

The background image shows an industrial setting with large metal beams and a green circular graphic in the center. The text is overlaid on this graphic.

SOFTWARE SYSTEMS FOR THE **DIGITAL** **FACTORY** OF TOMORROW

The Evolution of QMOS Roll Shop Planner



At a glance...

- *About Quad Infotech*
- *Quad Infotech Product Offerings*
- *QMOS RSP .Net Evolution*
- *Roll Shop Cost Analysis Tool*

Quad Infotech / QMOS Background

- Based in Toronto, Canada
- Flagship product: QMOS (QUAD Mill Operating System)
- MES for long products since 1992
- North America's top MES for long steel with 47+ implementations
- Intimate knowledge of the steel process
- An experienced and capable team of engineers with deep knowledge in
 - Steel making
 - Software design and development
 - Project management
 - Business analysis

Our Focus

- We are a customer centric company. Everything we do is based on the needs of our customers
- As a leading software provider to the steel industry, we are continuously exploring new solutions to enable our customers to stay ahead of the industry
- Our business analysts are process experts in steel manufacturing
- Investments in new technologies and big data in providing value-driven deliverables for our customers
- Strive to be the leader in developing software solutions for the Industry 4.0 Steel Manufacturing

QMOS Brand

- Most popular MES in the North American Steel Industry
- Present in USA, Canada, Mexico, India

Customer	# of Mills	Integrated Meltshop	SAF Meltshop	Rolling Mill	Post Processing	SAP Interface	Oracle Business
Gerdau	16			X	X		X
Gerdau Special Steel	3			X	X	X	X
Arjas Steel India	1	X			X	X	X
Gerdau Mexico	1			X	X		X
Nucor Steel	15			X	X		X
Commercial Metals	8				X		X
Steel Dynamics	1			X	X		
Velorec (tubes)	1				X		
WMC (Wire Mesh Corp)	1			X	X		

THE MES for Steel

The Most Implemented MES
for Steel in North America



- End to end process coverage for Melt Shop, Rolling Mill and Finishing and everything in-between
- Full process genealogy
- Integrated quality control
- Planning and scheduling
- Inventory management
- Delay and failure analysis
- Interface with L1 systems
- Operator friendly
- Manufacturing Intelligence and multi-dimensional, drill-down analytics
- 24/7 support

Quad Product Suite

QMOS
Digital Factory



The only MES that
is specifically designed
for the Long Steel Industry

APEX



Process Intelligence
for the Digital Factory
of tomorrow

{ } QMOS
DATA SCIENCE



Machine Learning and
Data Driven Optimization

**SCALE
HOUSE**



Improve performance
and efficiency of your
Scale House Operations

QMOS RECYCLING



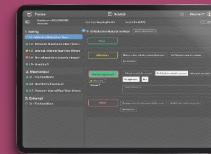
Production Management
System for Ferrous
and Non-Ferrous
Operations

 **EnergyMethods**



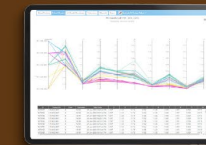
An enterprise
Energy Management System
for the Steel Industry

