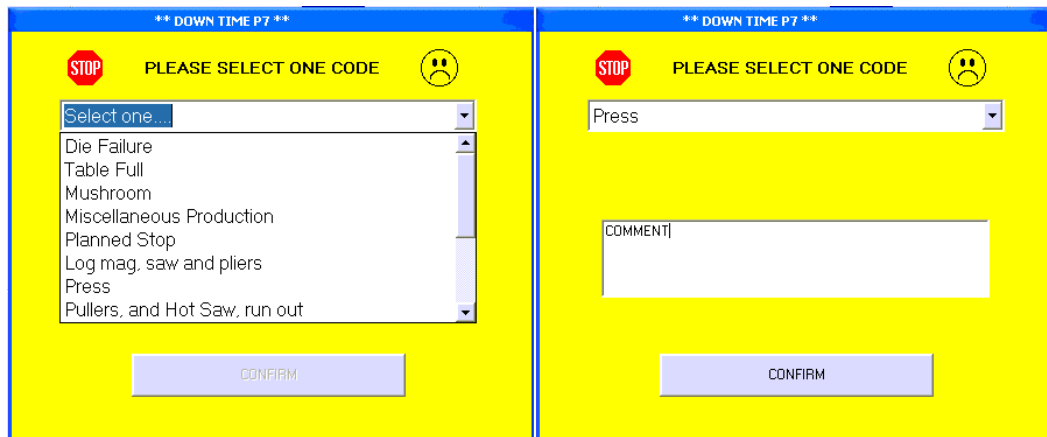
Design semplice ed intuitivo.

Supporta l'operatore con dati di processo in real-time, per un'immediata valutazione sulla conduzione dell'estrusione in corso



Quando il codice matrice è disponibile ECN **cambia la matrice/ordine automaticamente.**

Down Time



Automaticamente
il popup per il
Down Time
traccia la ragione
e i commenti
relativi all'evento
per la funzione di
report.

Analizzatore delle Migliori Estrusioni

PRESS #1

Best Extrusions

DIE/PROFILE: 1000769/1

	Date	Extr Bill Nr	Ave Ram Speed in/min	Recovery Rate	Max Prof Temp °F	Ofs Step Speed %	Ofs Dyn Speed %	Ofs Bill Temp °F	Quench Rate %	Die Temp °F	Billet Temp °F	Prod lbs/h	Operator
►	11/04/2015	9	5		549	5	5	15	3	420	454	1080	B
	11/09/2015	5	6		565	5	5	15	3	420	460	1581	R
	12/02/2015	20	5		560	5	5	15	3	420	460	1051	B
	11/15/2016	35	9		546	5	5	15	3	420	460	2908	O

Per ogni matrice ECN fornisce «le 5 migliori Estrusioni».

Confronta il miglior Tempo d Estrusione e la percentuale di Recupero, seleziona tutti i parametri usati (ricette) e li salva del database.

The «5 best».

Altre Funzioni

S.A.I. AUTOMATION - BRESCIA (ITALY) - ECN EXTRUSION CONTROL - DIE OVEN

DIE OVEN

Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9
ABX319/1	MT25/1	KNR103/1	0	0	0	0	0	0
SOAK TIME 04:12:44	SOAK TIME 02:33:27	SOAK TIME 00:59:55	0	0	0	0	0	0
DIE INFO	DIE INFO	DIE INFO	DIE INFO	DIE INFO	DIE INFO	DIE INFO	DIE INFO	DIE INFO

INSERT HOME TAKE OUT

INSERT

Select Die (PgUp - PgDown to scroll the list)

ABX319/1

Select Oven

C1 C2 C3 C4 C5 C6 C7 C8 C9

TAKE OUT

Select Oven

C1 C2 C3 C4 C5 C6 C7 C8 C9

Forno Matrici.

ECN registra i dati del processo di preriscaldamento e ne tiene traccia in archivio. A tempo e temperatura raggiunta segnala la matrice pronta.

DOWNTIME

Description	Code
Cancelled Run	CR
Log Conveyor (in	D01
Log Oven	D02
Log Shear	D03
Scarp Elevator	D04
Loader Arms	D05
Die Slide (Incl	D06
Container	D07
Limit Switch	D08

EXIT

CHANGE DIE REASON

- Ran OK
- Pick up
- Wall Thickness Variation
- Ovality
- Convexity
- Squareness
- Speed Cracks
- Bearing Changes
- Tooling Clearance
- Peg Broken
- Foreign Body in Billet
- Flatness
- Blisters

CONFIRM

Registrazione e traccia dei **Down Time** e motivi del **Cambio Matrice**

ECN - Stacker

S.A.I. AUTOMATION (BS) ITALY Tel. +39 030 2120944 **RUNNING ORDER**

Lot Nr: **800323550** Total Extruded Bars (Lot) : **375**

Order Nr	Die Code	Customer	Extruded Bars Nr	Bars Nr Ord	Bars Len Ord	Tol Len +	Tol Len -	Tol Qty +	Tol Qty -	Treat	Single Billet	End Date	End Time	Actual Prod Weight gr/m
7818975	114598/001	0	375	889	3000	7	0	10	10	16	False			306

Note Order: 0 Quality Instructions: ..