 **QMOS
JobAid**



Go paperless with all
your forms and job aids

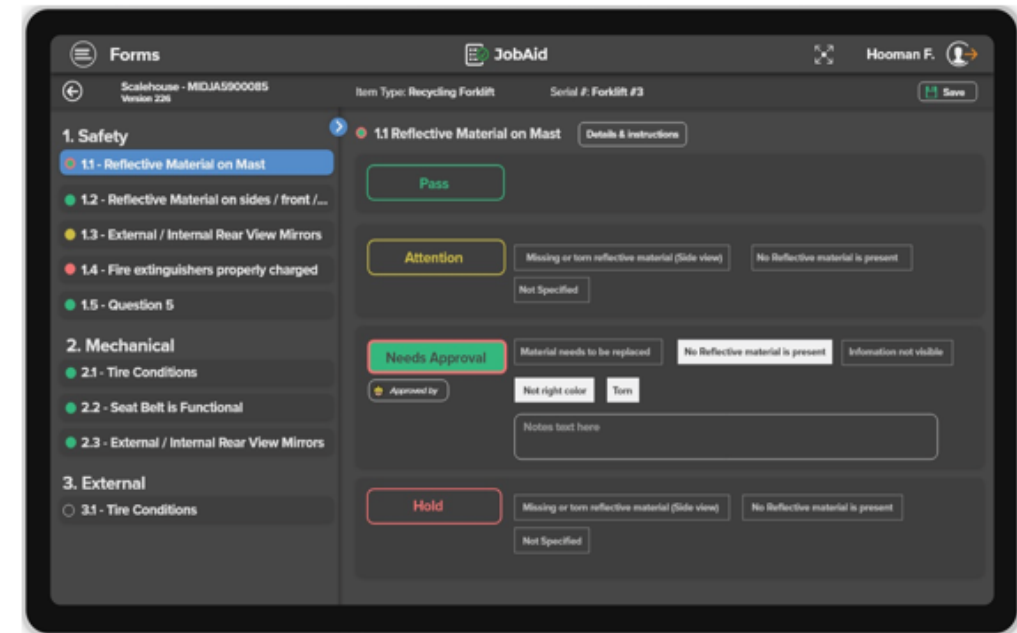
QMOS R-Factor



Fully automated Rolling Mill
process control feedback system

Job Aid – Paperless form management

- Fully custom digital forms such as Safety tours, Pre-inspection, Check lists and more
- Form version management
- Issue and failure tracking
- Failure reason tracking
- Equipment health tracking
- Easy to use operator interface
- Operator instructions
- Full history and audit trail
- Tablet friendly
- Automatic work order generation in the ERP or CMMS



The screenshot displays the JobAid mobile application interface on a tablet. The top bar shows the 'Forms' title, 'JobAid' logo, and user information 'Hooman F.'. Below the header, the form is titled 'Scalehouse - MIDJA5900085' and 'Item Type: Recycling Forklift'. The form is organized into sections: '1. Safety', '2. Mechanical', and '3. External'. Under '1. Safety', there are sub-items: '1.1 - Reflective Material on Mast', '1.2 - Reflective Material on sides / front / ...', '1.3 - External / Internal Rear View Mirrors', '1.4 - Fire extinguishers properly charged', and '1.5 - Question 5'. The '1.1 - Reflective Material on Mast' item is currently selected, showing a 'Pass' button and a 'Needs Approval' button. The 'Needs Approval' button is highlighted with a red border. Below the 'Needs Approval' button, there are input fields for 'Material needs to be replaced', 'No Reflective material is present', and 'Information not visible'. There is also a 'Notes text here' field. The '3. External' section has a sub-item '3.1 - Tire Conditions'.

Rfactor Management System

Safely increase productivity & reduce need to measure hot bars

- Reduced cobbles & out of spec bars
- Setup sheets that reflect how product is actually rolled
- Identify & improve product issues during the shift
- Involve operators in continuous improvement
- Safe & effective training of new operators
- Get the most out of every shift

Rfactor Management System

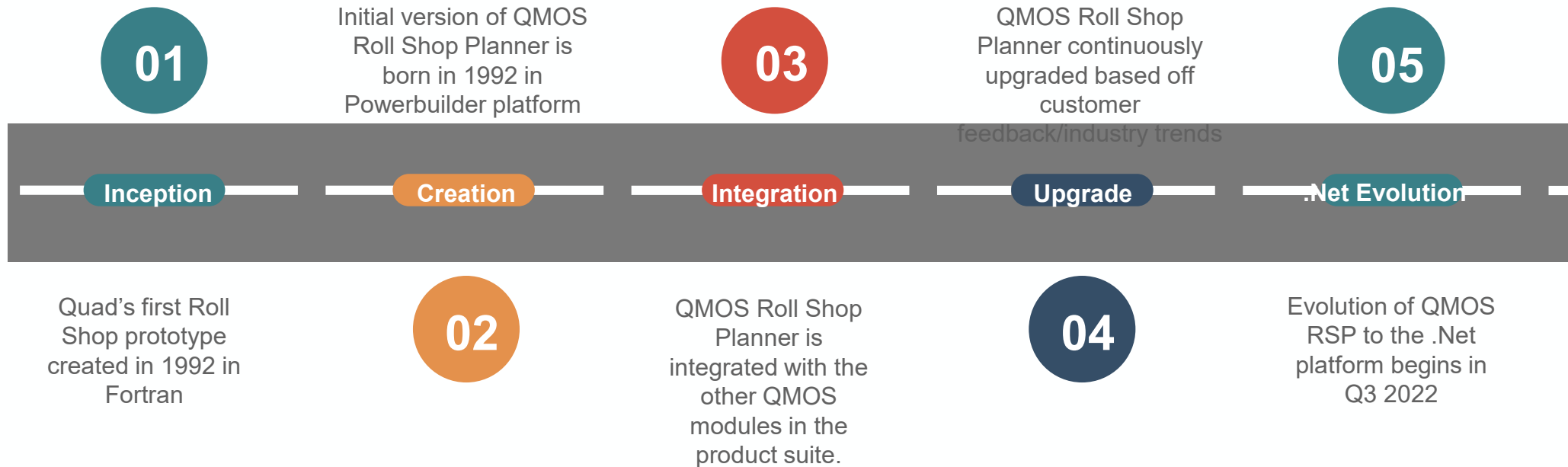
QMOS R-factor System presents R-factors in a meaningful format that Operators can understand & use in real time during the shift to improve shift performance



Shows if any stands are out of spec

QMOS Roll Shop Planner

A quick look at the evolution of QMOS Roll Shop Planner over the years



QMOS RSP .Net Evolution: Why??

- ❑ Change in platform(.net vs PowerBuilder) enables Quad to leverage latest technologies and frameworks
- ❑ Redesigned, modern screens to aid in better user experience and intuitiveness
- ❑ Improved screen processing times as a result of code re-engineering
 - Processing will now mostly occur at the database level, allowing for data to be processed behind the scenes and effortlessly refreshed and shown on multiple instances of the same screen with no adverse effects to operations

QMOS RSP .net Evolution: How??

- ❑ QMOS RSP Evolution Project began officially at Quad Infotech in Q3 2022
- ❑ Dedicated scrum team focused on delivery of new .net RSP screens(UI/UX designer, 3 business analysts, 3 .net developers, RS product owner, RS scrum master)
- ❑ .net development of main RSP screens projected to be completed by end of Q2 2023

QMOS RSP Allocate screen (Current)

File RSP Favorite Edit Mill Window Help

Exit First Row Prior Row Next Row Last Row Search Query Retrieve W/O Planning Roll Card PrintTag Favorite

QMOS RSP 20.0

Roll Set: 01-001/002 **Mill Size:** HS4! **Stand:** 1 **Amt Off:** 9.000

DWG: 1C **V:** 01 **Desc:** 1 STD. (NEW-HEX-OVAL)