Bk Scrap: 1500 Fr Scrap: 1500 Tol Len +: 7 Tol Len -: 0 Tol Qty +: 10 Tol Qty -: 10

Basket

Bars Length	Bars Nr	Complete	Weight Kg	Basket Nr
3000	56	Y	51.41	5201309261117

Print Label

Total Bars: **56** Total Weight: **51.41**

ORDER COMPLETED

Scrap

Bars Nr	Code	Bars Nr	Code
2	2	0	0
4	5	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Code Scarp Description

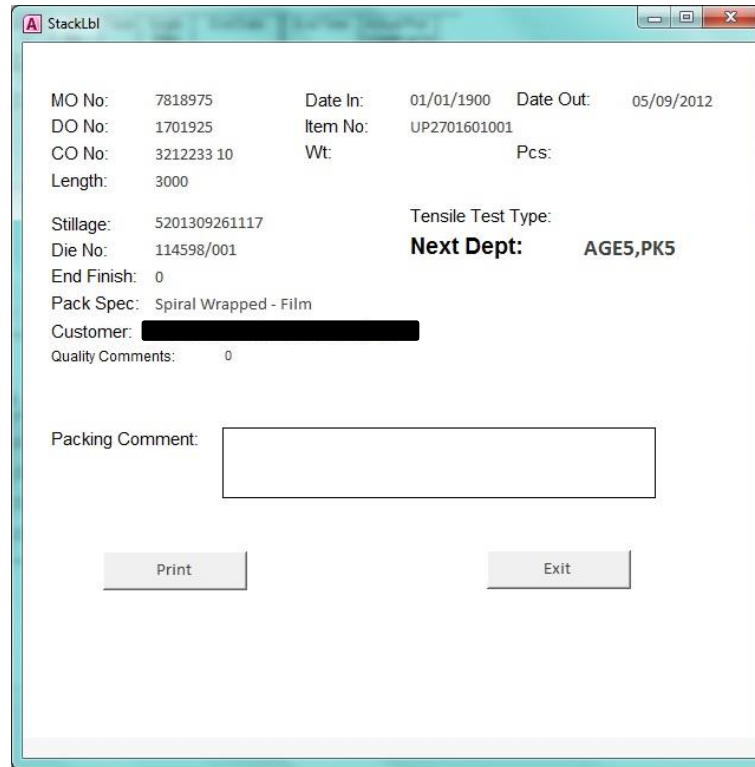
- 1 blister
- 2 surface
- 3 dent
- 4 out of shape
- 5 short cut
- 6 First billet distortion
- 7 twist
- 8 overage
- 9 ripped
- 10 weld

ORDER LIST ORDER SHEET DIE DRAW

ECN provides “traceability” of every single order or production lot. Every time is possible to know the order status.

Using the scraps information the system calculate the net production and it becomes a tool for analysis and statistics.

ECN - Stacker



The screenshot shows a software window titled "StackLbl" with a standard Windows-style title bar. The window contains a form with the following fields and values:

MO No:	7818975	Date In:	01/01/1900	Date Out:	05/09/2012
DO No:	1701925	Item No:	UP2701601001		
CO No:	3212233 10	Wt:		Pcs:	
Length:	3000				
Stillage:	5201309261117	Tensile Test Type:			
Die No:	114598/001	Next Dept:	AGE5,PK5		
End Finish:	0				
Pack Spec:	Spiral Wrapped - Film				
Customer:	[REDACTED]				
Quality Comments:	0				

Below the form fields, there is a "Packing Comment:" label followed by a large empty text box. At the bottom of the window, there are two buttons: "Print" and "Exit".

The system generates and unique code for each basket to follow the order to the packing area with all information for the packing station. This information comes directly from the order (management)

ECN - Stacker

**** ORDER SHEET ****

Date	03/09/2012	Bars Nr Ord	809	Tol Len +	7	%
Order Nr	7818975	Bars Len Ord	3000	Tol Len -	0	%
Treatment	T6	Qty Kg	825	Tol Qty +	10	%
Shipping	0			Tol Qty -	10	%
Test	☐	Alloy	6063HI			
Comments	..					
CLOSE						

Summary of the main information referred to the order running.