☐ Consign ☒ New ☐ Old **Status:** Assigned

☐ Roll Barrel Dwg **Material:** **Allocate**

☐ Mill size **Hardness:** Min Max **Retrieve**

☐ Item **Roll Diameter:** Min Max

☐ Specs

Pos. **Roll** **Diameter** **Foundry No**

→ T 01-002 520.000 1685820

B 01-001 520.000 32537

☐ Scrap ☐ Old ☐ Broken ☒ New

Date Removed: 10/04/2022 **Remove**

Reason: **Remove All**

Foundry Number	Item Id	Item	Roll Diameter	Material	Hardness	Mill Size	Width	Location	Row	Supplier	Roll Status	Roll Barrel Drawing	Ver.	Position	Blank Diameter	New Diameter	Scrap Diameter	% Remain	Tons Rolled	Purchase Cost	Current Value
1640959	370G2ULTX-109	375mm ULTIMA X SD>=45	370.000	Ultima II CCDPLX		G2S	650	STD 12 RACK #1	B	British Rollmaker	New	7A		1B	370.000	370.000	310.000	100.0%		8,920.80	8,920.80
1640962	370G2ULTX-109	375mm ULTIMA X SD>=45	370.000	Ultima II CCDPLX		G2S	650	STD 12 RACK #1	B	British Rollmaker	New	7A		1B	370.000	370.000	310.000	100.0%		8,920.80	8,920.80
1674649	350G1CCSGA-1	350mm CC DUPLEX SGA IRON ROLLS. SD>=60	350.000	CCSGA		G1S	600			British Rollmaker	New				350.000	350.000	.000	100.0%		1,804.75	1,804.75
1675640*	360G2CCSGP-1	360mm G2S CCDUPLEX SGP IRON ROLLS.	360.000	SGP		G2S	650			British Rollmaker	New				360.000	360.000	.000	100.0%		2,279.82	2,279.82
1675694	350G1CCSGA-1	350mm CC DUPLEX SGA IRON ROLLS. SD>=60	350.000	CCSGA		G1S	600	NEW ROLL RACK#:	G	British Rollmaker	New				350.000	350.000	.000	100.0%		1,804.75	1,804.75
1675915	370G2CCSGP-1	370mm G2S CCDUPLEX SGP IRON ROLLS.	370.000	S.G.P.		G2S	650			British Rollmaker	New				370.000	370.000	.000	100.0%		2,309.01	2,309.01
1675916	370G2CCSGP-1	370mm G2S CCDUPLEX SGP IRON ROLLS.	370.000	S.G.P.		G2S	650			British Rollmaker	New				370.000	370.000	.000	100.0%		2,309.01	2,309.01
1675917	370G2CCSGP-1	370mm G2S CCDUPLEX SGP IRON ROLLS.	370.000	S.G.P.		G2S	650			British Rollmaker	New				370.000	370.000	.000	100.0%		2,309.01	2,309.01
1675918	370G2CCSGP-1	370mm G2S CCDUPLEX SGP IRON ROLLS.	370.000	S.G.P.		G2S	650			British Rollmaker	New				370.000	370.000	.000	100.0%		2,309.01	2,309.01
1676599	720R0NDP-105	720mm MODULAR STATIC CAST SGP IRON ROLLS. DWG: P-117218	750.000	S.G.P.		CTS750	500			British Rollmaker	New			1B	750.000	720.000	.000	104.2%		5,000.00	5,000.00
1676600	720R0NDP-105	720mm MODULAR STATIC CAST SGP IRON ROLLS. DWG: P-117218	750.000	S.G.P.		CTS750	500			British Rollmaker	New			1B	750.000	720.000	.000	104.2%		5,000.00	5,000.00
1676602	720R0NDP-105	720mm MODULAR STATIC CAST SGP IRON ROLLS. DWG: P-117218	750.000	S.G.P.		CTS750	500			British Rollmaker	New			1B	750.000	720.000	.000	104.2%		5,000.00	5,000.00
1676606	720R0NDP-105	720mm MODULAR STATIC CAST SGP IRON ROLLS. DWG: P-117218	750.000	S.G.P.		CTS750	500			British Rollmaker	New			1B	750.000	720.000	.000	104.2%		5,000.00	5,000.00
1676807	360G1CCSGA-1	360mm G1S CCDUPLEX SGA IRON ROLLS.	360.000	CCSGA		G1S	600	NEW ROLL RACK#:	E	British Rollmaker	New				360.000	360.000	.000	100.0%		2,189.50	2,189.50
1681152	390G1CCSGA-1	390mm G1S CCDUPLEX SGA IRON ROLLS.	390.000	CCSGA		G1S	600			British Rollmaker	New				390.000	390.000	.000	100.0%		2,464.12	2,464.12
1681153	390G1CCSGA-1	390mm G1S CCDUPLEX SGA IRON ROLLS.	390.000	CCSGA		G1S	600			British Rollmaker	New				390.000	390.000	.000	100.0%		2,464.12	2,464.12
1681564	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,546.00	1,546.00
1681565	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,546.00	1,546.00
1681567	340G1CCSGA-1	340mm CC DUPLEX SGA STEEL SD>=48	340.000	CCSGA		G1S	600			British Rollmaker	New				340.000	340.000	.000	100.0%		1,389.93	1,389.93
1681568	340G1CCSGA-1	340mm CC DUPLEX SGA STEEL SD>=48	340.000	CCSGA		G1S	600			British Rollmaker	New				340.000	340.000	.000	100.0%		1,389.93	1,389.93
1685820	520RGCCSGP-1	520mm CCDUPLEX SGP IRON ROLLS.	520.000	CC SP WOD - RR455		HS455	750			British Rollmaker	In Use				520.000	520.000	.000	100.0%		3,265.00	3,265.00
1686268	360G2CCSGP-1	360mm G2S CCDUPLEX SGP IRON ROLLS.	360.000	SGP		G2S	650			British Rollmaker	New				360.000	360.000	.000	100.0%		2,350.56	2,350.56
1686970	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686971	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686972	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686973	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686974	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686975	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686976	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64
1686977	330G1CCSGA-1	330mm CC DUPLEX SGA STEEL SD>=45	330.000	CC SGA		G1S	600			British Rollmaker	New				330.000	330.000	.000	100.0%		1,867.64	1,867.64

QMOS RSP Allocate screen (Evolution)

Roll Shop Planning - Allocate

QMOS

Danilo C.

Search:

Roll Set ID:

Advanced Search

Roll Set:

Roll Set ID: 01-001/002

Mill Size: HS455

Stand: 1

Amt Off: 9.000

V: 01

DWG: 13A3

Desc: Small Near Squares Edger 13-17,13-36,13

Remove All

Find Rolls

Pos.	Roll	Diameter	Foundry No
Top	01-004	520.000	--
Middle	01-005	520.000	J09505
Bottom	01-006	520.000	J09506

Roll Shop Planning - Allocate

QMOS

Danilo C.

Allocating

Roll Barrel Dwg ☒ Item ☒ Mill Size ☒ Specs ☒

Confirm

Status: All

Roll Diameter: Min. Max.

Material: Select

Hardness: Min. Max.

Apply Filter

Foundry Number	Item ID	Item	Roll Diameter	Material	Hardness	Mill Size	Width	Location	Supplier	Roll Status	Roll Barrel Drawing	Blank Diameter	New Diameter	Pos.
J09504	520RGCCSGP-101	520mm Sand Springs CPM9V	520.000	CPM 9V	30	HS455	750	Roughing Rack #03	HB1-HEBEI	In Use		520.000	520.000	Middle
J09505	520RGCCSGP-105	520mm CCDuplex SGP Iron Rolls	520.000	CPM 9V	30	HS455	750	Roughing Rack #10	HB1-HEBEI	In Use	1C	520.000	520.000	Bottom
J09506	520RGCCSGP-103	520mm CCDuplex SGP Iron Rolls	520.000	CPM 9V	30	HS455	750	Roughing Rack #18	HB1-HEBEI	New		520.000	520.000	--
J09509	520RGCCSGP-104	520mm CCDuplex SGP Iron Rolls	520.000	CPM 9V	30	HS455	750	Roughing Rack #05	HB1-HEBEI	New		520.000	520.000	--
J09508	520RGCCSGP-102	520mm Sand Springs CPM9V	520.000	CPM 9V	30	HS455	750	Roughing Rack #22	HB1-HEBEI	New		520.000	520.000	--
32538	520RGCCSGP-110	520mm CCDuplex SGP Iron Rolls	520.000	CPM 9V	30	HS455	750	Roughing Rack #06	HB1-HEBEI	New		520.000	520.000	--
32539	341RGCCSGP-122	341mm Sand Springs CPM9V	341.000	CPM 9V	30	HS455	750	Roughing Rack #07	HB1-HEBEI	New		520.000	520.000	--
1685821	480RGCCSGP-100	480mm Sand Springs CPM9V	480.000	Nodular Iron	30	G25	750	Roughing Rack #11	HB1-HEBEI	New		520.000	520.000	--
1685822	442RGCCSGP-118	442mm CCDuplex SGP Iron Rolls	442.000	CCSGA/SGP	30	G25	750	Roughing Rack #15	HB1-HEBEI	New		520.000	520.000	--

QMOS RSP Work Order Planning – Current vs Evolution

QMOS RSP 20.0

Work Order : 13972 Roll Barrel Drawing : 1C V: 01

Priority : 0 Description : 1 STD. (NEW-HEX-OVAL)