If available the die drawing is also shown.

ECN - Packing

S.A.I. AUTOMATION (BS) ITALY Tel. 0039 030 2120944 **ORDER IN PROGRESS*

ORDER : 0001002860 LOT Nr : 9790 17:34:09 11/19/09

Order	Die Code	Customer	Treatment Type	Bars in Furnace (nr)	Finished length (cm)	Quantity Ordered (nr)	Extr Date	Packing Code
0001002860	A029C	117	T5	510	6500	500	28/01/2004	IN

Order Note: 256 CHARS

ITEMS | SCRAP / NOT IN COMPLIANCE

Item (nr)	Packed Bars (nr)	Finished length (cm)	Packing Type	Item Weight (kg)	Packing Date	Packing Time	Operator	Actual Weight (kg)
10541	45	6500	IN	275	01/28/04	14:50:08	Stefano	280
10928	45	6500	PE	250	01/30/04	16:53:39	Stefano	255
10929	40	6500	CR	220	01/30/04	16:54:25	Stefano	225

The final quality controls are performed and a label is printed out containing all the data required for the customer and to ensure product traceability.

SCHOCO INTERNATIONAL

Order Code : 0001002860

Profile : **A029C**

Packing : **PELLICOLA**

Length : 6,500
Alloy : 6060
Treat Code : T5

Packing Date : 01/30/04
Item Nr 10928
Operator Stefano
Shift

BARS NR : 45
NET WEIGHT : 255.0

256 CHARS



SCRAP / NOT IN COMPLIANCE

SCRAPS

Scraped Bars 1 (nr): Scraped Bars 2 (nr):
Defect Code 1: Defect Code 2:

Scraped Bars 3 (nr): Scraped Bars 4 (nr):
Defect Code 3: Defect Code 4:

LOT IN COMPLIANCE ☐ YES ☐ NO

COMPLETED ☐ YES ☐ NO

IN COMPLIANCE NOTE 256 CHARS

ECN - Die Shop

S.A.I. AUTOMATION (BS) ITALY Tel. 0039 030 2120944 - PDM SYSTEM *E.C.N.* DIE SHOP TERMINAL - DIES LIST

Die Code	Number	Press	Status	Nr of Nitriding	Kg After Nitriding	Total Kg
A004C	000	1	DIS	2	0	7132
A005C	000	1	ATN	2	9550	5006
A006C	000	1	0	0	0	0
A007C	000	1	0	0	0	0
A008C	000	1	0	0	0	0
A009C	000	1	DIS	1	0	3167

S.A.I. AUTOMATION (BS) ITALY Tel. 0039 030 2120944 - PDM SYSTEM *E.C.N.* DIE SHOP TERMINAL - DIE LIFE

ID : 89 Alloy : 6060 Customer Ref : 0
Die : A064C Thermal Treat : T5 Customer Code : 108 CO.ME.TI. SRL
Number : 000 Press : 1
Type : PORTHOLE Profile : 0
Week of Revision : 0

Feeder : 0 Insert : A064 Anodizing Perimeter : 0 Theoretical Weight : 392
Bolster : BO-H-10 Lacquering Perimeter : 0 Theor Weigh Tol : 0 %
Sub Bolster : 0 Holes : 4 Diameter : 0
Tickness : 0

Supplier : 1 Order Nr : 0
PHOENIX SPA Order Date : 01/01/1900
Tel : 000000011 Price :
Auto updated fields

Number of Tests : 0 Delivery Date : 02/27/02 Out of service Motive : 0
Corrector : 0 Availability Code : DIS Approval Date : 04/19/02
Store Position : A - 11 Availability : Available To Nitriding Date : 09/07/03

1st Nitriding after Kg : 0 Capacity Kg After Nitriding : 38255 Total Extruded Billets : 1851
2nd Nitriding after Kg : 5000 Kg of Product After Nitriding : 43255 Last Extrusion Kg : 6027
Nr of Nitriding : 8 Total kg gross production : 133424 Last Extr Date : 06/02/2004
Total kg clean Production : 9136 Last Test Date :

Extrusion Note :
Dies Area Note :

CLOSE ORDERS SUMMARY VIEW DIE NUMBER SEND TO NITRIDING PROFILE IMAGE

The user may inquire on any die on demand.

Data referred to the “Die Life” are automatically updated after each extrusion.

ECN - Die Shop - Reports

Standard reports available:

- Correction Planning
- Dies Sent to Nitriding
- Wait for to Nitriding Dies
- Dies Ready for Nitration
- Die List for Customer
- Repaired Die List
- Dies Out of Service List