Roll Set ID : 01-001/002

Foundry No.: 1685820 / 32537 Stand ID : 1 New Diameter : 520.000

Job Plan : 1 STAND FLAT BTM OV/ Average Amt off : 9.000 Average Diameter : 520.000

Diameter Details Scrap Diameter : 221.000

WO Fixed Note : WO Note :

Roll Barrel Note :

Roll Set Note :

Issue Date : 10/04/2022

Due Date : Start Date : 10/4/2022

Completion Date : Planned Duration : .00

Work Order Status : In Progress Actual Duration : .00

Roll Shop Planning - Work Order QMOS

View / Edit Work Order Turn Priority Create W.O. Save

Work Order: 13005 Priority: 7

Employee: Danilo C. W.O. Status: In progress Duration: 18h

Issue Date	Start Date	Due Date	Comple. Date
12/10/2021	12/11/2021	01/05/2022	--

WO Fixed Note: 2x1 CH
Be aware of the possibility of under cutting at the drive side of the top roll pass. Check that the insert seats are tight.

WO Note:

Roll Barrel Note:

Roll Set Note: Use rough sprayweld process.

Roll Set ID: 01-001/002

Foundry No: J09504 / J09505 / J09506 Stand ID: 4

Roll Barrel Drawing: 4D - 4STD RNDS & EDGR (75mm CTR) - V: 01

Diameter Details:

Pos.	Roll	Foundry No	New	Collar	Current	Scrap
T	01-001	J09504	370		355	310
M	01-002	J09505	370		355	310
B	01-003	J09506	370		355	310

Job Plan: 2x1x1/8" Channel Procedure

History:

Date	Diameter (mm)	Type
Jan 18 2020	350	Roll Barrel Drawing Change
Sep 02 2020	330	Roll Barrel Drawing Change
May 25 2021	310	Roll Barrel Drawing Change
Feb 09 2021	290	Roll Barrel Drawing Change
Dez 12 2021	250	Selected Work Order

QMOS RSP Work Order Turn Results – Current vs Evolution

FileRSPFavoriteEditMillWindowHelp

QMOS RSP

QUAD

Work Order

Labor

Roll Set Turn

Lathe

Work Order : 13972

Roll Barrel Drawing : 1C

V: 1

Priority : 0

Description : 1 STD. (NEW-HEX-OVAL)

Roll Set ID : 01-001/002

Stand ID : 1

New Diameter : 520.000

Foundry No.: 1685820 / 32537

Average Amount off : 9

Current Diameter : 520.000

Diameter Details

Scrap Diameter : 442.000

Pos.	Roll No.	Foundry No.	Turn Dia.	Hardness	Date Turn	Location	Row	Note
T	01-002	1685820	519.500	.0	10/4/2022	IN RTA		
B	01-001	32537	519.500	.0	10/4/2022	IN RTA		

Ready

17:50:28 - 10/4/2022

Roll Shop Planning - Turn

QMOS

Roderick S.

Work Order Result

Foundry No

New

Collar

Amt. Off

Current

Scrap

Duration:

J09504

520

15

355

310

06.00

Pos: Top

Roll: 01-004

Lathe ID:

Program:

Tool:

Offset:

HERKULES CNC ROL TURNING

4DsR0.cod

3eSr0.cod

50.000

Type Note

Procedure 1: Dressing T - Dressing standard mill rolls

Complete

Employee Name	Date	Hours	Amt. Off	Turn Diam.	Hardness	Location	Row
Danilo Castor	09/22/2022	04:00	50.000	307.000	700	EDGERS	A
Yuhan Wang	09/23/2022	02:00	50.000	307.000	700	EDGERS	A

It needs double attention next time

Type Note

Procedure 2: New Set T - Turn new set rolls complete

Roll Shop Cost Analysis

<div> <div> <div>APEX</div> <div>Digital Factory</div> </div> <div>5604 - Roll Cost Analysis</div> </div>									
		SUPPLIER - TOTALS				SUPPLIER - ROLL ANALYSIS			
SUPPLIER		ROLLS	TONS	COST	TURN TIME (HR)	TONS / ROLL	COST / ROLL	TURN TIME / ROLL	COST / TON
VILLARES		1,681	73,990,055	\$4,206,866	11,227	44,015	2,503	7	\$0.0569
UNITED		14	188,231	\$39,766	199	13,445	2,840	14	\$0.2113
UMECC		56	854,173	\$74,854	459	15,253	1,337	8	\$0.0876
SINTERMET		70	2,782,187	\$973,930	752	39,746	13,913	11	\$0.3501
SILVAN SANAYI		70	7,500,034	\$0	359	107,143	0	5	\$0.0000
SANDVIK		3	0	\$47,130	0	0	15,710	0	\$0.0000
PACIFIC/MITSUBI		4	59,789	\$9,453	49	14,947	2,363	12	\$0.1581
MBI-HEBEI		964	26,650,885	\$2,427,604	8,765	27,646	2,518	9	\$0.0911
MBI-FUJICO		398	14,463,379	\$5,802,881	6,024	36,340	14,580	15	\$0.4012
LEADAR ROLL		20	146,904	\$299,860	371	7,345	14,993	19	\$2.0412
KARK		84	2,030,520	\$704,024	475	24,173	8,381	6	\$0.3467
KANEMATSU		89	3,033,206	\$197,268	504	34,081	2,216	6	\$0.0650
HITACHI, THLND		98	5,321,505	\$152,775	669	54,301	1,559	7	\$0.0287
HITACHI		1,079	29,592,854	\$1,657,056	8,100	27,426	1,536	8	\$0.0560
CENT		38	2,296,318	\$451,476	853	60,429	11,881	22	\$0.1966
B.R.C.		2,414	95,352,872	\$5,711,006	18,928	39,500	2,366	8	\$0.0599
AKERS		46	724,759	\$205,845	310	15,756	4,475	7	\$0.2840
		TOTAL: 7,128	264,987,670	\$22,961,794	58,043				

Roderick

Cost/Roll

Supplier	Cost/Roll	Tons/Roll
SILVAN SANAYI	17500	0
CENT	10000	75000
HITACHI, THLND	9000	10000
VILLARES	7500	15000
SINTERMET	6500	90000
B.R.C.	6500	10000
MBI-FUJICO	6000	100000
KANEMATSU	5500	10000
MBI-HEBEI	4500	15000
HITACHI	4500	10000
KARK	4000	60000
AKERS	2500	40000
UMECC	2500	10000
PACIFIC/MITSUBI	2500	15000
UNITED	2000	25000
LEADAR ROLL	1500	100000
SANDVIK	500	100000

Cost

Supplier	Cost	Tons
MBI-FUJICO	5.8M	25M
B.R.C.	5.7M	100M
VILLARES	4.2M	75M
MBI-HEBEI	2.4M	50M
HITACHI	1.9M	25M
SINTERMET	1.5M	25M
KARK	1.0M	10M
CENT	0.8M	10M
LEADAR ROLL	0.7M	10M
AKERS	0.5M	10M
KANEMATSU	0.4M	10M
HITACHI, THLND	0.3M	10M
UMECC	0.2M	10M
SANDVIK	0.1M	10M
UNITED	0.1M	10M
PACIFIC/MITSUBI	0.1M	10M
SILVAN SANAYI	0.0M	10M

Cost/Ton

Supplier	Cost/Ton
LEADAR ROLL	2.04
MBI-FUJICO	0.40
SINTERMET	0.35
KARK	0.35
AKERS	0.28
UNITED	0.21
CENT	0.19
PACIFIC/MITSUBI	0.16
MBI-HEBEI	0.09
UMECC	0.09
KANEMATSU	0.06
B.R.C.	0.06
VILLARES	0.06
HITACHI	0.05
HITACHI, THLND	0.03
SILVAN SANAYI	0.00
SANDVIK	0.00

Our Goal

To be the leading provider of cutting edge steel manufacturing software
in the age of industry 4.0

Additional focus on:

- Roll Shop Analytics
- Preventative forecasting
- Process optimization
- Operator mobility, collaboration and communication
- Cutting-edge technologies

Thank You!

Questions?

Presented by: **Roderick Sandiford Jr.**
Director of Rolling and Finishing Operations